

The Nation's Prevention Agency

CDC **50**

1946
1996

Centers for Disease Control and Prevention

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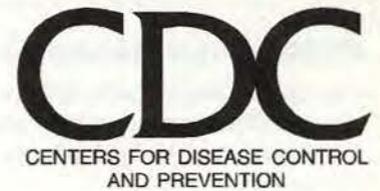
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*Director, Centers for Disease
Control and Prevention,
Administrator, Agency for Toxic
Substances and Disease Registry.*



CDC — 50 YEARS OF CHANGE AND CONTINUITY

CDC emerged in 1946, an organization born of war and dedicated to the control of disease. Its first challenge was to protect the United States, its citizens, and its returning armed forces from tropical diseases new to this nation. More recently, CDC has met other threats to health, here and abroad, using techniques tested by time and refined by current technology and knowledge.

Diseases and problems may change, but five basic priorities for continuing our commitment to public health have evolved from the experience of the first 50 years. These priorities will guide our efforts in the future century: strengthen essential public health services, expand our capacity to respond to urgent health threats, develop nationwide prevention strategies, promote women's health, and invest in the health of our youth.

PRIORITY 1 — STRENGTHEN ESSENTIAL PUBLIC HEALTH SERVICES

1946 As CDC was founded, U.S. forces were returning from the South Pacific, bringing with them the possibility of transmitting new and exotic diseases. CDC established a training program for state laboratory personnel to make possible early recognition of any imported diseases.

1996 Today the nation faces new and reemerging disease threats. CDC responds by training public health laboratory personnel in current techniques to identify such diseases as hantaviruses or strains of tuberculosis resistant to drugs or other treatment.

PRIORITY 2 — EXPAND CAPACITY TO RESPOND TO URGENT HEALTH THREATS

1951 At the onset of the Korean conflict, CDC established the Epidemic Intelligence Service (EIS) to train epidemiologists. The program was set up to protect public health in the event of biological warfare. Young EIS Officers developed epidemiologic skills that they applied to a broad range of infectious diseases. Their learning process involved detecting abnormal occurrences of disease. They also learned to identify risk factors, so that programs of prevention could be established. In 1955, these skills were put to use identifying the cause of paralytic disease among people who had received polio vaccine. Field investigations and data analysis pointed to vaccine from one manufacturer as the cause. Removing that one product (risk factor) from the market stopped the outbreak, and vaccine from other manufacturers was used to begin the successful eradication of polio from this hemisphere.

1996 Today those skills in epidemiology are being honed and applied to an ever-widening variety of diseases, both infectious and noninfectious. In 1995, national surveillance of injuries due to domestic violence was initiated.

PRIORITY 3 — DEVELOP NATIONWIDE PREVENTION STRATEGIES

1947 CDC designed and implemented the first national disease-eradication program, turning malaria control efforts toward eliminating the disease from the United States. The program was based on case findings and treatment, as well as on the use of pesticides to control mosquito vectors of the disease. It also became apparent that malaria was being overdiagnosed. When good laboratory practices were initiated, the number of cases fell, and eradication was achieved. On another front, surveillance was established to control the spread of polio.

1996 CDC has developed national strategies to limit death and disability from chronic conditions. Some of these strategies emerged from 13 prevention centers at universities across the country that are supported by CDC. These centers conduct and evaluate demonstration projects designed to prevent disease and promote health, especially among groups at high risk for disease and early death. Such support helps to expand knowledge and to increase successful applications of prevention strategies.

PRIORITY 4 — PROMOTE WOMEN'S HEALTH

1964 CDC began specific efforts to improve the health of women, assigning the first epidemiologist to a state health department to help evaluate a family planning program. Three years later, eight EIS Officers were assigned to family planning evaluation. These eight physicians were the largest cadre of family planning professionals anywhere in the Public Health Service. This activity continued and provided the epidemiologic basis for programs aimed at improving the health of women: warnings of the side effects of one specific intrauterine device, the Dalkon Shield; surveillance of adverse effects of illegal abortion; and redefinition of the problem of maternal mortality.

1996 By 1995, CDC's work with the epidemiology of sexually transmitted diseases (STDs) had shown that the leading cause of infertility among women was chlamydia infection. To combat this problem, CDC, in collaboration with the Office of Population Affairs of the Public Health Service, launched a critically important national public health program for women to prevent infertility due to treatable STDs. The principal goal of the infertility prevention program is the direct delivery of screening and treatment services to women at risk for chlamydia infection. Regional committees are responsible for 1) coordination of program operations, 2) data management, 3) quality assurance of specimen collection and laboratory processing, 4) negotiation of fees for laboratory tests and pharmaceuticals to reduce costs, and 5) training of clinicians.

To establish a sound scientific basis for a national infertility program, five centers are conducting research in these three program areas: 1) evaluating new diagnostic tools to improve detection of chlamydia infection, 2) developing a surveillance system, and 3) identifying risk factors for recurrent infection.

PRIORITY 5 — INVEST IN THE HEALTH OF OUR YOUTH

1962 CDC proposed the first national effort to improve the immunization status of children, and the Vaccination Assistance Act was enacted. With the passage of this Act, CDC and the states began a cooperative program to achieve and maintain high levels of immunity against diseases for which vaccines are now available. As a result of these efforts, polio has been eradicated from the United States and tetanus is a rarity, as is diphtheria. Measles continues to be a health problem, but incidence in the United States has been greatly reduced.

1996 CDC brought the epidemiologic approach developed in risk analysis of communicable diseases to bear on health problems of adolescents. The epidemiologic analysis of risk factors has been adapted to studying the risk-taking behavior of school-aged youth. A national, school-based surveillance system measures risk behaviors of young people in order to track trends, modify prevention programs, and inform state policymakers to help them set health priorities.

CDC was born with a deep commitment to the health of the public and a determination that being doctor to the community is a charge to all involved in public health. Today, CDC's name includes Prevention, a philosophy long-practiced and well-developed. CDC's continuing commitment is to ensure that prevention is built into the activities of all health workers, both public and private; to ensure a partnership among all levels of government and all sectors of society in the practice of public health; and to ensure a sound scientific basis that will always serve as a guide to policy decisions about health.

Please join me in recognizing CDC's 50 years of dedication to improving the public's health and continued vigilance and commitment to serve as the nation's sentinel for health.



David Satcher, M.D., Ph.D.
Director, Centers for Disease Control and Prevention
Administrator, Agency for Toxic Substances and Disease Registry

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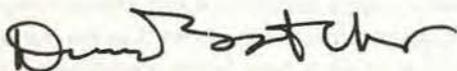
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PRIORITY 1 — STRENGTHEN ESSENTIAL PUBLIC HEALTH SERVICES

THE PEOPLE WHO PROVIDE THOSE SERVICES

Epidemic Intelligence Service

The Epidemic Intelligence Service (EIS) was established in 1951 at CDC to develop a cadre of field-trained epidemiologists able to meet national needs. The first EIS Officers concentrated primarily on investigating acute infectious disease outbreaks. Today, the scope of investigation and control includes acute and chronic infectious and noninfectious diseases, nutrition, reproductive health, injury, and illness due to environmental agents.

About 75 trainees enter the 2-year EIS program each July. Following a 3-week course in epidemiology and biostatistics, EIS Officers are assigned to CDC, state or local health departments, or other federal agencies under the supervision of senior CDC epidemiologists. Former, current, and incoming EIS Officers attend a 1-week conference each spring to keep abreast of the latest developments in epidemiology.

During the last four decades, the EIS program has trained more than 2,000 leaders in public health who serve not only at CDC, but as state health officers, state epidemiologists, foundation directors, World Health Organization (WHO) leaders, and deans of schools of public health.



*EIS Officer using muscle evaluation for polio.
Circa 1950s.*



EIS Officer examining child with smallpox in Niger.

Laboratory Scientists for Public Health

Until 1989, CDC provided laboratory training for public health laboratory scientists throughout the United States with a combination of Atlanta-based courses and workshops presented in the states by CDC staff. The National Laboratory Training Network (NLTN), established to provide a more efficient way of conducting this needed public health laboratory training, was implemented in 1989 through a cooperative agreement between the Association of State and Territorial Public Health Laboratory Directors (ASTPHLD) and CDC.

The NLTN is a laboratory training delivery system with seven field offices throughout the United States. The laboratory professionals, including CDC employees who staff these offices, identify laboratory training needs, collect and provide information about training resources, develop and deliver training activities, and evaluate the impact of training. Quality is strengthened and resources are used efficiently through the involvement of federal, state, and local public health agencies; academic institutions; manufacturers of laboratory tests and equipment; and professional laboratory organizations in NLTN partnership.

Since its inception, NLTN has trained almost 50,000 students in approximately 1,000 training sessions. Prepared to respond to public health emergencies, NLTN has provided training for hantavirus testing and for updating laboratory skills in response to disease outbreaks caused by *E. coli* O157 outbreaks. In 1994, 21 laboratory workshops and conferences on tuberculosis reached approximately 3,600 students. Innovative training delivery includes interactive satellite courses and computer

multimedia training modules.

Because of rapidly changing technology, an estimated 75% of today's work force will need to be fully retrained to meet the needs of the 21st century. NLTN is an efficient and effective tool to help meet this training need for public health laboratory scientists.

New Techniques for Scientists

To augment the training activities in public health laboratory medicine, CDC is always looking for better, simpler, less expensive methods of diagnosing disease. This type of research is not glamorous, Nobel Prize-winning research, but is unique in government. The fluorescent antibody (FA) technique used in many branches of microbiology was one of the early accomplishments of the CDC applied research program. This test was first used in basic research to aid in the understanding of the antigen-antibody reaction, and then forgotten. A CDC scientist found this in the literature 15 years later and turned it into a very practical laboratory method.

Over the years, CDC researchers have worked to standardize procedures for preparing reagents with the dyeing process. For example, CDC made history in 1977 by using the FA technique to identify *Legionella pneumophila*, the causative agent of Legionnaires' disease, and it provided state laboratories with the first reagents for Legionella. Most recently, another staining technique was adapted to the Ebola virus and was instrumental in determining the epidemiology of the latest Ebola epidemic in Zaire.



In the 1970s, Dr. Joseph E. McDade and Dr. Charles C. Shepard (1914-1985) work to solve the Legionnaires' disease mystery.

Public Health Advisors

In 1948 the federal government hired six recent college graduates and lent them to the Maryland State Health Department to solve a critical staffing problem that hindered efforts to control venereal disease. These employees were first designated as health program representatives and later called public health advisors (PHAs).

When the Venereal Disease Program was transferred to CDC in 1957, public health advisors came with it. PHAs have since become the backbone of field support for public health programs. Their knowledge of the real problems of program implementation at the state and local level, particularly in the inner cities, has been critical in helping CDC to develop practical programs for combating public health problems.

PHAs serve in all CDC programs and develop great flexibility in responding to emergency health problems, such as those surrounding the eruption of Mount St. Helens and the Three-Mile Island emergencies. They were an integral part of the global effort to eradicate smallpox.

From a program to train venereal disease representatives, the PHA series has evolved as a career system that develops public health managers with management skills and extensive program experience.

Senior Public Health Officials

Established in 1991 and funded through a cooperative agreement between CDC and the Western Consortium for Public Health, the Public Health Leadership Institute was developed to strengthen the public health system by enhancing leadership skills of senior public health officials. The Institute is a year-long program consisting of a week-long learning retreat, interactive seminars and computer conferences, small learning communities, scholar-initiated projects and case studies, and a personal leadership assessment component. The Institute curriculum focuses on four major themes: current and future challenges to public health; leadership and vision; political and social change; and communications and information. In its first five years, 280 scholars representing local, state, federal, international, academic, and private organizations completed the program.

Global Epidemiologists

Since 1980, CDC has built on the experience of the EIS program to collaborate with such organizations as the World Health Organization (WHO), the United States Agency for International Development (USAID), and the Rockefeller Foundation to help foreign governments establish Field Epidemiology Training Programs (FETPs). Australia, Colombia, Egypt, Indonesia, Italy, Mexico, Peru, the Philippines, Saudi Arabia, Taiwan, Thailand, and Zimbabwe have been assisted in this way.



EIS Officers travel the globe to investigate epidemics.

Established FETPs are flourishing and are becoming significant health resources for their areas. Approximately 95% of all FETP graduates have remained in government service as medical epidemiologists and medical officers at local, district, provincial, and national levels. FETPs have been involved in a variety of public health activities, including conducting injury studies in major Indonesian cities that provided valuable data supporting a new policy mandating helmet use by motorcycle riders; prompting investigating an epidemic of group A meningococcal meningitis that occurred in Saudi Arabia during the annual pilgrimage to Mecca. The investigation greatly facilitated case recognition, treatment, and reporting in the countries to which affected pilgrims had returned. An investigation of a rubella epidemic in Thailand that resulted in an excessive number of cases of congenital rubella syndrome prompted the Thai FETP to propose and implement changes in the country's vaccination practices.

Public Health Consultants in Developing Countries



The Field Epidemiology Training Programs (FETPs) are now flourishing health resources encompassing virtually every area of public health.

CDC, in collaboration with USAID and WHO, has worked for three decades to improve the health and survival of children in the developing world. Starting with the Smallpox/Measles Program and continuing through the Africa Child Survival Initiative—Combating Childhood Communicable Diseases (ACSI/CCCD) project, CDC has had a major impact on the quality of life for children in Africa.

The goals of CCCD were to strengthen the public health capacity of African nations; to plan, implement, and evaluate child survival programs on the basis of appropriate low-cost intervention strategies; to reduce deaths of children younger than 5 years by 25%; and to decrease the number of deaths and diseases preventable by immunization and by control of diarrhea and malaria. In most countries, the goals were realized in spite of logistical and manpower difficulties.

Another important activity conducted in collaboration with international ministries of health involved the

long-term assignment of CDC personnel to USAID missions through the Technical Assistance in HIV/AIDS and Child Survival (TAACS) program. TAACS advisors coordinated various health portfolios for USAID, provided assistance in policy development and program direction, improved epidemiologic surveillance, and assisted in implementing HIV/AIDS prevention and control programs. Overseas assignments related to HIV/AIDS have included assignments in Bolivia, the Central African Republic, Indonesia, Jamaica, and Uganda.

INFORMATION FOR PUBLIC HEALTH DECISION MAKING

Morbidity and Mortality Weekly Report

National reporting of statistics on deaths in the United States began in 1893, when Congress mandated that state and municipal authorities report information weekly about certain diseases to the Public Health Service (PHS). The PHS Surgeon General in 1902 began providing forms to standardize death statistics, and by 1949 all states were reporting regularly to the National Office of Vital Statistics. This weekly

reporting system became the *Morbidity and Mortality Weekly Report*. In 1961, the *MMWR* responsibility was transferred to CDC and became an integral part of the surveillance and epidemiology activities.

Originally the *MMWR* reported only on communicable diseases. It now provides current information on all aspects of public health and disease and injury prevention.

The *MMWR* is an important source of information about CDC's public health surveillance, communication, and disease-prevention control activities with the states. In addition to the weekly report, the *MMWR* Series includes the *CDC Surveillance Summaries*, the *Recommendations and Reports*, and the *Annual Summary of Notifiable Diseases*. A major medical journal reprints portions of the series in each of its issues. Paper copies of the *MMWR* are published by CDC, the U.S. Government Printing Office, and a private publisher. These copies are then circulated to a worldwide audience. The *MMWR* is now available throughout the nation by means of electronic mailings and data bases.

National Center for Health Statistics

The transfer to CDC in June 1987 of the National Center for Health Statistics (NCHS) marked an important union of efforts to prevent disease and promote health. NCHS monitors the nation's health through collection and analysis of vital and health statistics. CDC uses this information to suggest national health policy, to plan and administer public health programs, and to conduct epidemiologic and biomedical research.

NCHS data cover the full spectrum of health issues from birth to death. Large-scale population-based surveys gather data through household interviews, standardized physical examinations, and laboratory testing. These data determine the extent of illness and disability, identify groups at risk, and track the public's knowledge and attitudes on such health topics as HIV infection and AIDS.

The National Vital Statistics System, operated in cooperation with state vital statistics offices, produces the data to track trends in infant deaths, leading causes of death, life expectancy, and patterns of birth and fertility. Special surveys focus on maternal and child health and on reproductive health issues. With plans for expansion under way, the NCHS National Health Care Survey will monitor the use of health services in the full array of inpatient and outpatient settings.

Using Vital Statistics Data To Improve Health

New certificates to report births, deaths, and fetal deaths came into use throughout the nation in 1989. CDC worked with state vital registration and statistics officials, health care providers, and users of the data to develop these new forms, which include new categories of information essential for prevention, research, and health education. Not only do these forms collect more detailed data, but through their use, new types of data are made available nationwide through the reporting system. For example, patterns of smoking, alcohol use, and weight gain during pregnancy are now known for the mothers of the more than four million babies born each year in the United States. Data on these risk factors and behaviors have been available previously from various surveys on some births, but never before for virtually all births in the country.



CDC MMWR staffer in an outward show of dedication to the work. MMWR circulation can no longer be measured by subscription rates; the manuscript reaches countless readers through the Internet.



NHANES III gathers information used to assess the growth and development of children and infants in the United States.

NHANES III

CDC's National Health and Nutrition Examination Survey (NHANES) gathers data on the health and nutritional status of the American public through interviews, standardized examinations, and laboratory testing. NHANES has been conducted regularly since the early 1960s. The latest survey, NHANES III, began in 1988 and included 40,000 people before it was completed in 1994. NHANES III studies indicate a stronger association between exposure to passive smoke and the increased risks of having low birth-weight babies.

NHANES III represents the largest health examination survey ever conducted, in terms of both population covered and the array of health topics on which data were gathered. Not only is the relationship between diet and health studied, but much of what we know about the patterns of heart disease, arthritis, diabetes, and many other chronic conditions comes from this survey. In addition, the data obtained help to determine the basis for setting national standards for blood pressure and serum cholesterol levels and other measurements. NHANES growth charts for infants and children are used internationally to monitor growth and development.

Behavioral Risk Factor Surveillance System

CDC's Behavioral Risk Factor Surveillance System (BRFSS) helps states to monitor

the prevalence of major health risks and the status of public knowledge about a variety of health-related issues. A total of 54 states, territories, and jurisdictions use this flexible epidemiologic tool—the largest continuous telephone survey in the world—to collect state-specific data on such topics as seat belt use, drinking and driving, nutrition, mammography use, sedentary lifestyle, and hypertension.

States use data collected by the system to develop and evaluate intervention programs. Findings from the survey are also used to justify requests for additional resources in particular areas and to secure additional support for future programs. Because BRFSS is flexible, states can add their own questions to the survey to meet their needs and to manage health-related emergencies.



The Behavioral Risk Factor Surveillance System (BRFSS) monitors major health risks, giving states data to develop and evaluate their own intervention programs.

New Technology for Information Management

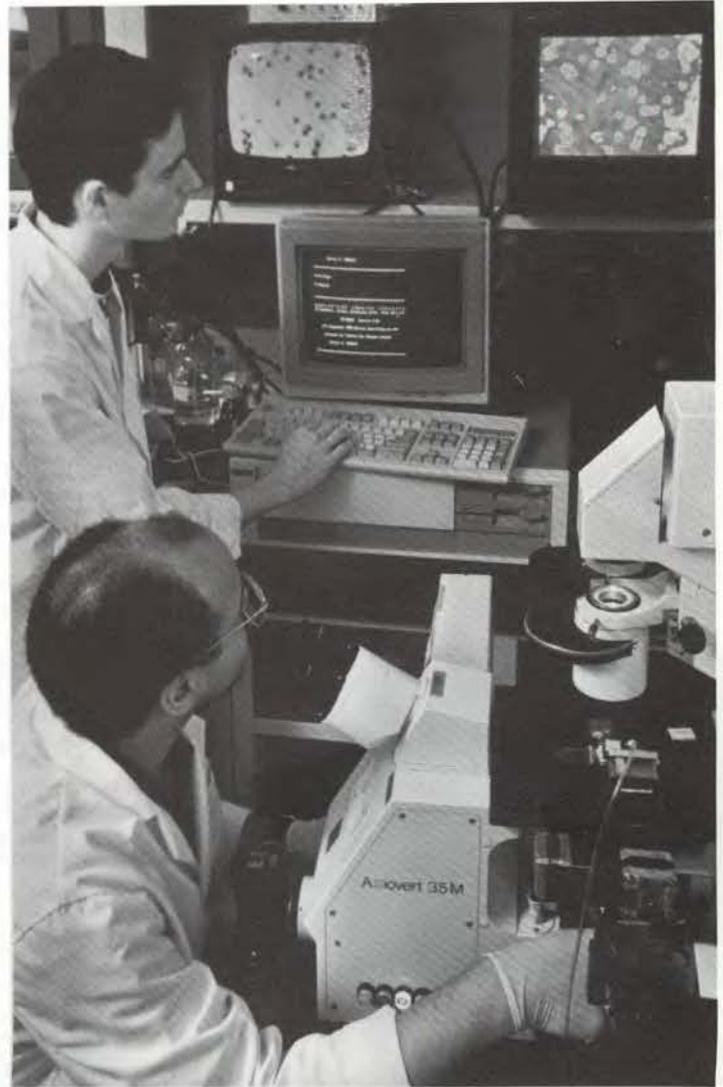
Much of CDC's complex history in computer technology can be captured under four topics: 1) computer communication, 2) hands-on computing for public health professionals, 3) public health computing, and 4) leadership and coordination.

CDC became involved in computer communication in the 1970s by setting up terminals in the offices of state epidemiologists to enable direct communication between CDC and state health departments. This Public Health Network provided basic e-mail service for routine or emergency use and for transmission of surveillance data to CDC for analysis and publication. The WONDER System, developed in the second half of the 1980s, still provides free e-mail accounts for public health workers in this country and abroad.

In the late 1980s, CDC also developed one of the most extensive local area network (LAN) systems in the country for its employees; soon after, CDC was connected with Emory University, Atlanta, Georgia, via a wide area network (WAN). With these systems, CDC has entered the Internet world; the CDC home page is listed among the "100 top Internet sites" by at least one popular computer magazine. CDC is applying the LAN and WAN concepts through its INPHO project to enhance communication among local and state public health agencies.

Early efforts at hands-on computing for epidemiologists were made in the mid-1970s; in 1985, the Epi Info program, which is used to obtain epidemiologic information, allowed the user to type a questionnaire on the screen in field-usable form and to construct data base files automatically. This system, made available worldwide, is now in use in more than 117 countries; the manual has been translated into 11 different languages. Epi Map, developed jointly with the WHO, added mapping capability to Epi Info.

By 1989, all 50 states, several territories, New York City, and the District of Columbia were transmitting electronic records weekly to CDC over the CDC-developed National Electronic Telecommunication System for Surveillance (NETSS). Another system, the Public Health Laboratory Information System (PHLIS), provides software to state laboratories for transmitting laboratory data within the department and to CDC. This project to establish a unified and logical surveillance system has been expanded to include a module that will give electronic early warning of outbreaks of Salmonella food poisoning.



CDC's newest labs are equipped with digital imaging and other new technology.

PRIORITY 2 — EXPAND CAPACITY TO RESPOND TO URGENT HEALTH THREATS

OLD DISEASES THAT REFUSE TO GO AWAY



Campaigns to educate the public about TB have become critical as disease rates increase in urban centers and among the populations most at risk.

Tuberculosis

Tuberculosis (TB) was the leading cause of death for Americans when this century began. The number of cases declined significantly between 1953, when nationwide reporting was first implemented, and 1984, when the decline stopped. Now this severe bacterial disease is back with a vengeance, particularly among people with HIV infection.

Tuberculosis cases reported in 1991 represented an 18% increase over the number reported in 1985. The rates have been increasing dramatically in those areas where HIV infection is most prevalent, especially in large urban centers and among those population groups at greatest risk (25- to 44-year-old men). Complicating the problem is the growing number of cases of multidrug-resistant TB (MDR TB). Of 16 outbreaks of TB due to drug-resistant organisms reported to CDC since 1975, 12 were reported in 1990-1992, and 11 of these 12 occurred among people with HIV infection. Seven

outbreaks occurred in health care settings, one in a drug treatment center, one in a shelter for the homeless, one in a prison, and two in communities.

MDR TB can be prevented by providing TB patients with adequate initial treatment to prevent the emergence of drug-resistant organisms and by directly observing administration of TB medications to all patients. Results of this prevention effort are apparent in New York City, where the sharp increase in cases was reversed in 1995.

Foodborne and Waterborne Illness

CDC monitors the incidence of foodborne disease through its Foodborne Disease Surveillance System. Epidemiologists conduct numerous investigations of outbreaks to determine causative agents and implement control measures. New developments, such as enzyme-linked immunosorbent assays and the polymerase chain reaction, enable laboratorians to identify pathogenic organisms quickly, to support rapid diagnoses, and to provide reference services for states.

Despite progress in improving the quality of food and food handling in the United States, an estimated six million cases of bacterial foodborne disease and 9,000 deaths occur each year; however, much foodborne illness is sporadic and is never reported.

In recent years, CDC investigations have identified new food vehicles as causes of substantial disease. CDC's discovery that two outbreaks of hemorrhagic colitis in 1982 were caused by *Escherichia coli* 0157:H7, a bacterium only once before linked to human illness, emphasized the need to protect the public from contaminated foods from animal sources.

Grade A shell eggs harboring *Salmonella enteritidis* in their yolks are causing epidemic foodborne disease in the northeastern United States, and the problem is spreading to other parts of the country. A large proportion of the type of salmonella causing disease in humans is resistant to one or more antimicrobial agents.

Changing technology and life styles both contribute to the continued problem of salmonella food poisoning. CDC investigators demonstrated that ice cream premix prepared in one state and distributed nationwide was responsible for a large outbreak of salmonella food poisoning in 34 states. The popularity of iguanas as pets has opened up a new avenue of infection from salmonella organisms. In the 1960s, CDC documented the risk of salmonellosis from turtles, and in the 1990s reptilian-associated disease is once again a problem.

Concern about the quality of the nation's drinking water was heightened in the spring of 1993 by the largest outbreak of waterborne disease in U.S. history. An estimated 400,000 people in Milwaukee, Wisconsin, suffered a diarrhea-like illness from infection with the microscopic parasite *Cryptosporidium*. Since then, several outbreaks of cryptosporidiosis have been associated with contaminated swimming pools, lakes, and drinking water in other cities. A repeated survey of private water wells in the Midwest will provide new data that will be available mid-1996. Information from this survey will be used to develop national intervention strategies.

Nosocomial Infections

Efforts to prevent infections among patients while they are being treated in a hospital have been a responsibility of CDC since the mid-1950s, when its epidemiologists began investigating nosocomial outbreaks around the country.

CDC established the National Nosocomial Infections Surveillance (NNIS) system in 1970 to monitor trends in nosocomial infection rates. Recent analyses of NNIS data have demonstrated the importance of using uniform case definitions and methods of collecting and analyzing data to compare infection control procedures and risks to patients both within and between hospitals. Data indicate that U.S. hospitals with established, standardized nosocomial surveillance and control programs have the technologic capabilities to determine procedure-associated infection risks and to reduce them by 32%.

Cholera

After an absence of nearly a century, epidemic cholera reappeared in South America in January 1991 and quickly spread to several countries, causing more than 400,000 cases and thousands of deaths. In the United States, a few cases of this acute diarrheal disease have occurred among people who traveled to South America or among those who ate contaminated food brought back by travelers.

In July 1991, oysters harvested from Mobile Bay, Alabama, tested positive for the disease-causing bacterium *Vibrio cholerae* 01. The infection may have come from infected bilge water dumped in the harbor by ships from South American ports; however, no trace of this infection was found in oysters the following fall. This infection was the second alarm to the oyster industry in the Gulf of Mexico during the past 25 years.



Increased invasive technology of medical care is exposing people to greater risks of hospital infections.

CDC and the Louisiana State Health Department conducted studies in 1978 that revealed a marine reservoir of cholera along the Gulf Coast. Previously, humans were thought to be the only reservoir for cholera. Subsequent investigations of cholera cases in the United States and several cholera outbreaks in other countries demonstrated that food is a very important vehicle of transmission for the disease, which was once thought to be almost exclusively waterborne. CDC has also shown that cholera can spread within households by contamination of food by infected food handlers.

During the current cholera epidemic in the Americas, CDC has assisted public health officials in affected countries by participating in outbreak investigations, providing laboratory confirmation of disease, and training health care workers in surveillance, laboratory, and treatment procedures.

Plague

In 1994, the world's press was broadcasting news of an epidemic of plague in India. Travelers were alarmed; the health care system in India was disrupted. Reports indicated that the disease was pneumonic in character and could spread by the airborne route. CDC, in cooperation with WHO and at the request of the government of India, investigated the outbreak and tested specimens at the National Center for Infectious Disease (NCID) laboratory in Fort Collins, Colorado. Although there were a few isolates of plague, the outbreak was actually small, but pointed up the need for surveillance for diseases thought to belong in the past.

EMERGING DISEASES

Viral Hemorrhagic Fevers

Viral hemorrhagic fevers cause severe illness or death among populations in Asia, Africa, Europe, and South America and sometimes among Americans traveling abroad. CDC conducts research and assists other countries in efforts to prevent and control these viral illnesses, for most of which there are no vaccines and no cures.

In 1976, research found the causative agent of an epidemic form of viral hemorrhagic fever, a disease which had affected several thousand American troops during the Korean War. It is now known that the virus is transmitted to humans by many different rodent species.

Also in 1976, CDC led public health and scientific teams in Zaire and the Sudan, where two large outbreaks of a lethal hemorrhagic fever were occurring. The causative agent, Ebola virus, was identical in shape and appearance to the previously isolated Marburg virus but was serologically unrelated. Agency scientists isolated Marburg virus from a patient in Kenya in 1980, thus extending the known geographic distribution of the disease. CDC has 1) characterized the Ebola and Marburg viruses as unrelated to other viruses, 2) conducted field studies to identify their distribution, and 3) planned strategies to contain the disease outbreaks that they cause.



The Ebola virus.

An outbreak of severe hemorrhagic fever among imported primates in 1989-1990 resulted in new requirements for the importation of monkeys for biomedical research and the development of new diagnostic techniques for filoviruses.

In 1995, CDC responded to an outbreak of Ebola virus disease among humans—the fourth such known—in Kikwit, Zaire. A new CDC diagnostic test for the virus facilitated the epidemic investigation. Twelve CDC personnel traveled to assist the government of Zaire and WHO in investigation and control activities. Scores of CDC employees responded to the Ebola outbreak from their posts in Atlanta.

Hantavirus

An outbreak of hantavirus pulmonary syndrome (HPS) in the southwestern United States in the summer of 1993 was caused by a previously unrecognized hantavirus whose primary host is the deer mouse (*Peromyscus maniculatus*).

One hundred twenty-seven cases of HPS have been identified in the United States; 63 have been fatal. Cases (one each in Florida, Louisiana, Rhode Island, and Texas) have been reported outside the geographic area inhabited by *P. maniculatus*. Recently, a new but related hantavirus strain, Black Creek Canal virus, was isolated in cotton rats in Florida.

CDC's attention to the epidemiology and the eventual control of hantavirus disease has included studies of the distribution of the viruses in their reservoir species as the first step in designing effective strategies for control. CDC has collaborated with the National Park Service in studying different methods of rodent control by rodent proofing dwellings and by modifying the environment around houses to make them less desirable to rodents.

Lassa Fever

Lassa fever is an acute viral illness that occasionally results in a fatal hemorrhagic disease. CDC helped to describe this disease in 1969, when cases appeared in Nigeria. More recently, the agency has found that Lassa fever is much more common in West Africa than previously believed, with 100,000 new cases a year. CDC research has led to the production of monoclonal antibodies to the Lassa virus, a process which allows improved diagnosis of Lassa fever. The drug ribavirin is effective in treating the disease.

CDC is helping to train physicians in West African nations in the clinical and laboratory diagnosis of Lassa fever and is also conducting studies related to the development of a Lassa fever vaccine.



Legionella pneumophila.

Legionnaires' Disease

Legionnaires' disease was first recognized in July 1976, when an explosive outbreak of pneumonia occurred mostly in people who had attended an American Legion convention in Philadelphia. In 1976, CDC researchers isolated the causative organism—which they named *Legionella pneumophila*—for the first time. More than 30 species in the *Legionella* genus have since been identified.

Legionnaires' disease is not new. Previous outbreaks of unexplained respiratory disease have now been attributed to the same bacterium; one of these was a 1968 outbreak of a milder form of the disease called Pontiac fever because it occurred in Pontiac, Michigan. The *Legionella* species is now recognized as a common cause of sporadic and epidemic cases of pneumonia, in both hospitals and communities.

Multidrug-Resistant Bacteria

With the widespread use of antibiotics in today's society, new antimicrobial drug-resistance patterns have become a great concern in recent years. Resistance to antibiotics in infectious organisms such as *Haemophilus influenzae*, *Neisseria gonorrhoeae*, *Streptococcus pneumoniae*, and *Mycobacterium tuberculosis* has caused treatment failures and has made more costly treatment regimens necessary.

The serious consequences of drug resistance have been emphasized by epidemics of drug-resistant salmonella, *shigella*, and *Vibrio cholerae* infections and outbreaks of resistant nosocomial pathogens, including *Staphylococcus aureus*. An epidemic of multidrug-resistant *Shigella dysenteriae*, which was first recognized in central Africa in the late 1970s, has ebbed and flowed over the last decade, spreading into neighboring geographic areas. The epidemic strains have acquired increasing resistance. In an epidemic in 1990 in Burundi, the organism was resistant to all available oral antimicrobial agents except nalidixic acid. In the United States, *Shigella* strains resistant to trimethoprim/sulfamethoxazole emerged on Native American reservations and in other settings in the mid-1980s.

CDC has launched a program to promote the appropriate use of antibiotics as a method of slowing the increase in drug resistance. This program is aimed at practicing physicians and has enlisted the support of the American Academy of Pediatrics. CDC and the Academy are developing standards for the diagnosis and treatment of upper respiratory conditions, one of the most common reasons for the overuse of antibiotics.

PANDEMIC INFLUENZA

Influenza

Influenza epidemics occur almost every winter in the United States, frequently resulting in increases in outpatient visits and hospitalizations. Elderly persons and those with underlying health problems are at increased risk for complications of influenza. The mortality rates for influenza can rise abruptly during pandemics. In 1972-1973 and 1990-1991, 20,000-40,000 influenza-associated deaths occurred in the United States.

In 1947, the WHO established an international network of collaborating laboratories to monitor the emergence and spread of new epidemic and pandemic strains of influenza. One of the three WHO collaborating Centers for Influenza is located at CDC. These Centers are responsible for the antigenic and genetic

characterization of influenza virus strains found throughout the world. Surveillance collected at the WHO Centers helps scientists detect and track important new influenza virus variants and determine whether these new variants should be included in the annual influenza vaccine. In recent years, CDC has pioneered the use of a variety of more modern techniques to generate more accurate data.

Currently, three groups of influenza viruses are circulating worldwide among humans: one type B and two type A. All three groups are tracked and included in the influenza vaccine. Influenza type B viruses have been circulating continuously since at least 1940—when they were first identified. The type A(H3N2) viruses first emerged as the “Hong Kong” influenza pandemic of 1968 and have been circulating ever since. The type A(H1N1) subtype or “Russian” influenza viruses reemerged in 1977 after an absence of 20 years and have continued to circulate.

Swine Flu

In 1976, when CDC scientists identified swine influenza-like virus isolates in specimens obtained from army recruits at Fort Dix, New Jersey, they feared a worldwide pandemic. A similar strain had caused the influenza pandemic in 1918. Over the years it had not caused human disease, although it continued to cause disease in swine (hence, swine flu). Such major changes in the influenza virus had periodically caused pandemics, accompanied by a significant increase in the numbers of deaths (for example, the influenza epidemics of 1957 and 1968).

After much deliberation and concern that the United States had a large susceptible population, health officials instituted a national program to vaccinate as many U.S. citizens as possible before the 1976-1977 influenza season. More than 40 million people were vaccinated before the program was stopped, when surveillance established by CDC detected cases of Guillain-Barré syndrome (GBS) associated with the swine influenza vaccine. The epidemic of swine influenza did not occur. Although controversy surrounded this national immunization program, a great deal was learned that could be applied to improve subsequent influenza control efforts.

Pandemic Preparedness Plan

The need for a formal plan to identify and deal with novel influenza viruses with pandemic potential was recognized by public health scientists even before the swine influenza immunization campaign of 1976. However, difficulties that arose during this program galvanized U.S. scientists to write the first national plan for pandemic influenza in 1978. During the 18 years since the first plan was written, a number of scientific, technological, social, and political developments have necessitated the drafting of a new pandemic plan. An interagency working group of influenza experts has been convened to write a plan for action in the event that a new influenza strain with pandemic potential is detected. This new plan is based on the premise that the best way to prepare for an influenza pandemic is by improving the prevention and control of influenza during the current interpandemic period. In this plan, CDC would serve as the “mission control” center during an influenza pandemic, responsible for initiating and coordinating a myriad of activities related to influenza prevention and control.

THE BIG DISABLERS

CDC helps get the public health message to smaller rural communities through programs such as the Planned Approach to Community Health.

Community-Based Chronic Disease Prevention Projects

As a first step in helping states provide community access to chronic disease prevention programs, CDC funded programs in Alabama, Maine, and Ohio during 1987. It directed more than 50% of this funding to help plan and implement programs benefiting minority populations.

The three state health departments receiving funds developed innovative plans to initiate intervention activities in selected communities. Each state identified a minority community to benefit from programs that targeted such specific factors as high cholesterol levels among rural blacks in Green County, Alabama, and smoking and sedentary lifestyle among Penobscot Indians in Maine.

Today, CDC assists chronic disease efforts in states and communities by providing funds and by helping to translate research findings into community programs that encourage healthier lifestyles. Examples of such programs include the Planned Approach to Community Health program, employee lifestyle programs, and community risk-reduction programs centered on nutrition, smoking cessation, and exercise.

Prevention Of Unintentional Injuries

Unintentional injuries (for example, those caused by car crashes, falls, and burns) cripple and kill Americans—young and old—every year. CDC works with partners, including state health departments and universities, to conduct research into what puts people at risk for unintentional injuries.

It conducts and supports other research to identify and develop ways to prevent injuries and to find effective methods to train health professionals in injury control. The research results led to:

- Recommendations to state and local health departments or other organizations for use in planning injury-control programs. For example, the use of bicycle helmets can reduce the risk of injuries by 85%. The recommendations emphasize the importance of wearing helmets and the need for cities, states, and other localities to adopt a multifaceted approach to increase helmet use.
- Recommendations that substance-abuse treatment be linked to strict legal sanctions to prevent deaths in alcohol-related automobile crashes. Research by CDC and North Carolina investigators showed that young people (ages 16 to 29) and adults (older than 30 years) who were arrested for drunk driving were more likely to die in future crashes involving alcohol than were others. Recommendations of the study, if followed, would decrease future deaths in alcohol-related crashes.

Injuries in and out of the workplace have long exacted a heavy toll in lives lost, disabilities suffered, and quality of life decreased. Injury is the leading single cause of death for Americans ages 1 to 44. Injuries, primarily from car crashes and assaults, are the leading causes of death for people younger than age 19.

Diabetes Control and Prevention

Each year, diabetes causes or contributes to the deaths of more than 157,000 Americans, a disproportionate share of whom are black, Hispanic, or Native American. People with diabetes not only have shorter life spans, they also suffer from such complications as blindness, lower-extremity amputation, end-stage renal disease, vascular disease, and adverse pregnancy outcomes.

In 1988, Congress authorized CDC—a long-time front runner in diabetes prevention and control—to take the lead in coordinating all federal activities to translate important diabetes research findings into widespread clinical and public health practice. CDC works closely with states and communities to help them integrate proven diabetes prevention and control strategies into their medical care systems. These state-based diabetes control programs target minorities, older Americans, and other populations at elevated risk for diabetes and its complications.

A diabetes module was developed and implemented by CDC in 1995 for use with the Behavioral Risk Factor Surveillance System in 36 states. Also in 1995, CDC launched an initiative focusing on preventing diabetes and its complications in the Latino community of the United States and its territorial possessions.

Premature Death by Suicide

CDC analyzes mortality data and data from the U.S. Department of Justice to characterize the problem of premature death from violence. Information from the analysis is used to educate the public and policymakers about the current severity of the problem and about trends. For example, in 1995 an analysis of *Suicide in the United States, 1980-1992: Violence Surveillance Summary Series, No. 1* was published. The report, which covered rates of suicide in this country and trends over time, showed that:

- Suicide rates increased among young people ages 10 to 19, among young black males, and among elderly males of all races.
- Suicide rates for middle-aged adults declined, but the rate for Americans older than 60 increased for the first time since the late 1930s.
- Firearms accounted for 77% of the increase in suicide rates from 1980 to 1992 and were disproportionately responsible for the increased rate among the young and elderly.



Unintentional injuries can be reduced when CDC recommendations for injury control are implemented.



Suicide has increased among young people ages 10 to 19.

*CHEMICALS IN OUR ENVIRONMENT***ATSDR**

The mission of the Agency for Toxic Substances and Disease Registry (ATSDR) is to prevent adverse human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution in the environment. To carry out its mission, ATSDR conducts public health assessments, health studies, surveillance activities, and health education training at waste sites on the U.S. Environmental Protection Agency's National Priorities List. ATSDR also has developed toxicological profiles of hazardous chemicals found at these sites. The agency works closely with state, local, and other federal agencies.



Hazardous substances and pollution can diminish the quality of life for everyone.

Reye's Syndrome

Reye's syndrome—a rare condition that causes brain and liver damage—was first described in 1963 by R.D.K. Reye in Australia and by George Johnson, an EIS Officer assigned to North Carolina. In 1973, CDC documented the first nationwide outbreak of 374 cases of Reye's syndrome associated with influenza B activity. Since then, the majority of cases have been in young children, but cases in teenagers and young adults have also been reported.

CDC established ongoing Reye's syndrome national surveillance in 1976; initially, 300 to 500 cases were reported annually. Case-control studies conducted in Arizona, Michigan, and Ohio from 1980 to 1982 showed an association between Reye's syndrome and salicylates. Since 1985, aspirin-containing products have been labeled with a warning about Reye's syndrome. In 1987, a PHS study team led by CDC reported that more than 90% of cases could be prevented by reducing the use of aspirin for the treatment of children and adolescents with chickenpox and influenza-like illness. Increased public awareness and labeling have reduced the use of aspirin as a childhood drug, and cases of Reye's syndrome have declined considerably.

Love Canal

In the late 1970s, contents of an abandoned chemical waste dump in Niagara Falls, New York, began to contaminate surrounding inhabited areas. In 1980, CDC assumed lead responsibility in the Department of Health and Human Services for directing and coordinating health studies of Love Canal residents. As part of its assistance, CDC 1) conducted studies of chromosome damage among residents, 2) managed the cleanup of Love Canal, 3) established criteria for rehabilitation of the area, 4) conducted studies on reproductive outcomes, and 5) began the long-term health care follow-up of Love Canal residents.

Toxic Oil Syndrome

Toxic food oil sold as olive oil in central and northwestern Spain in 1981 caused an explosive and massive outbreak of a severe and sometimes fatal illness. CDC assisted the Spanish Ministry of Health in investigating the outbreak, the first manifestations of which were pneumonia-like symptoms that progressed in many patients to a chronic illness involving neurologic and other findings. More than 20,000 people were affected and more than 300 died.

Studies showed a strong link between the use of the suspect food oil and illness. Spanish authorities seized unsold suspect oil and exchanged consumers' suspect oil for pure olive oil. By September 1981, very few new cases of illness occurred, but people who first reported with pneumonia-like symptoms began returning approximately 3 months after the onset of their illness for treatment of neurologic and other symptoms. Epidemiologic and laboratory work here and abroad established the association between the tainted oil and the outbreak. Thousands of people continued to have symptoms 11 years after their initial illness.

Eosinophilia-Myalgia Syndrome

An outbreak of a previously unreported and little-understood acute illness challenged CDC epidemiologists in 1989. The illness, called eosinophilia-myalgia syndrome (EMS), involved severe, debilitating muscle weakness and a variety of other incapacitating symptoms and had a clinical picture similar to that of toxic oil syndrome.

During field work, investigators uncovered a common link: all of the patients had ingested the amino acid L-tryptophan. After the Food and Drug Administration (FDA) recalled L-tryptophan from the U.S. market in November 1989, the number of reported cases dropped. Surveillance through February 1992 reported a total of 1,510 cases, including 38 deaths.

Initial investigations suggested that EMS was not caused by L-tryptophan itself but by a contaminant. Later studies showed an association between EMS cases and L-tryptophan from one manufacturer; however, the exact step in the manufacturing process at which the contamination occurred has not yet been identified.

Products containing L-tryptophan were marketed in the United States as food supplements. Many people also used them for pharmacologic purposes, most commonly for treating insomnia, premenstrual syndrome, and depression. Some people reported using the supplements for bodybuilding, weight control, and drug rehabilitation.

DISASTERS—TECHNOLOGIC AND NATURAL

Refugee and Famine Assistance

Since its earliest days, CDC has helped other nations respond to crisis situations presented by famine, natural and technologic disasters, and the health needs of refugees. In 1968, the agency provided the first concentrated assistance overseas during the Biafran war in Nigeria by conducting nutrition and disease assessments and assisting local health officials in dealing with other famine-related health problems.

In response to requests from the Department of State, USAID, and international agencies, CDC provides epidemiologic surveillance in famine situations 1) to assess nutritional status and actual or potential health problems, 2) to identify the need for food and for disease prevention and disease control, and 3) to evaluate the effectiveness of interventions.



CDC assists in famine relief in Nigeria (1968).

Aid to the Newly Independent States

The dissolution of the USSR has led to chaotic conditions in the epidemiologic and surveillance systems in the newly independent states that made up the former Soviet Union. CDC, with the support of USAID, has trained more than 120 epidemiologists from all of the Republics and has assigned more than 20 staff members to work in the area. More than training, the assistance has included hands-on help with a diphtheria epidemic in the Russian Republic, with environmental and occupational problems, and in organizing a mass immunization program in the Republics.

Disaster Relief

In the wake of floods, famines, tornadoes, and earthquakes, CDC teams offer disaster assistance to many nations. For example, after a major earthquake in Mexico in 1985, specialists were consulted about ways to maintain safe drinking water and sanitation systems for the people of Mexico City. Other examples include responses to the heavy floods in Bangladesh, epidemic meningococcal meningitis in Ethiopia and Kenya, and the plight of refugees in Ethiopia, Iraq, Rwanda, Sudan, Thailand, and Turkey.

CDC coordinates the activities of the WHO Collaborating Center for Disaster Preparedness and Response. It also collaborates with the United Nations High Commissioner for Refugees, the U.S. Office of Foreign Disaster Assistance, and the U.S. Department of State.



PRIORITY 3 — DEVELOP NATIONWIDE PREVENTION STRATEGIES

MALARIA

The First National Disease Control Strategy

Approximately one billion people contract malaria each year, and the incidence is increasing. International travel exposes millions of U.S. residents to the disease each year. The spread of parasites that are resistant to malaria drugs, specifically chloroquine, complicates prevention of malaria.

CDC's malaria program includes research to achieve a better understanding of the malaria parasite and the human immune response to it and efforts to apply this understanding to treat and prevent cases. In Africa and other malarial areas, CDC is working to define the impact of maternal malaria infection among pregnant women, to assess the ability of different drugs to treat malaria, and to determine the relationship between malaria and anemia, blood transfusion, and HIV infection.

Spraying insecticides is still an effective control strategy in some areas, but this method is limited by high costs and mosquito resistance to insecticides. Recent research indicates that insecticide-impregnated mosquito nets may offer communities protection against malaria infection. Great strides have been made, particularly in Africa, in developing community-based primary health care programs to ensure prompt and effective therapy for malaria among children.

CDC evolved from the Malaria Control in War Areas (MCWA) agency of World War II. Dr. Joseph Mountin of the U.S. Public Health Service proposed a national effort to conduct research into the control and prevention of malaria and other tropical diseases that might be imported into the nation. Dr. Mountin encouraged the federal government to establish MCWA in 1942 and, eventually, to convert it to the Communicable Disease Center in 1946. He believed the country could benefit from the expertise of MCWA's physicians, entomologists, and engineers in the battle against many threats to health.

By 1952, the country had experienced a rapid decline in malaria incidence. The agency terminated field operations that sprayed for mosquitoes and turned its emphasis to surveillance for the disease—a shared responsibility with the states.



The Anopheles mosquito, transmitter of malaria. The Greek translation of anopheles is harmful. Malaria kills about two million people worldwide each year.



Spraying Paris green dust was part of CDC's post-WWII malaria-control efforts. Circa late 1940s.

The Epidemiologic Basis for Disease Control

A new illness, later to become known as acquired immunodeficiency syndrome (AIDS), appeared in a technician's memorandum to her supervisor at CDC in 1981. The technician was receiving an unusually high number of requests for a drug available in this country only through CDC, pentamidine, which was used to treat an opportunistic disease called *Pneumocystis carinii* pneumonia (PCP). Opportunistic infections result when organisms that do not harm healthy people cause serious illness in people whose immune systems are suppressed.

During 1981, CDC began receiving reports of cases of PCP and Kaposi's sarcoma, a form of cancer that acts as an opportunistic disease, among homosexual men in California and New York. CDC established surveillance and published reports of these cases in the *MMWR*. Within a year, the surveillance system had identified New York, California, and Florida as the states most affected and had identified male-to-male sexual contact and drug use by injection as significant risk factors for the illness. The illness became known as AIDS in 1982.

Epidemiologic investigations led to the conclusion that an infectious agent was responsible for the immunosuppression. AIDS surveillance helped describe the magnitude of the epidemic, which was sufficient to convince public health officials to commit resources for its control. In 1983, the infectious agent was first isolated. It was named the human immunodeficiency virus (HIV). The rate of infection among populations is shifting in recent years, as evidenced by the epidemiologic patterns of AIDS cases reported to CDC.

In particular, although men who have sex with men continue to account for the largest proportion of all cases reported (51%), the AIDS epidemic is increasing more rapidly among injecting drug users (25%) and people infected through heterosexual contact with a partner at risk for or known to have HIV infection or AIDS (8%). The increase in AIDS cases resulting from heterosexual transmission also is reflected in the increase in cases reported among women. Regardless of transmission mode or region, blacks and Hispanics continue to be disproportionately affected by the epidemic and represented nearly 60% of the more than 74,000 cases reported in 1995 alone. Because race and ethnicity themselves are not risk factors for HIV transmission, programs to prevent HIV transmission among racial or ethnic minorities should be based on underlying social, economic, and cultural factors that influence risk behaviors.

Community-Based Prevention Strategies

Once a test had become available to detect HIV infection and was licensed in 1985, blood banks began screening all blood donations. So that persons would not need to donate blood as a means of learning their HIV status, CDC provided funds for alternate test sites where people could be tested anonymously or confidentially for HIV infection and could receive counseling and partner notification services. These services are now offered at confidential test sites in sexually transmitted disease (STD), family planning, drug treatment, and other clinics where at-risk people receive health care.

Since 1985, CDC has helped community-based organizations to develop risk-reduction programs through cooperative agreements with state and local health departments. However, because of an increasing need to provide culturally specific and scientifically sound HIV prevention services to address unique community needs, the manner in which prevention programs are planned has undergone significant change in recent years through the initiation of the HIV Prevention Community Planning process.

Participatory community planning is an essential component of effective HIV prevention programs. Although different approaches to community planning may be taken in various communities, HIV Prevention Community Planning refers to an ongoing process in which grantees share responsibilities for developing a comprehensive HIV prevention plan with other state or local agencies, nongovernmental organizations, and representatives of communities and groups at risk for or infected with HIV. These programs are providing a broad range of interventions for populations at increased risk for HIV infection, including gay and bisexual men, injecting drug users, heterosexuals with multiple sex partners, women at risk, homeless people, and youth in high-risk situations (for example, runaways and youth in shelters or detention centers).

The goal of HIV prevention community planning is to improve the effectiveness of HIV prevention programs by strengthening the scientific basis and targeting of prevention interventions. Together, representatives of affected populations, epidemiologists, behavioral scientists, HIV/AIDS prevention service providers, health department staff, and others analyze the course of the epidemic in their jurisdiction and develop plans that are directly responsive to the needs of their community.

The Indiana State Department of Health is interpreting data collected from an HIV prevention/intervention project entitled *Woman to Woman*. The project focuses on women, with a special emphasis on women of color. Data on approximately 2,100 women at risk for HIV infection have been collected. The information includes demographics, statistics on risk behaviors, knowledge about STDs (including HIV/AIDS), and survey information that measures intent to change risky behaviors. Follow-up surveys are planned for three-, six-, and twelve-month intervals.

Hawaii uses 'talk stories' with Native Hawaiian populations to increase audience comfort about HIV prevention messages. A Hawaiian service provider, Ke Ola Mamo, provides culturally specific HIV prevention messages, working with community elders to ensure that each intervention is appropriate and credible.



Thousands of names are remembered in panels of the AIDS quilt.

Talk About AIDS

AIDS Is Scary, But A Zit Is Real. Right?



Mike: I know that AIDS is important. It just doesn't have to do with me.

Why not?

Mike: Because I don't know anyone with it.

So, it's going to take a friend of yours dying of AIDS before it seems real?

Mike: You're making me sound like a jerk. But, yeah, that's about it.

Then how will you feel?

Mike: Bad.

1-800-342-AIDS

This is a message from the U.S. Centers for Disease Control.

Community prevention and public information strategies are two major CDC initiatives for stopping the spread of HIV infection.



This is the way many people deal with HIV.

A lot of people figure HIV isn't something they have to worry about. It's something other people get, not them. But serious — we get HIV infection if they are sharing drug needles and syringes or having sex with an infected person.

HIV infection can happen to you if you take chances or pretend it doesn't exist.

There are some general rules. Never share drug needles and syringes. And unless you're sure your partner isn't infected, don't take a chance. Or at least use a latex condom, correctly, every time you have sex.

Understand HIV and AIDS. Call your state or local AIDS hotline or the National AIDS Hotline at 1-800-342-AIDS. Call 1-800-243-7869 (TTY) for deaf access.

HIV is the virus that causes AIDS.



Public Information Strategies

Shortly after AIDS was defined and named, the government moved to ensure the public was informed about it through the formation of a National AIDS Hotline. The AIDS Hotline was set up in the public affairs office of the U.S. Public Health Service in Washington, DC, in 1983. The burgeoning operation was transferred to CDC in 1985. A year later, call volume so far exceeded staff capacity that the service was transferred to a private contractor, under CDC's quality control. At the same time, CDC created the National AIDS Clearinghouse, the country's primary resource for reference materials on HIV/AIDS prevention, treatment and care.

In a decade of firsts, one public communication stands out—in 1988, the federal government sent a health message directly to every household in America. In a little over a month, CDC mailed 107 million copies of *Understanding AIDS*, an eight-page brochure covering basic and vital facts about HIV and AIDS. In simple and direct language, the brochure explained how HIV is and is not transmitted and how people could protect themselves from infection.

Since then, CDC has continued its ground-breaking public communication efforts. In 1994, America's television networks carried the first-ever public service campaign about condoms. The campaign encourages sexual abstinence, but also promotes condom use among those who are sexually active. In late 1995, CDC launched its newest campaign, "Respect Yourself, Protect Yourself," continuing the government's innovative communication by using the simple, direct language of young adults to encourage abstinence and safer sex among their peers.

Strategy for Prevention of HIV Transmission to Infants

Because it is now possible to reduce the risk of HIV transmission from mother to infant, specific AIDS prevention activities have been targeted toward pregnant women and their health care providers. CDC has developed broad guidelines that recommend the following major strategies for helping to prevent perinatal (mother-to-infant) HIV transmission and for identifying women and infants in need of care and services:



We now know that it is possible to reduce the risk of transmitting HIV from an infected mother to her infant.

- Health care providers should ensure that all pregnant women are routinely counseled and encouraged to be tested for HIV infection.
- Health care providers should counsel and offer HIV testing to women as early in pregnancy as possible so that informed and timely therapeutic and reproductive decisions can be made. Ideally, women should know their HIV status before becoming pregnant.
- If for any reason the mother's HIV infection status is not known at the time of delivery, she should be encouraged to allow her child to be tested.

The document also includes guidelines on interpretation of test results, specific recommendations for HIV-infected pregnant women, and recommendations for follow-up of HIV-infected women and prenatally exposed children. As these guidelines are becoming established as standard medical procedure in communities across the nation, we are beginning to see declines in perinatal HIV infections.

CDC works with international agencies and developing countries around the world to stem this epidemic. In 1995, CDC collaborated with and provided technical assistance to more than 15 countries. The WHO estimates that approximately 4.5 million persons had been stricken with AIDS as of December 31, 1994, and more than 18 million adults and 1.5 million children were infected with HIV. WHO also predicts that 30 to 40 million persons worldwide will have been infected with HIV by the year 2000.

AN EMERGING STRATEGY FOR EMERGING DISEASES

The Problem

Infectious diseases remain the leading cause of death worldwide. In the United States and elsewhere, infectious diseases increasingly threaten public health and contribute significantly to the escalating costs of health care. As society, technology, and the environment change, pathogens evolve or spread and the spectrum of infectious diseases expands.

Since the early 1970s, the U.S. public health system has been challenged by many newly identified pathogens and syndromes, such as Lyme disease, Legionnaires' disease, toxic shock syndrome, HIV/AIDS, hepatitis C and D virus, *Cryptosporidium*, and, most recently, hantavirus. Globally, cholera has continued to spread; yellow fever has reemerged; new strains of *E. coli* have appeared in Africa; *Shigella dysenteriae* has become increasingly resistant to antibiotics; dengue fever has spread to the Western Hemisphere; an old disease, diphtheria, has caused a major epidemic in Russia; and Ebola virus has reappeared.

ERADICATION OF DISEASE: THE ULTIMATE PREVENTION

Eradication of a disease is the ultimate prevention against any resultant future illnesses and deaths. CDC's earliest history is rooted in efforts to eliminate diseases that bring misery and death to humankind. During its 50 years, the agency has contributed vitally to the elimination or eradication of smallpox, Guinea worm disease, and polio.



Of the smallpox god, Sopona, worshipped by the Yorubas of Nigeria, it was said that, "...being a stubborn deity, he would not heed any appeasement."

Smallpox

A severe viral disease, smallpox haunted humankind for several thousand years. Its impact on

continued on next page

the history of the world was great. In the mid-1960s, an estimated 10 million cases of smallpox and one million deaths from the disease occurred each year.

In 1966, in collaboration with WHO and with funding from USAID, CDC initiated a regional program of smallpox eradication and measles control in 20 West and Central African countries. CDC's smallpox laboratory developed a method for rapid diagnosis of smallpox and conducted smallpox virus research.

In 1970, as smallpox transmission was interrupted in the last of 20 West African countries, CDC turned its attention to the global eradication of smallpox, a multicountry effort supported by WHO. The last endemic case of smallpox in the world occurred in Somalia in October 1977.

On October 26, 1979, a WHO global commission certified that the world was free of smallpox. Remaining stocks of smallpox virus have been retained for research purposes at laboratories in Russia and at CDC. In 1990, CDC joined an international effort to sequence the smallpox genome. Upon completion of this project, plans call for the destruction of remaining stocks of smallpox virus.

The eradication of smallpox and elimination of the routine use of smallpox vaccine has saved the United States more than \$3 billion between 1979 and 1995. In addition, since 1983, the elimination of the routine use of smallpox vaccine has

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The Strategy

Surveillance is being improved by:

- CDC's close work with state and local health departments,
- New physician-based sentinel surveillance networks to detect and monitor emerging diseases, such as unexplained adult respiratory distress syndrome and childhood rash and fevers,
- New population-based Emerging Infections Epidemiology and Prevention Centers to focus on foodborne and waterborne infections and potentially vaccine-preventable diseases,
- Links for existing sites for a global consortium to promote the detection, monitoring, and investigation of infections emerging internationally that could affect the health of Americans.

Applied research is being conducted by an extramural program to support emerging infectious disease prevention and control activities:

- Evaluating the role of prescribing practices in the development of antimicrobial drug-resistant pathogens,
- Prevention effectiveness studies to assess the impact of food preparation guidelines on the incidence of foodborne infections, such as *E. coli* O157:H7 and *Salmonella enteritidis*.

Prevention and control activities include:

- Developing additional means to deliver laboratory and health information to health professionals,
- Guidelines for the prevention of opportunistic infections among immunosuppressed persons are being developed and implemented.

The infrastructure is strengthened through:

- State-of-the-art training in diagnostic evaluation and testing for medical laboratory personnel,
- Public health laboratory fellowship in infectious diseases that will train medical microbiologists in public health approaches to diagnosis and molecular epidemiology.

Healthy People 2000— Development of National Plans

Healthy People 2000: National Health Promotion and Disease Prevention Objectives, which was published in 1990, sets forth a compelling agenda for improving the health of the nation as it approaches the next century. This document, the product of a national effort involving thousands of professionals and citizens, private organizations, and public agencies from every part of the country, reflects their bold and ambitious vision for improving the health of all Americans. That vision stems from the development in this century of a solid scientific base, a keen sense of the health-related challenges and opportunities facing our communities, and an understanding of the national political will and shared responsibility necessary to affect positively the health and quality of our lives.



Healthy lifestyles are an objective for a healthy nation.

Continuing Commitment

Mid-course assessments also point CDC to public health challenges of the future, such as poverty, insufficient education, single parenthood, and violence experienced by families and entire communities. CDC will address these challenges at the family and community levels. These are the priorities that give CDC a chance to serve an older, more culturally and ethnically diverse, and less affluent population.

FINDING NEW RESOURCES

Managed Care

The extensive changes in the health care system in the United States provide public health agencies with new opportunities for prevention-oriented relationships with private health care. Managed care organizations (MCOs) are rapidly becoming a major source of health care for the beneficiaries of both employer funded care and publicly funded programs, Medicaid and Medicare. In recognition of the potential role of MCOs in prevention, CDC is undertaking a series of activities to ensure that prevention is a key component of health care delivery systems through MCOs.

High-priority activities include developing guidelines for effective prevention programs based on input from MCOs and others. CDC is also helping to design and implement managed care arrangements of Medicaid that specify cost-effective preventive services and to hold all such plans accountable for the delivery of these services.

prevented an estimated 4,529 complications of smallpox vaccination and a possible 76 vaccine-related deaths.



Worldwide eradication of the painful Guinea worm.

Guinea Worm Disease (Dracunculiasis)

For more than a decade, CDC has participated in the global initiative to eradicate Guinea worm disease, a disabling parasitic disease that affects approximately three million people each year. The eradication effort is spearheaded by the Global 2000 Program of The Carter Presidential Center. CDC assists by providing technical assistance to national eradication programs in Africa and Asia, conducts training for national workers, and conducts research as a WHO Collaborating Center for Research, Training, and Eradication of Dracunculosis.

The goal of eradication should be reached by the late 1990s.

Poliomyelitis

The last cases of endemic polio in the United States occurred in an outbreak in Pennsylvania in 1979, and the last imported case was reported in 1986. However, more than 150,000 paralytic cases occur each year

continued on next page



Polio vaccine administered in sugar cube. Circa 1950s.

throughout the world.

In 1985, PAHO launched an initiative to eradicate transmission of indigenous wild polioviruses in the Western Hemisphere. In September 1994, PAHO certified that polio was eradicated from the Americas. CDC was substantially involved in the PAHO eradication program and continues in a similar effort by WHO to eradicate polio from the world by the year 2000. Almost a quarter of a billion dollars spent annually to vaccinate children in the United States can be saved with the worldwide eradication of polio.

The goal can be accomplished by a strategy that includes achievement and maintenance of high immunization levels, effective surveillance to detect all new cases, and a rapid and vigorous response to new cases.

CDC joins many other partners in the polio eradication effort. Rotary International alone has raised more than \$240 million to support the effort. Other partners are UNICEF and The Task Force for Child Survival and Development.

National Foundation for the Centers for Disease Control and Prevention

In 1992 Congress passed legislation authorizing the creation of a not-for-profit foundation at CDC that would support activities complementing CDC programs. The Foundation, which became active in 1995, has an executive director and board of directors.

The Foundation's role is to seek support for three general purposes:

- Enhancing CDC's ability to attract talented scientists and health leaders for short-term assignments.
- Providing philanthropic investments for innovative research and replicable community-based programs.
- Encouraging sound public health policies.

The Foundation has established funding priorities for programs to support. The priority programs are:

- Youth Violence Prevention.
- Development of Information Technology and Networks.
- A Physical Activity and Nutrition Project for Youth.
- Antimicrobial Drug Resistance.

PRIORITY 4 — PROMOTE WOMEN'S HEALTH

Office of Women's Health

Launched in 1994, CDC's Office of Women's Health is a major statement of the agency's commitment to preventing unnecessary disease and death among women in the United States and abroad.

The Office provides leadership and coordination throughout CDC for efforts that affect the lives of women. Through CDC organizational components, the Office funds projects by CDC researchers and collaborators in universities, medical centers, and other institutions. Projects include research into osteoporosis, HIV infection and STDs, violence against women, and injuries from other causes.

Priority activities related to women's health, as identified by the Office, take place in many areas of CDC. Among the priorities are preventing breast and cervical cancer, HIV/AIDS, STDs, tobacco use, injury, and violence and promoting reproductive health and health in later years.

Two additional urgent issues are promoting occupational and environmental health and knowledge about women's health.



The Office of Women's Health was established in 1994 to help improve the lives of women both here and abroad.

Family Planning Evaluation

CDC first became involved in family planning in 1964, when an Epidemic Intelligence Service Officer was transferred from a state assignment to Grady Memorial Hospital, Atlanta, to study the epidemiologic relationship between the use of the intrauterine-device (IUD) and pelvic inflammatory disease.

In 1967, an EIS statistician experienced in data management, quality control, and field surveys; three physicians; and a support staff formed the Family Planning Evaluation Activity at CDC. Contraceptive safety, still a global health issue, was an early theme of investigations in family planning. CDC surveys on pelvic inflammatory disease, IUDs, oral contraceptives, and surgical sterilization influenced the clinical practice and use of contraception.

CDC issued the first abortion surveillance report in 1969. The report contained tabulated data from selected hospitals and state health departments. By 1972, CDC was receiving from every state the most accurate reports available on legal abortions and abortion-related deaths.

Although services to teenage women were known to be deficient as early as 1967, public programs did not target reproductive health services for teens until national surveys showed the seriousness of the problem. CDC played an important role by documenting the number of abortions among teenage and unmarried women.

As early as 1967, CDC forged links with academic population centers of those schools of public health with international programs. Later it went on to build strong ties to the U.S. Agency for International Development (USAID) and other international agencies to help promote family planning worldwide.



Reproductive health for teens gained public notice once national surveys revealed the seriousness of the problem.

CDC has taken on broader efforts in prevention of maternal mortality, infant mortality, infertility, and the health effects of smoking on pregnancy. Most of the physicians and statisticians who served with CDC's Family Planning Evaluation program are still active in public health; many in the field of reproductive health; others are in public health at academic institutions.

Maternal and Infant Health

Although vital progress has been made in this country in promoting the health of mothers and babies, each year about 40,000 infants born in the United States die before their first birthday.

In 1987, when U.S. infant death rates stopped declining as rapidly as they had in previous years, CDC launched the Pregnancy Risk Assessment Monitoring System (PRAMS). This state-based mail/telephone surveillance system monitors maternal behaviors that occur during pregnancy or during the child's early infancy, such as smoking, alcohol and drug use, and failure to seek prenatal care. By 1991, 13 states and the District of Columbia were participating in PRAMS.

Other maternal and infant health surveillance activities are 1) the Maternal and Child Health Epidemiology Program conducted in collaboration with the Health Resources and Services Administration (HRSA), which assists states with data analysis and long-range planning, 2) the Center for Healthy Infants and Pregnancies Surveillance, which provides surveillance, research, and expertise to help states to determine the causes of adverse pregnancy outcomes and to devise research-based interventions. Research activities focus on such critical issues as the high incidence of preterm delivery and low birth weight among black Americans, as well as on HIV, reproductive decision-making, and family planning needs in the United States and developing countries.

Birth Defects and Developmental Disabilities



In 1992, CDC published recommendations that all women capable of becoming pregnant consume 0.4 mg of folic acid daily to reduce their risk of giving birth to an infant with birth defects affecting the brain and spinal cord. In this picture, a new bride receives folic acid as a wedding present from Dr. Godfrey P. Oakley (not pictured) of the CDC's National Center for Environmental Health.

Birth defects are the leading cause of infant deaths and a major cause of developmental disabilities. CDC's first population-based surveillance of birth defects—the Metropolitan Atlanta Congenital Defects Program—started in 1967. Now the model system for birth defects surveillance in the United States, it is also used abroad. The Metropolitan Atlanta Developmental Disabilities Surveillance Program's new population-based surveillance system, which CDC began in 1991, is expected to become a model system for the surveillance of developmental disabilities.

CDC is also focusing on efforts to prevent spina bifida, fetal alcohol syndrome, and poverty-associated mental retardation. The finding of an association between folic acid deficiency and spina bifida provides one of the few methods of preventing such crippling disabilities. In September 1992, the Public Health Service recommended that all women in the United States who are capable of becoming pregnant should consume 0.4 mg of folic acid daily to reduce the risk of having a baby with spina bifida or other neural tube defects. CDC information indicates that following this recommendation could reduce the number of neural defects that now occur in the United States by 50%. In 1996, the FDA required addition of folic acid to fortified foods by 1998. In 1998, folic acid must also be included in cereal-grain products such as flours, cornmeals, pasta, and rice.

Poverty is the cause of many illnesses, but perhaps one of the most disturbing findings is that children who live in poverty are two to three times more likely than others to have mild mental retardation. The good news is that recently completed clinical trials have shown that specially designed early intervention programs that begin at birth and continue through preschool age can prevent mild mental retardation and can help children of all intelligence levels. CDC is exploring ways to translate this landmark study into community-based prevention of mild mental retardation.

Prevention of Domestic Violence and Abuse

CDC began a program in 1994 to prevent domestic violence and abuse of women. That program followed the traditional public health model for solving a health problem—surveillance, identification of risk factors, development of interventions to prevent a problem, evaluation of those interventions, and implementation of interventions in the community.

These specific activities are included in the program:

- Work with the Department of Justice to obtain better estimates of violence among intimate partners and/or the injuries or other health effects resulting from such violence.
- Agreements with communities and state health departments to evaluate various interventions to prevent violence against women.
- Evaluation projects to determine effectiveness of training medical and health personnel to identify and refer women who have been abused to sources of help.
- Development of an electronic network to link those who work with battered women at the state and local levels for fast, accurate information exchange.

STDs—A Changed Paradigm

Historically, sexually transmitted diseases (STDs) were thought to be men's diseases. Signs and symptoms were more evident among men, but in the past decade public health workers have come to realize that consequences of the STDs are a major burden to women. The problems of infertility due to chlamydia infection, pelvic inflammatory disease due to gonorrhea, and congenital syphilis required a refocusing of the strategy for disease control. The growing number of women affected by the HIV epidemic has also highlighted this need.

For some time, scientists have known that a person with one STD is at risk for contracting another. Studies from Africa and the United States have linked genital ulcer diseases, including syphilis, with increased risk for the transmission of HIV/AIDS. Recent studies have associated other STDs, such as gonorrhea, chlamydia infection, and trichomoniasis with increased risk for HIV infection.

Syphilis serves as an example of an STD that has a particularly heavy impact on racial and ethnic minorities. Overall rates for primary and secondary syphilis increased 82% between 1986 and 1990 before they declined by 16% in 1991. However, this decline was not experienced among racial and ethnic minorities; the rate of primary and secondary syphilis among blacks remained more than 50

higher than among whites; the rate among Hispanics was seven times higher than among whites.

CDC is currently focusing syphilis prevention efforts on the 35 counties with the highest syphilis incidence in the nation. CDC is also using its revised congenital syphilis case reporting system, implemented fully in 1990, to track the course of syphilis in reproductive-age women and to target interventions. Screening of pregnant women is being increased to ensure that those with reactive serologic tests for syphilis are evaluated and treated and, when necessary, to ensure that their infants receive appropriate therapy.

Breast and Cervical Cancer



CDC's National Breast and Cervical Cancer Early Detection Program places a high priority on reaching women aged 50 and older and racial and ethnic minorities. (Photo courtesy of the American Cancer Society.)

Breast and cervical cancers exact a high toll on the health of women across the United States. Breast cancer is the most common cancer among American women and the second cause of cancer deaths. More than 180,000 new cases of breast cancer occurred in 1995 and some 46,000 women were expected to die of the disease that year.

Mammography is the most effective method for the early detection of breast cancer. Making the diagnostic technique more available to women at risk for cancer is a major step toward preventing early death and continued illness from the disease.

Although deaths from cervical cancer have decreased approximately 70% in the past 40 years, nearly 16,000 new cases were expected in 1995. Nearly 5,000 women die of cervical cancer each year, although virtually all cervical cancer deaths can be prevented by early detection and appropriate follow-up.

CDC works to prevent early death and unnecessary illness by reaching women through its National Breast and Cervical Cancer Early Detection Program.

Through September 1995, the early detection program provided close to 800,000 screening tests to medically underserved women in 23 states and five tribes and tribal organizations. The program has provided more than 327,000 mammograms. From these, breast cancer was diagnosed in 1,647 women. From more than 472,000 Pap tests (to detect cervical cancer), 15,119 women received a diagnosis of a precursor of cancer that can be successfully treated and cured. Invasive cervical cancer was diagnosed in 184 women.

The program's screening guidelines place high priority on reaching women aged 50 and older and on reaching racial and ethnic minorities.

Toxic Shock Syndrome

In 1978, researchers at the University of Colorado described toxic shock syndrome (TSS), a previously unrecognized illness characterized by high fever, shock, and rash. In 1980, CDC reported an unusually high occurrence of TSS among menstruating women. An epidemiologic study identified the use of tampons during menstruation as a risk factor associated with the disease. CDC studies also documented that *Staphylococcus aureus* was the probable organism causing TSS.

Over the last five years, 50 to 100 cases have been reported. TSS, which has a fatality ratio of 2% to 4%, continues to occur in young, healthy women.

PRIORITY 5 — INVEST IN THE HEALTH OF OUR YOUTH

PRESCHOOL CHILDREN

National Initiatives To Immunize the Nation's Children

Immunization levels reached 91% in October 1979 for more than 28 million of the nation's children in kindergarten through 12th grade. This level surpassed the goal of 90% set in the 1977 National Childhood Immunization Initiative to vaccinate children against measles, rubella, mumps, polio, diphtheria, tetanus, and pertussis. Reported cases of many of these childhood diseases were at record low levels in 1979 as a result of the immunization program.

On the crest of this success, CDC spearheaded a special nationwide program in 1978 to eliminate indigenous measles by October 1982. By 1981, this goal seemed attainable: an all-time low of 3,124 measles cases was reached—more than a 99% reduction from the annual average of more than 500,000 cases in the prevaccine era.

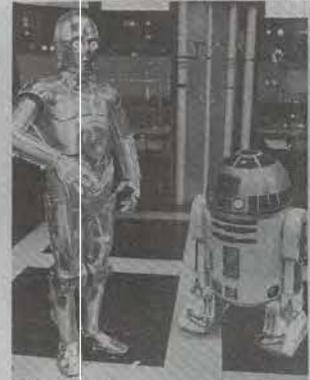
However, during the early 1980s, measles transmission persisted as a result of 1) transmission among unvaccinated preschoolers, college students, and other young adults and 2) continuing measles outbreaks among the 2%-5% of vaccinated people not protected in junior high schools and high schools. A six- to nine-fold increase in reported measles cases, to epidemic levels, began in 1989. Preschool-aged children, who were not subject to the legal immunization requirements for entering school—that are now in effect in all 50 states—were at highest risk.

By 1995, vaccine-preventable diseases had dropped to an all-time low. Measles cases in the United States numbered 285, compared with 885 cases in 1994. Vaccination coverage levels of children ages 19 to 35 months are close to the 90% level for most vaccines.



CDC's goal is to have, by the year 2000, at least 90% of children immunized before their second birthday.

**PARENTS OF EARTH,
ARE YOUR CHILDREN
FULLY IMMUNIZED?**



**MAKE SURE—
CALL YOUR DOCTOR OR
HEALTH DEPARTMENT TODAY.
AND MAY THE FORCE BE WITH YOU.**

*1980s efforts to get the
immunization message out to
the public.*

Hepatitis B

Hepatitis B virus (HBV) infection remains one of the major public health problems in the United States, not only affecting adults at high risk because of certain sexual practices, but also endangering health care workers exposed to the disease in the workplace, refugees from disease-endemic areas, intravenous drug users, and infants born to HBV-carrier mothers. Approximately 300,000 HBV infections occur every year in this country, often leading to chronic hepatitis, cirrhosis, and liver cancer.

CDC conducted a vaccine trial in 1979 that demonstrated the efficacy of a newly developed hepatitis B vaccine and supported the licensure of this vaccine in 1981. Over the next decade, CDC developed a series of recommendations aimed at eliminating the transmission of HBV in the United States.

Despite immunization of about 1.5 million people in the United States, by 1985 hepatitis B had increased by 50% because of the difficulties in delivering vaccine to adults at high risk and the high cost of the vaccine. In 1991, CDC and the American Academy of Pediatrics announced a new strategy to eliminate the transmission of HBV in the United States. The strategy includes preventing perinatal transmission through routine screening of pregnant women and immunoprophylaxis of infants born to HBV-carrier mothers and preventing HBV infections among children through routine infant hepatitis B vaccination. Continued vaccination of adults and adolescents who are at high risk is also recommended.

Immunization Initiative Targets Children Younger Than Age 2

A major national health initiative launched in June 1991 called for immunizing (by the year 2000) at least 90% of children before their second birthday. Toward that end, public health officials visited six areas of the country from September 1991 through February 1992 to review plans from model immunization programs developed at the local level. These six model programs are distributing vaccine in conjunction with other services to mothers and children. All states are developing similar plans.

In support of the initiative, the federal government committed \$46 million in new funds for 1992. CDC provided technical assistance in the local planning process. Among the efforts planned to increase the number of very young children vaccinated are 1) expanding immunization service delivery through additional clinics, hospitals, and clinic locations, 2) coordinating immunization service delivery with all government programs and agencies that serve preschool-age children, and 3) making clinics more accessible and user-friendly, often with walk-in express lane service.

The Health of Children in Child Day Care

The number of children attending day care facilities has increased dramatically in the past decade as mothers of young children have increasingly entered the work force. These children, now numbering more than 11 million, are at markedly increased risk for enteric infections, such as hepatitis A, giardiasis, and cryptosporidiosis; respiratory illnesses; and middle-ear infections. Additionally, many of these illnesses are carried home and transmitted to other members of a household.

A CDC task force on infectious diseases and child day care health published infection control guidelines in 1984 that were widely disseminated to state and local health authorities, day care providers, and parents. The agency has a Child Day Care Health Program, which coordinates day care health activities within CDC and gathers epidemiologic and laboratory information to refine infection control guidelines and help health authorities implement them.

Childhood Lead Poisoning Prevention

In 1978, CDC researchers developed the hematofluorometer, a device that measures the fluorescence of erythrocyte protoporphyrin (EP), a naturally occurring substance produced in response to the presence of lead in the blood. This protoporphyrin test, which can also measure iron deficiency anemia, is still used in many places as a primary screening tool for childhood lead poisoning.

CDC also helped to initiate federal activities to reduce lead in gasoline, which brought about declines in average blood lead levels in the U.S. population. According to data from the Third National Health and Nutrition Examination Survey (NHANES III), the percentage of children with blood lead levels at or above 10 $\mu\text{g}/\text{dL}$ fell sharply, from 89% in NHANES II (1976-1980) to 8.9% in NHANES III (1988-1991). All population groups benefited from this decline.

Childhood lead poisoning, which is entirely preventable, remains one of the most common pediatric health problems in the United States today. In 1984, an estimated 17% of all American preschool children had blood lead levels higher than 15 $\mu\text{g}/\text{dL}$. Now it is known that blood lead levels in children at least as low as 10 $\mu\text{g}/\text{dL}$ are associated with adverse health effects, such as lowered intelligence, impaired neurobehavioral development, and decreased physical stature or growth.

CDC issued a revised statement in 1991, *Preventing Lead Poisoning in Young Children*, that lowers the 1985 intervention level of 25 $\mu\text{g}/\text{dL}$ to a level of concern of 10 $\mu\text{g}/\text{dL}$ and adopts a multitier approach to follow-up of children with elevated blood lead levels, with more intensive medical and environmental interventions at higher blood lead levels. It also promotes increased primary prevention efforts. The statement and the *Strategic Plan for the Elimination of Childhood Lead Poisoning* (HHS, 1991) are part of a broad-based federal effort to reduce childhood lead poisoning in the United States. The Strategic Plan describes the first 5 years of a 20-year society-wide effort to eliminate this disease. The four essential elements of this effort are 1) increased childhood lead poisoning prevention programs and activities, 2) effective abatement of lead-based paint and lead paint-contaminated dust in high-risk housing, 3) continued reduction of children's exposure to lead in the environment, and 4) establishment of national surveillance for children with elevated blood lead levels.



Playing in the dirt around homes where lead paint has been used is one of the risk factors for lead poisoning among children.

ADOLESCENTS

CDC Teen Pregnancy Prevention Program

CDC is providing financial and technical assistance to 13 community-wide coalition programs in support of their work with youth to delay pregnancy and childbearing and to prevent related problems. The purpose of these programs is to demonstrate that communities can mobilize their resources to support and sustain programs that prevent initial and repeat teen pregnancies. CDC's community partners work with businesses, entrepreneurial development groups, media and entertainment, religious and civic organizations, youth councils and organizations, and other groups that promote the well-being of youth. Local programs will involve youth in intensive school health education programs, community service, job skills development, and other performance opportunities that build their self-esteem and their belief in themselves and their futures. Young people will have significantly stronger incentives to remain abstinent, to delay pregnancy and childbearing until they are ready and able to assume the role of parents, and to prevent related problems. For young people who are sexually active, these programs will promote the consistent and effective use of contraceptives and will ensure access to family planning counseling and services.

CDC and its partners will also provide program evaluation assistance to community demonstration programs to conduct needs assessments, establish data about current situations, and monitor and document changes in teen knowledge, attitudes, skills, behaviors, and pregnancies. CDC will also establish national surveillance of teen births, abortions, and pregnancies so that trends can be measured by states and for the nation as a whole. Program evaluation and surveillance information will be used to inform public policy decision making, to influence the direction of limited resources to communities with the greatest teen pregnancy problems, and to strengthen community prevention efforts.

As community prevention models are tested and found to be effective, CDC will use technical assistance workshops, electronic bulletin boards, and other dissemination strategies to accelerate the incorporation of effective interventions into teen pregnancy prevention programs throughout the country.

Preventing HIV/AIDS Among School-Aged Youth



HIV/AIDS prevention education has become a part of comprehensive school health programs.

CDC began working directly with state departments of education in 1987 to increase efforts to prevent HIV/AIDS among school-aged youth. It provided financial and technical assistance to education departments in 15 states and 12 cities and to 15 national organizations. One objective was to have schools incorporate HIV/AIDS prevention education as part of their comprehensive school health programs by 1989. The agency collaborated with a consortium of 19 national voluntary and professional organizations that interacted with school-aged people. These organizations represented the interests of education administrators, teachers, parents, health professionals, and minority and out-of-school youth.

In 1988, CDC extended its funding to state education departments to include all states, the District of Columbia, four territories, and 16 cities where the rates of HIV seroprevalence were high.

Preventing Tobacco Use

Preventing tobacco use is a critical health issue for CDC. Cigarette smoking is the leading preventable cause of death in our society, claiming at least 400,000 lives each year in the United States. Debilitating chronic diseases caused by smoking include cancer, heart disease, and chronic obstructive lung disease. In 1993, the direct medical costs associated with smoking were estimated to be \$50 billion, 7% of the total U.S. health care costs. Smoking during pregnancy is a cause of low birth weight, a major contributor to infant death.

The Office on Smoking and Health (OSH), formerly in the Office of the Assistant Secretary for Health, DHHS, was transferred organizationally to CDC in 1986. This move enabled OSH's public information activities to draw more easily on CDC's scientific and epidemiologic expertise. It also strengthened OSH's linkage with state and local health departments.

Among OSH's accomplishments are the Surgeon General's reports on the health consequences of smoking. Through these reports, CDC has advanced scientific consensus on a number of important health and policy issues related to smoking.

For example, the 1986 report on involuntary smoking was the first government report to conclude that environmental tobacco smoke (ETS) causes lung cancer in healthy nonsmokers and that the simple separation of smokers and nonsmokers in the same air space does not eliminate nonsmokers' exposure to ETS.

MOST TEEN SMOKERS
BELIEVE THEY CAN QUIT BUT AFTER
SIX YEARS
75% STILL SMOKE*

*it's not like they're addicted or anything.

CDC

CDC's humorous print ad series for high school newspapers deglamorizes tobacco use among teenagers.

98% OF GUYS WHO USE
CHEWING
TOBACCO SAY THEIR
MALE
FRIENDS DON'T MIND AT ALL*

*oddly, there are no figures for how their girlfriends feel about it.

CDC

Preventing tobacco use among young people is a key goal of CDC's Office on Smoking and Health.

The 1992 Surgeon General's report examined the broader problems posed by tobacco consumption. *Smoking and Health in the Americas*, prepared in collaboration with the Pan American Health Organization (PAHO), presents evidence of a rising prevalence of smoking in Latin America and the Caribbean, particularly among young people. The report stresses the need for regional coordination to avoid the same epidemic of smoking-related illnesses and deaths that the United States is experiencing.

In 1994, CDC released the Surgeon General's *Report on Preventing Tobacco Use Among Young People*, the first report to focus exclusively on tobacco use by adolescents and young adults. The report documents a large body of information about the health effects of tobacco use, trends in use, factors that influence use, and potential interventions to prevent young people from beginning to use tobacco. Also published in 1994 was an analysis of the brand preferences of adolescent smokers, the reasons for adolescent tobacco use, and symptoms of nicotine withdrawal among adolescent and young people using tobacco.

Partners Against Illness and Death From Tobacco Use

CDC worked with many public and private institutional partners to make 1995 a year of great gain in the battle against tobacco use, the nation's leading cause of death. Among the successful efforts were the following:

- Documentation of the need to limit access of young people to tobacco and to restrict labeling and advertising of tobacco products.
- Participation with states and the Philip Morris Company to investigate health complaints of people who smoked cigarettes that were thought to be contaminated. After voluntary recall of 36 cigarette brands, medical and laboratory investigations began and are continuing. Except in a few cases, review of medical records of callers did not indicate that symptoms were associated with acute chemical exposure.
- Distribution of information to help build the capacity of state health departments and national organizations in the control of tobacco use. Effective state strategies for control were documented and distributed widely. References to state legislation affecting the sale, marketing, taxation, and public use of tobacco products were included. A report published in November 1995 concluded that state regulation of tobacco has resulted in substantial progress toward the *Healthy People 2000* national health objectives.

NIOSH

NIOSH Is 25 YEARS OLD

The National Institute of Occupational Safety and Health (NIOSH) celebrated its 25th anniversary on April 29, 1996. NIOSH provides national and world leadership in preventing work-related illness, injury, and death. The institute has conducted research on issues ranging as wide as lung disease among sandblasters to carpal tunnel disease among computer users.



Firefighters were on the front lines of the Oklahoma City bombing search and rescue efforts, using skills developed through NIOSH-supported training programs.

Some NIOSH accomplishments:

- The new NIOSH respirator regulations resulted in the dual benefit of better protection for workers and reduced cost of the respirators. Respirators used in health care for protection against TB, for instance, decreased in cost from \$8 to less than \$1. Overall savings in the health care industry will be in the millions of dollars.
- NIOSH findings led to the rapid removal of chemicals proven to have adverse reproductive effects among the men and women working with these chemicals.
- Roughly three-quarters of all businesses in the United States employ 10 or fewer workers. NIOSH works to solve the unique safety and health problems of small businesses.
- At no cost to the requester, NIOSH conducts health hazard evaluations (HHEs) in a variety of workplaces, from farms to offices and construction sites.
- NIOSH is a leader in the field of workplace violence research, providing risk factor information and prevention methods for both fatal and nonfatal violence.
- The scientific community and NIOSH are conducting studies to evaluate the relationship of exposures to environmental substances and the resultant incidence of breast cancer.
- Frequent airline travel may result in adverse reproductive outcomes by increasing the risk of miscarriage, premature delivery, and menstrual disorders. NIOSH and the Federal Aviation Administration will conduct an investigation of flight attendant reproductive health to understand these outcomes better. Frequent flyers on the more than 300 million plane trips taken each year in the United States will also benefit from these results.

PRIORITY ONE:**To Strengthen Essential Public Health Services****Surveillance**

NIOSH has made conceptual changes in the way surveillance is conducted, resulting in substantial progress in the prevention of occupational injuries and diseases.

PRIORITY TWO:**To Expand the Capacity To Respond to Urgent Health Threats****Health Hazard Evaluations**

At the request of employers, employees, or labor representatives, NIOSH conducts more than 400 health hazard evaluations each year to evaluate suspected health concerns at specific work sites.

Training Fire Fighters

NIOSH supported hazardous-substance training programs for fire fighters through a cooperative agreement with the International Association of Fire Fighters.

PRIORITY THREE:**To Develop Nationwide Prevention Strategies**

NIOSH and its partners are creating NORA—a National Occupational Research Agenda—to create priorities for the next decade and to maximize the impact of research on preventing injury, disease, and death in the workplace. NORA was presented April 29, 1996, at the NIOSH 25th anniversary in Washington, DC.

PRIORITY FOUR:**To Promote Women's Health**

NIOSH has identified musculoskeletal disorders, violence, stress, exposures to toxic substances, and fit of personal protective equipment as key occupational safety and health issues of particular concern to women.

PRIORITY FIVE:**To Invest in the Health of Our Youth****Adolescents at Work**

NIOSH has been a leader in research to reduce work-related injuries and fatalities among adolescents and in developing partnerships to carry out prevention efforts for adolescents at work. Each year some 70 adolescents die from injuries at work and hundreds more are hospitalized.

Take-Home Toxins

NIOSH recently published a document that detailed the hazards of take-home toxins and provided prevention methods to protect the families of workers from these exposures.



NIOSH is studying the possibility of adverse reproductive effects on frequent fliers as well as breast cancer among women exposed to ethylene oxide. These are two of the 50 studies NIOSH is currently conducting that focus on women's health.

NIOSH

CDC's 50th Anniversary Picnic



Edwin Moses (two-time Olympic gold medalist in the 400 meter hurdles) congratulated CDC for our prevention accomplishments. He attributed his own success to personal prevention goals: a good diet, attention to biomechanics, and a positive spiritual life.

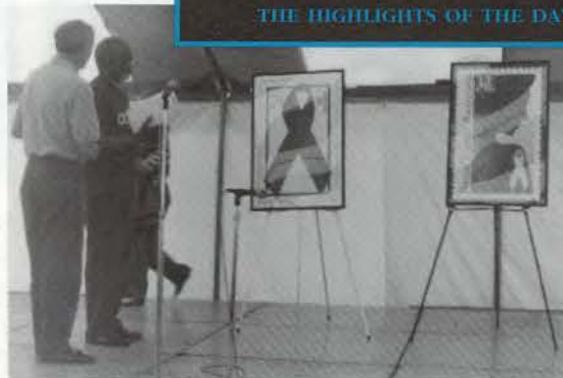


Senator Sam Nunn is the sixth person to receive the Champion of Prevention Award from CDC. Dr. Satcher presented the award to Senator Nunn in appreciation for his dedication and commitment to improving the quality of life for all Americans and for his support of CDC programs in particular.

CDC CELEBRATED ITS 50th ANNIVERSARY AT THE JULY 1st EMPLOYEE'S PICNIC WITH AN ASSORTMENT OF COMMEMORATIVE EVENTS AND ENTERTAINMENT. THE GLOBAL HEALTH ODYSSEY OPENED DURING THE PICNIC AND MORE THAN A THOUSAND VISITORS TOURED THE INTERACTIVE LEARNING CENTER, MUSEUM, AND VISITOR'S CENTER. THIS PHOTO DISPLAY TOUCHES ON SOME OF THE HIGHLIGHTS OF THE DAY.



Several EPO employees got together to make a 50th anniversary afghan. They presented the afghan to CDC as a gift for the celebration.



The U.S. Postal Service made a gift of two posters featuring prevention-related stamps to the CDC—AIDS and breast cancer prevention.



Dr. Philip Lee, Assistant Secretary for Health, Department of Health and Human Services, donned his CDC 50th Anniversary T-shirt and congratulated us on our good work.



The SHARE store sold commemorative T-shirts, lapel pins, mugs, and sweat shirts during the picnic.

CDC's 50TH ANNIVERSARY PICNIC



Awards were given for achievements in the Director's Physical Activity Challenge. The mission of the Challenge was for employees to honor the 50th anniversary by promoting regular, moderate physical activity as a commitment to CDC's prevention mission. Of the 64% who signed up for the Challenge, 80% met their goal to be active for at least 10 minutes a day, 3 days a week for 50 days. First place for employee participation went to IHPO, who had 87% of their employees signing up and 98% completing the challenge.



Mrs. Nola Richardson Satcher



Kennesaw Mountain Kloggers

AN ARRAY OF TALENTED CDC EMPLOYEES ENTERTAINED THE AUDIENCE DURING THE PICNIC. THE LINE-UP INCLUDED THESE PERFORMERS:

HAIR OF THE DOG BAND—MEDLEY

"WHO ARE WE?" (READING)—PERSTEPHANIE THOMPSON

"CALLING BY THE RIVER" AND "THE COMPETITION"—KENNESAW MOUNTAIN KLOGGERS WITH DONNA HIETT

"GET THERE"—DARROW JOHNSON

"COLORS OF THE WIND"—DIANE SMALL

"LOVE IS A MORE EXCELLENT WAY"—CYNTHIA BOLTON

"JEWELER'S CLOTH,"—A POETRY READING BY MRS. NOLA RICHARDSON SATCHER

"CLARINET POLKA" AND "UNDER THE DOUBLE EAGLE"—CHARLES HATHWAY AND MARY MOREMAN ON ACCORDIONS

"CRY"—JULIE ADAMS

"LET IT FLOW"—LINDA SHELTON AND JANICE BATTLE

"COUNT ON ME"—FRIENDS UNITED

DR. RICK TROWBRIDGE WAS THE MASTER OF CEREMONIES.



Perstephanie Thompson



Julie Adams



Friends United

*HIGHLIGHTS OF CDC'S 50-YEAR HISTORY (1946-1996)—THE FIRST DECADE
(1946-1955)*

1946

Communicable Disease Center (CDC) established as a field station of the Bureau of State Services—a unit of the Public Health Service (PHS)—headed by Dr. Joseph Mountin; locates its headquarters in the deactivated Office of Malaria Control in War Areas, Atlanta, Georgia, on the sixth floor of the Volunteer Building on Peachtree Street.

CDC houses the laboratory division at the Lawson Veterans Administration Hospital in Chamblee, an Atlanta suburb.

1947

CDC makes token payment of \$1 cash for the legal transfer of 15 acres on Clifton Road, Atlanta, which Emory University deeds to CDC.

Establishes the Division of Epidemiology upon transfer of PHS plague control to CDC.

Establishes the Veterinary Public Health Division.

Initiates the National Malaria Eradication Program.

Provides disaster assistance during multiple chemical explosions in Texas City in April, which killed hundreds of people and left the city devastated; subsequently designated as the PHS agency to administer aid in times of disaster or epidemics.

1948

CDC receives reports of indigenous malaria cases from only four states: Alabama, Georgia, Mississippi, and South Carolina.



Dr. Joseph W. Mountin, founder of CDC.

The federal government establishes the Public Health Advisor program.

1949

CDC produces more than 50 health films and other audiovisual materials for use in field training courses here and abroad.

Employees establish SHARE, Inc., an employee organization, and the CDC Federal Credit Union.

1951

CDC establishes the Epidemic Intelligence Service.

Begins development of national disease surveillance systems.

Establishes field stations at Wenatchee, Washington, to study the health effects of environmental poisons; and at San Juan, Puerto Rico, to study tropical diseases.

Redesignates Midwestern CDC Services as the Kansas City Field Station.

Begins to withdraw active participation in field operations (spraying) for malaria control, because of the rapid decline of malaria in the United States.

Headquarters occupies the fourth floor of the Peachtree-Seventh Building, Atlanta.

1952

CDC establishes a field station at Greeley, Colorado, to study arthropodborne encephalitis.

Terminates active support of field operations for malaria control.

1953

As a component of the PHS, CDC becomes part of the newly created Department of Health, Education and Welfare. (PHS was formerly attached to the Federal Security Agency.)

Receives first reports of rabies cases in bats.

1954

CDC establishes a field station at Logan, Utah, to study vector ecology and encephalitis.

Establishes the National Rabies Control Activities Unit.

Begins work on leptospirosis and salmonella.

1955

CDC develops the fluorescent antibody test, a diagnostic technique for rapidly identifying bacterial and viral pathogens.

Establishes the Polio Surveillance Unit, in response to a nationwide epidemic of vaccine-associated poliomyelitis; the Cutter Laboratory vaccine is identified as the sole source of the outbreak, thus preserving the national polio vaccination program.

THE SECOND DECADE

(1956 - 1965)



Vaccination among pets and livestock has reduced the incidence of rabies. Concerns have shifted more to the threats presented by animals in the wild.

1957

With the transfer to CDC of the Venereal Disease Control Grant-in-Aid program, Public Health Advisors join the ranks.

Serves as Reference Center for the Americas in the World Health Organization (WHO) international network of virus laboratories.

Establishes the Influenza Surveillance Unit.

For the first time receives no reports of indigenous malaria cases.

1958

CDC sends its first team of epidemiologists overseas—to Pakistan—in response to a request for aid in an epidemic of cholera and smallpox in Southeast Asia.

1959

CDC develops a fluorescent antibody test for rabies and first uses it in a field test with 100% accuracy.

1960

CDC headquarters on Clifton Road completed and occupied (includes administrative and program offices, laboratories, a library, a computer services area).

Tuberculosis program transferred to CDC.

1961

Morbidity and Mortality Weekly Report (MMWR) transferred to CDC.

Audiovisual unit transferred out of CDC (becomes the PHS audiovisual facility the following year).

CDC assumes PHS responsibility for control of polio.

1962

CDC establishes the Medical Audiovisual Branch.

Establishes the National Laboratory Improvement program to upgrade laboratory performance and to promote increased standardization of diagnostic tests.

1963

CDC establishes the Immunization Assistance Grant Program.

Establishes the smallpox unit in the Bureau of Epidemiology.

EIS Officer in North Carolina involved in describing Reye's syndrome.

Purchases an additional five acres for the Clifton Road facility.

Begins tests of the jet injector gun and smallpox vaccines in the Pacific Island nation of Tonga.

1964

Advisory Committee on Immunization Practices (ACIP) holds its first meeting at CDC.

Participates in the first national immunization conference.

Establishes the Research Grants Activity.

Establishes the Hospital Infections Unit as part of the Bureau of Epidemiology Program.

Constructs animal breeding and holding facilities in Lawrenceville.

First Lady "Ladybird" Johnson (Mrs. Lyndon B. Johnson) breaks ground for additions to CDC headquarters.

1965

CDC supervises the first use of the jet injector in a smallpox endemic area—Anapa, Brazil.



Rat control was assigned to CDC, 1965.

*THE THIRD DECADE
(1966-1975)*

1966

CDC launches the Smallpox Eradication Program to manage the USAID-funded program to eradicate smallpox and control measles in 20 African countries.

Establishes an immunobiologics activity for stockpiling and distributing certain rare vaccines to people whose occupations place them at high risk for infection.

Completes construction of an animal laboratory, auditorium, classrooms, and warehouse/shop additions at headquarters, increasing available space by 105%.

Installs first computer system (16,000 characters of memory) to implement batch and business-oriented applications.

Office of Pesticides transferred to CDC.

Announces the first national measles eradication campaign.

Establishes a field epidemiology division to train EIS Officers in general epidemiology and to control measles through state health departments.

1967

CDC starts the Metropolitan Atlanta Congenital Defects Program, the first population-based surveillance of birth defects.

Reports for the first time an often fatal disease (later called Marburg fever) of unknown etiology among people having contact with African green monkeys.

Renamed the National Communicable Disease Center.

Foreign Quarantine Division transferred to CDC.

Establishes the Office of Program Planning and Evaluation to develop long-range plans and evaluate prevention efforts.

Establishes the Family Planning Evaluation Unit to provide technical assistance to newly emerging family planning clinics and to determine the safety and efficacy of contraceptive methods.

Gains responsibility for development and implementation of standards relating to laboratory personnel, quality control, and

proficiency testing.

Dedicates the new building at the field station in Fort Collins, Colorado.

1968

CDC conducts the first major initiative in international famine relief in Nigeria, West Africa.

Becomes a bureau within the Public Health Service.

Establishes the State and Community Services Division, which comprises the immunization, tuberculosis, and venereal disease branches.

Investigates a puzzling epidemic of an unidentified, highly infectious respiratory disease in Pontiac, Michigan (later identified as Legionnaires' disease).

1969

CDC establishes the Clinical Laboratory Licensure Activity.

Constructs a permanent biocontainment laboratory in Atlanta and helps describe Lassa fever with recognition of cases in Nigeria.

Holds a world conference on Hong Kong flu.

Begins a national rubella immunization campaign.

1970

CDC renamed the Center for Disease Control, to reflect a broader mission in preventive health.

Establishes the National Nosocomial Infections Surveillance system to monitor trends in infections acquired in hospital settings.

Nutrition Program, transferred to CDC, is charged with assessing the occurrence of severe malnutrition in the United States and abroad.

CDC studies the simultaneous administration of six antigens in vaccinations of Nigerian children.

Initiates the Immunization Action Month campaign in the United States.

Starts the Birth Defects Monitoring Program, a nationwide hospital-based birth defects surveillance of about 25% of all births in the United States.

1971

CDC recommends discontinuation of routine vaccinations for smallpox in the United States.

Discovers that hepatitis B is sexually transmitted.

1972

CDC initiates the Preventive Medicine Residency program.

The National Clearinghouse for Smoking and Health, a precursor to the current Office on Smoking and Health, transferred to CDC.

Establishes a national gonorrhea control program.

Installs a new central computer at headquarters (with about the same computing power as today's small personal computer).

1973

NIOSH becomes part of CDC.

CDC documents the first nationwide outbreak of Reye's syndrome.

Becomes an agency of the Public Health Service.

Begins regular response to public health crises abroad, in providing famine assistance in sub-Saharan Africa.

Establishes the Office of Biosafety.

Lead-based paint poisoning prevention and urban rat control activities transferred to CDC.

Purchases an additional 0.564 acres at headquarters.

1974

CDC begins the SENIC project, a study of nosocomial infection control.

Establishes the Bureau of Health Education (Office of Smoking and Health becomes a part of this Bureau).

Completes construction of administration and cafeteria additions at headquarters.

1975

CDC establishes the vessel sanitation program in cooperation with the cruise ship industry.

Dental Disease Prevention Activity transferred to CDC.

Establishes a WHO Collaborating Center for Leptospirosis.

Receives report of the last case of variola major smallpox.

Puts a national gonorrhea control program in place, to reverse an upwardly spiraling trend in the disease.

Establishes the Chronic Disease Division to target cancer, birth defects, and environmental health issues.

Reports an increase in the incidence of Rocky Mountain spotted fever.

Spearheads Immunization Action Month, to immunize five million preschool children against measles, mumps, rubella, polio, diphtheria, tetanus, and whooping cough.

Assists in visa and entry screening, immunization, and follow-up of the health

of Vietnamese refugees to the United States.

Develops scavenging systems for reducing waste anesthetic gas exposures in hospital and dental operating rooms.

Releases findings of a national nutrition survey that indicates that the problem of obesity has its roots in eating habits developed in childhood.

THE FOURTH DECADE (1976-1985)

1976

CDC investigates an outbreak of illness in Philadelphia now called Legionnaires' disease.

Identifies two unknown virus isolates from New Jersey as being closely related to the swine influenza virus; starts a nationwide vaccination program.

Leads public health teams to Zaire and the Sudan to investigate two large outbreaks of lethal hemorrhagic fever caused by the Ebola virus.

Completes SENIC phase I (nosocomial infections).

Reports a 50% increase in measles cases.

Establishes ongoing national surveillance for Reye's syndrome.

Installs a computer at headquarters with the hardware capabilities to make central processing unit resources directly accessible.

NIOSH occupies the Robert A. Taft Center in Cincinnati, Ohio.

CDC institutes a revised Vessel Sanitation Program.

Secures an astronauts' mobile quarantine facility from the National Aeronautics and Space Administration.

Provides the first evidence of penicillin-resistant gonorrhea.

1977

CDC launches the National Childhood Immunization Initiative.

Reports an outbreak of raccoon rabies in the mid-Atlantic states.

NIOSH reorganizes; assumes new mine safety and health responsibilities.

CDC isolates *Legionella pneumophila*, the causative agent of Legionnaires' disease.

Establishes the Diabetes Control Activity; initiates support to states for diabetes control.

Receives report of the last case of endemic smallpox (variola minor) in the world, in Somalia.

Begins an in-depth study of Lassa fever; later finds that the disease is more common in West Africa than previously believed, with 100,000 infections occurring annually.

Establishes the first Educational Resource Centers in universities to provide an adequate number of professionals trained in occupational safety and health.

Initiates a national nutritional status surveillance system to monitor the nutritional status of high-risk populations.

1978

CDC investigates the first cases of cholera in the United States since 1911.

Improves the technology for lead poisoning screening; uses the hematofluorometer as the primary screening tool for detecting lead poisoning and iron-deficiency anemia.

Reports the first drug-resistant tuberculosis outbreak; causative organisms are found resistant to the three most commonly used drugs: isoniazid, streptomycin, and para-aminosalicylic acid.

Completes SENIC phase II (nosocomial infections).

Opens an expanded maximum containment laboratory ("hot lab") to handle viruses that are too dangerous to be handled in ordinary laboratories.

Conducts hepatitis A and B studies in primates.

Holds the first international conference on Legionnaires' disease.

NIOSH publishes its 100th criteria document.

CDC spearheads a national program to eliminate indigenous measles by October 1982.

Begins a cooperative 5-year project with India to evaluate serologic tests for malaria and provide training in test performance and field evaluation.

CDC activities on smoking and health transferred to the Office of the Assistant Secretary for Health with the establishment of the Office on Smoking and Health, a national program to inform Americans about the health hazards of smoking.

1979

CDC reports immunization levels of 91% among school children.

Publishes *Healthy People: The Surgeon General's Report on Disease Prevention and Health Promotion*.

Establishes a Lassa fever WHO Collaborating Center in Sierra Leone.

Investigates the health effects related to the Three-Mile Island nuclear incident.

Studies the prevalence of hepatitis B among homosexual men; begins trial studies of hepatitis B vaccines.

Publishes a criteria document about working in confined areas: workers exposed to beryllium are at excess risk for cardiovascular disease and lung cancer.

Supports lead poisoning screening programs in 64 communities; 450,000 children are screened, the largest number tested in the previous 5 years.

Reports a rabies outbreak along the U.S.-Mexican border; carries out an intense rabies control program with Mexican health authorities.

Assumes lead responsibility in the Public Health Service for environmental emergency response.

Reports an outbreak of paralytic polio among the Amish; conducts a biochemical test that pinpoints the wild paralytic poliovirus strain, the first such specific differentiation between wild polioviruses.

Establishes a fluoridation project grant program.

1980

CDC organizes a task force on toxic shock syndrome.

Assists in the study of health effects related to the Mount St. Helens volcanic eruption.

Initiates the Global EIS Program by establishing the first international Field Epidemiology Training Program in Thailand.

Coordinates follow-up studies of the health effects of Love Canal, an abandoned toxic waste site in Niagara Falls, New York.

Confirms that a causative agent of typhus in humans—*Rickettsia prowazekii*—is also the infectious agent of fleas and lice from flying squirrels captured in Florida and Virginia.

Shows that campylobacter is the most common cause of diarrheal illness leading to hospitalization in the United States.

CDC changes its organizational structure and is renamed "Centers for Disease Control."

Publishes *Promoting Health/Preventing Disease: Objectives for the Nation*.

Disbands the Bureau of Smallpox Eradication.

Assumes primary responsibility for promoting the health of refugees resettled in the United States.

Provides epidemiologic assistance to Kampuchean refugees in Thailand and to Somali refugees in Africa.

Isolates the Marburg virus from a patient in Kenya, thus extending the known geographic distribution of this disease.

Initiates Project SHAPE (Safety and Health Awareness for Preventive Engineering) to encourage improvements in engineering practice, education, and research.

Funds community-based programs in 20 states to help reduce death and disease associated with diabetes.

Begins case-control studies of Reye's syndrome in Arizona, Michigan, and Ohio.

Establishes the annual Joseph W. Mountin Lecture to commemorate the founding of CDC and the global eradication of smallpox.



Reports of Rocky Mountain spotted fever peaked in 1981.

1981

With the California Department of Health, CDC reports the first cases of an illness which later will be called acquired immunodeficiency syndrome (AIDS); organizes a task force of personnel from each center in response to evidence of an epidemic.

Reports peak incidence of Rocky Mountain spotted fever, a rickettsial disease, in the United States.

Begins participation in the Combating Childhood Communicable Diseases project to reduce preventable death and disease in African children.

Conducts a multicenter vaccine trial that demonstrates the efficacy of a newly developed hepatitis B vaccine in preventing hepatitis B infection.

Assists in an investigation in Spain of a massive outbreak of severe respiratory illness linked to contaminated food oil.

Assists in the first redesign of the jackhammer in 50 years to reduce "white finger" disease, a disabling occupational condition.

The Department of Health and Human Services assigns implementation of the Superfund Act to CDC.

Administers the Preventive Health Block Grant, a consolidation of categorical grants to state health agencies, to address such health-related issues as hypertension, fluoridation, rodent control, and sex offenses.

Publishes the Surgeon General's advisory against the use of salicylate (aspirin) for children with influenza or chickenpox to prevent Reye's syndrome.

Conducts a random telephone survey, for the first time, to determine the prevalence of health-risk behaviors among U.S. adults

(this and subsequent surveys are the precursors to the Behavioral Risk Factor Surveillance System established in 1984).

Begins a study of birth defects in the offspring of Vietnam war veterans.

Develops a panel of monoclonal antibodies directed against rabies viruses, a method for better defining rabies epidemiology.

Begins an extensive birth defects study in the Atlanta area.

Receives recognition for outstanding technological achievement for the design of the Aerodynamic Particle Sizer, which measures particle size with laser velocimetry.

Begins initiatives to improve estimates of the incidence of child abuse, homicide, and other forms of violence, introducing these phenomena as public health considerations.

Adds three new states to the National Nutritional Status Surveillance System, bringing the total to 25 states.

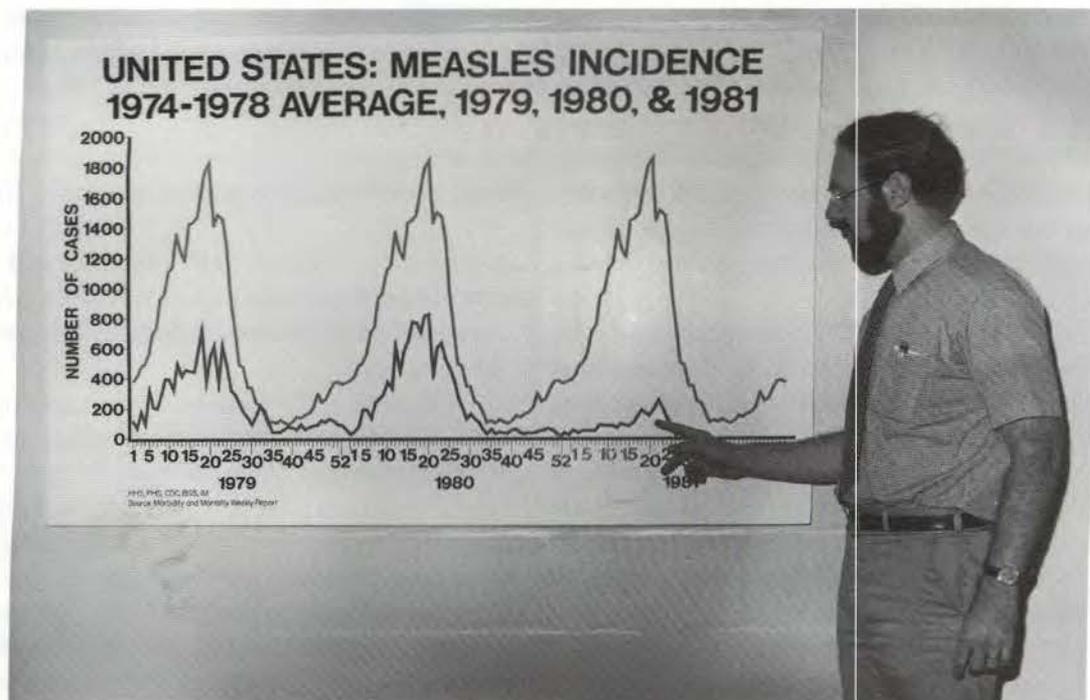
1982

CDC focuses on prevention of disease and injury related to alcohol abuse.

Begins an international campaign to gather support for elimination of dracunculiasis (Guinea worm disease).

Discovers that foodborne *E. coli* O157 is the cause of two outbreaks of hemorrhagic colitis.

Develops Table V of the *MMWR*, which lists primary causes of premature death, numbers and rates of death attributed to each cause, and years of potential life lost for each cause.



Measles cases are reported to be at an all-time low, 1982.

Initiates the Fatal Accident Circumstances and Epidemiology program, to identify state-specific leading causes of workplace deaths and types of occupations that put workers at greatest risk.

Reports an all-time low of 1,714 measles cases, more than a 99% reduction from the annual average of 500,000 cases in the prevaccine era.

Establishes a cooperative agreement with the Association of Schools of Public Health to foster interaction between health department personnel and public health faculty and students.

Initiates a Field Epidemiology Training Program in Indonesia.

Initiates Project Minerva to incorporate safety and health management concepts into the nation's business school curricula.

Begins national surveillance for Lyme disease, a tickborne disease.

AIDS: publishes infection control recommendations for clinical and laboratory

staff; receives first reports of AIDS in a person with hemophilia, in a transfusion recipient, and in infants born to mothers with AIDS.

1983

Agency for Toxic Substances and Disease Registry (ATSDR) established.

Studies of Vietnam-era veterans' health transferred to CDC.

Publishes the NIOSH list of Ten Leading Work-Related Diseases and Injuries.

Establishes a series of annual Institutes on Health Laboratory Practices.

AIDS: establishes the National AIDS Hotline to handle the growing number of calls from concerned citizens; advises people at increased risk of contracting AIDS to refrain from donating blood; receives report of first cases of AIDS among female sex partners of men with AIDS in New York.

Initiates the *MMWR* Surveillance Summaries.

Installs a new mainframe computer at headquarters.

Moves the Phoenix Laboratories to Atlanta.

Establishes a Violence Epidemiology Branch to apply epidemiologic techniques to the problems of child abuse, homicide, and suicide.

Identifies exercise as a priority research topic because of its influence on the reduction of coronary artery disease, weight control, and symptoms of depression.

Conducts nutrition assessments in Mauritania in response to a severe famine problem emerging in sub-Saharan Africa.

1984

CDC publishes infection control guidelines for child care settings.

Establishes the Planned Approach to Community Health program to help states and communities address high-priority health problems.

Establishes the Behavioral Risk Factor Surveillance System to monitor the prevalence of major behavioral risks to health in adult populations in the United States.

Reports declining incidence of Reye's syndrome in the United States.

AIDS: trains public health department and laboratory staff to perform a new test for antibodies to the virus that causes AIDS (note: the test was not licensed for use until 1985); begins funding the United

States Conference of Mayors to provide AIDS education, information, and technical assistance at the local level.

Receives report of an outbreak of antimicrobial-resistant salmonellosis.

Completes a study on the risks for Vietnam veterans of fathering babies with birth defects: no evidence of greater risk for offspring is found.

Begins long-term assistance to the government of India in assessing the health effects of a poison gas leak at a chemical plant in Bhopal that left more than 2,000 people dead and thousands more injured: the epidemiologic studies of the disaster and measurement of long-term health effects involve CDC on a broader scale than for any previous international emergency requests.

Begins collaboration with the Carter Center in Atlanta, by providing technical assistance in the "Closing the Gap" project that looks at major risks to the health of Americans and outlines preventive actions to improve the quality of life.

Funds research to study the epidemiology of human papillomavirus.

Conducts nutritional assessments in Niger and Mauritania and among Afghan refugees in Pakistan.

Initiates Field Epidemiology Training Programs in Mexico and Taiwan.

Purchases approximately nine additional acres at CDC Clifton Road, bringing the total acreage to 29.5.



CDC gives assistance to Mexico City after major earthquake and mudslides there, 1985.

1985

CDC creates an injury epidemiology and control division.

Decline ceases in reported cases of tuberculosis; evidence mounts of multidrug-resistance in the bacterium that causes TB.

Provides international disaster relief assistance to Mexico after a major earthquake in its capital, Mexico City, and to Puerto Rico and Colombia following devastating mudslides in these areas.

AIDS: Cosponsors the first International Conference on AIDS; funds 55 state and local health departments to establish 874 alternative counseling and testing sites; publishes provisional recommendations for screening donated blood and plasma for the antibody to the virus that causes AIDS; publishes recommendations for prevention of perinatal transmission of the virus that causes AIDS—later called human immunodeficiency virus (HIV)—and HIV transmission in the workplace.

Investigates an outbreak of listeriosis in contaminated cheese that claims several lives.

Establishes a WHO Collaborating Center on dracunculiasis (Guinea worm disease).

Reports increases in cases of typhoid fever due to importation.

Breaks ground for the new Viral and Rickettsial Diseases Laboratory at headquarters.

Initiates a Field Epidemiology Training Program in Saudi Arabia.

Holds the first national conference on the prevention of leading work-related diseases and injuries.

Develops recommendations for preventive and decontamination measures for PCB, dioxin, and furan exposures from transformer fires and explosions.

ACIP publishes recommendations to improve vaccination coverage of adults for influenza, pneumococcal disease, hepatitis B, measles, rubella, tetanus, and diphtheria.

CDC reports a doubling of penicillinase-producing *Neisseria gonorrhoeae* (PPNG) cases from the previous year. (PPNG is a strain of gonorrhea resistant to penicillin.)

Publishes *Preventing Lead Poisoning in Young Children: A Statement by the Centers for Disease Control*.

Publishes final results of the SENIC Project (on nosocomial infections) that show that approximately 32 percent of all hospital infections can be prevented by well-organized, appropriately staffed programs.

Publishes *Resource Guide: State Environmental Health Laboratory Services*, an inventory of environmental laboratory services and programs provided at the state level.

Implements prevention and control strategies for *Chlamydia trachomatis*, the

most prevalent sexually transmitted bacterial pathogen in the United States.

Participates in the School Health Education Evaluation Project; the study demonstrates that school health education decreases the likelihood that children will adopt behaviors hazardous to their health.

As a result of several studies on potential exposure to ethylene oxide (a suspected carcinogen) among hospital workers, produces a videotape, widely used by health care facility engineers and managers, about strategies for preventing worker exposure to this hazardous substance.

Conducts a study of a containment in the production of microorganisms in a conventional enzyme fermentation process.

Conducts disease control and nutrition assessments in Guinea, Burkina Faso, and Sudan as the African famine worsens; assesses nutrition status and number of infant deaths in Afghan refugee populations in Pakistan.

THE FIFTH DECADE
(1986-PRESENT)

1986

Office on Smoking and Health, which targets the nation's primary preventable health problem, becomes part of CDC.

CDC cosponsors the first national Conference on Chronic Disease Prevention and Control.

Develops more sensitive means to assess human exposure to environmental toxicants; uses these tests in studies of Vietnam-era veterans' health to determine the effects of such exposures on human health.

Influenza surveillance detects a significant change in the A(H1N1) virus and suggests that a worldwide spread of this new strain might occur.

Contracts with the American Social Health Association to operate the CDC AIDS hotline.

HIV/AIDS: Publishes 14 sets of guidelines to further prevent and describe HIV/AIDS infection among the general public and high-risk groups; discovers the homing mechanism used by HIV to infect white blood cells.

Celebrates 40 years of disease prevention and health promotion (July 1).

Celebrates the 15th anniversary of NIOSH (April 29).

Awards nearly \$1.5 million to three schools of public health to establish research and demonstration centers for health promotion and disease prevention: the University of North Carolina, Chapel Hill; the University of Texas, Houston; and the University of Washington, Seattle.

Establishes the Training and Laboratory Program Office to combine laboratory and professional development and training activities.

Establishes the Information Resources Management Office to oversee data processing, office automation, telecommunications, and library services.

Establishes the Charles C. Shepard Science Award to recognize the CDC authors of the outstanding scientific journal articles published the preceding year.

Receives \$10 million from the National Highway Traffic Safety Administration to support efforts to prevent and control injuries.

Expands assistance to the Pan American Health Organization in its international effort to eliminate polio from the Americas by 1990.

Provides \$45 million in immunization assistance and recall systems for children who miss standard vaccinations to help ensure levels of immunization higher than 95% among children entering school.

Pursues two new leads in the area of birth defects prevention: 1) a suggested association between birth defects and high doses of vitamin A during early pregnancy and 2) a feasibility study for a clinical trial to determine whether vitamin supplementation will prevent certain defects.

Conducts a study of bridge and tunnel officers which suggests that carbon monoxide plays an important role in deaths from cardiovascular disease and that corroborates other evidence that carbon monoxide is the factor in cigarette smoke that is associated with cardiovascular deaths.

Produces a "Homicide Surveillance Summary" showing that high rates of homicide mortality among blacks and other minorities account for much of the marked disparity in deaths and illnesses faced by these groups relative to the white population.

Establishes the Medical Examiner/Coroner Information Sharing Program to improve the quality of death investigation examinations and collection and sharing of related data among medical examiners, coroners, and public health officials.

Publishes the first comprehensive CDC plan for public health surveillance.

Develops Epi-Info, a series of computer programs to format and analyze questionnaire data and produce epidemiologic statistics.

Initiates a collaborative study with the FDA and NIH to assess the association between Creutzfeldt-Jakob disease and pituitary-derived human growth hormone.

1987

The National Center for Health Statistics becomes an organizational component of CDC.

CDC works closely with state and local education agencies, for the first time, to educate youth on how to avoid the risk of HIV infection.

Provides funds to launch first community-based chronic disease prevention programs in Alabama, Maine, and Ohio.

Establishes the Pregnancy Risk Assessment Monitoring System to monitor maternal risk behaviors and to identify gaps in the health care delivery system for pregnant women and infants.

Celebrates the 10th anniversary of the eradication of smallpox (October).

HIV/AIDS: Develops a performance evaluation program to ensure quality of HIV-related laboratory testing; publishes guidelines on preventing HIV transmission in health care settings, on HIV counseling, and on antibody testing; sponsors the first annual National Conference on the Prevention of HIV and AIDS Among Racial and Ethnic Minorities in the United States; begins funding perinatal HIV prevention projects; launches the "America Responds to AIDS" national health information campaign; extends HIV counseling and testing availability to include STD clinics, women's health centers, and drug treatment facilities.

Creates the Center for Environmental Health and Injury Control from the Center for Environmental Health.

Establishes the Advisory Committee for the Elimination of Tuberculosis.

Funds the first five Injury Control Research Centers throughout the United States to conduct research to prevent injuries, improve treatment and rehabilitation, and lower the cost of injuries.

Reports that approximately 7,000 workers die of traumatic injuries annually; most of these are males killed through unintentional injuries; of the women killed at work, 42 percent are victims of homicide.

Finds evidence that salmonella infection is being transmitted in the ova of infected hens, as well as through the environment, in the northeastern United States.

Establishes a Field Epidemiology Training Program in the Philippines.

Identifies endotoxins in cotton dust as a cause of acute respiratory response—the most significant development in the understanding of byssinosis in the past 15 years.

Establishes a national toll-free number to provide public access to NIOSH and its workplace safety and health resources.

Reports a strong association between Reye's syndrome and aspirin, indicating that more than 90 percent of cases could be prevented by reducing the use of aspirin for the treatment of children with chickenpox and influenza-like illness.

1988

CDC sends information related to the prevention of HIV infection—*Understanding AIDS*—to every household in America.

Understanding AIDS

A Message From The Surgeon General

This brochure has been sent to you by the Government of the United States. In preparing it, we have consulted with the top health experts in the country.

I feel it is important that you have the best information now available for fighting the AIDS virus, a health problem that the President has called "Public Enemy Number One."

Stopping AIDS is up to you, your family, and your loved ones.

Some of the issues involved in this brochure may not be things you are used to discussing openly. I can easily understand that. But now you must discuss them. We all must know about AIDS. Read this brochure and talk about it with those you love. Get involved. Many schools, churches, synagogues, and community groups offer AIDS education activities.

I encourage you to practice responsible, behavior based on understanding and strong personal values. This is what you can do to stop AIDS.



C. Everett Koop, M.D., Sc.D.
Surgeon General

Este folleto sobre el SIDA se publica en Español.
Para solicitar una copia, llame al 1-800-341-811A.

The Understanding AIDS brochure was mailed to every household in the United States in 1988, the largest mailing in CDC's history.

Begins the third national Health and Nutrition Examination Survey, the largest such survey ever conducted.

Provides technical assistance in efforts to eradicate polio from the world, in response to a WHO resolution.

Participates in the formation of the National Coalition for Adult Immunization.

Is mandated by Congress to coordinate federal diabetes control activities and to translate important research findings into clinical and public health practice.

Develops the Disabilities Prevention Program to provide a national focus for the prevention of disabilities.

Dedicates the new Viral and Rickettsial Disease Laboratory at headquarters.

In the Surgeon General's report on the health consequences of smoking, presents the most conclusive evidence to date that nicotine is a highly addictive drug.

HIV/AIDS: Publishes guidelines for school education to prevent the spread of HIV/AIDS; initiates assistance to 32 national and regional minority organizations for prevention; begins funding prevention public information campaigns through health departments.

Establishes the Center for Chronic Disease Prevention and Health Promotion to target such chronic diseases as heart disease, cancer, and diabetes.

Appoints CDC's first Assistant Director for Minority Health.

Adds two more research and demonstration centers for health promotion and disease prevention in schools of public health—at the University of California, Los Angeles, and the University of Hawaii, Honolulu.

Opens the Clifton Child Care Center to provide child care services for employees of CDC, Emory University, and Henrietta Eggleston Hospital for Children.

Distributes *Recommendations for a Community Plan for the Prevention and Containment of Suicide Clusters*, in conjunction with public and other organizations.

Launches a pilot project to develop the Public Health Laboratory Information System, the first national public health laboratory-based system, in collaboration with the Association of State and Territorial Public Health Laboratory Directors.

"Adopts" Tilson Elementary School through the Adopt-a-School program of DeKalb County, Georgia.

Publishes the results of the Vietnam Experience Study, a comprehensive health examination and psychological evaluation of the health of Vietnam-era veterans.

Collaborates on a first pilot study in five hospitals that demonstrates the feasibility of surveillance for major adverse outcomes associated with anesthesia.

Initiates "Epidemiology in Action," a course for state and local public health professionals, in collaboration with the Emory School of Public Health.

Initiates a Field Epidemiology Training Program in Peru.

Joins a technical panel on prevention and control of infectious diseases to develop national health and safety performance standards for out-of-home child care programs.

Establishes a working case definition of chronic fatigue syndrome and emphasizes the importance of having researchers more explicitly define their cases in published studies.

Issues guidelines for the notification and counseling of blood donors who are seropositive for human T-lymphotropic virus types I and II (HTLV-I/II) in conjunction with screening the U.S. blood supply for HTLV-I/II.

1989

CDC develops new certificates to report births, deaths, and fetal deaths, which are adopted nationwide to provide data essential for prevention, research, and health education.

Investigates a nationwide outbreak of eosinophilia-myalgia syndrome, a severe disease occurring among some users of the amino acid L-tryptophan available as a nonprescription food supplement.

Leads the PHS in developing a blueprint to help strengthen state and local public health efforts, in response to the 1988 Institute of Medicine report on the future of public health.

HIV/AIDS: Reports 100,000th AIDS case; provides \$10 million in assistance to 50 racial and ethnic minority and other community-based organizations for prevention efforts in 27 metropolitan areas most heavily affected by HIV/AIDS; distributes guidelines for preventing HIV and hepatitis B virus infections among health care and public safety workers; provides \$153 million to health departments for counseling and testing, health education and risk reduction, minority initiatives, and public information campaigns.

Receives national endorsement of a plan to eliminate tuberculosis from the United States by the year 2010.

Provides financial and technical support to the Institute of Medicine's study on disability in America; funds nine state-based and four demonstration projects to prevent disabilities.



CDC publishes school guidelines to prevent the spread of HIV/AIDS.

Issues the 25th Surgeon General's report on the health consequences of smoking.

Breaks ground in Chamblee, Georgia, for new CDC laboratory and office facilities to house research work on birth defects, disability prevention, injury control, and environmental health.

Funds nine demonstration projects to help determine whether cost-effective assessment procedures can be used against outbreaks of vaccine-preventable disease among children in inner-city schools.

Establishes a WHO collaborating center for disaster preparedness.

With the Association of State and Territorial Public Health Laboratory Directors, establishes the National Laboratory Training Network in seven sites to improve laboratory training programs and communication among participants.

Provides emergency assistance to health departments serving the victims of Hurricane Hugo and of an earthquake in northern California.

Collaborates with the Health Resources and Services Administration and the National Highway Traffic Safety Administration (NHTSA) to produce "Injury Prevention: Meeting the Challenge," a plan to mobilize community-based injury prevention; collaborates with two universities and NHTSA to produce *Cost of Injury in the United States*, a report to Congress.

Expands hepatitis B prevention efforts among Southeast Asian refugees entering the United States by immunizing all children younger than age 7; receives congressional authorization of \$10.5 million to implement nationwide programs for screening and control of hepatitis B.

Establishes the Public Health Practice Program Office from the Training and Laboratory Program Office.

ACIP recommends a change in the routine for vaccination of children against measles, mumps, and rubella from a one-dose to a two-dose schedule.

Confirms that exposure to radon progeny in underground mines—even in the absence of cigarette smoking—is a potent carcinogen that should be strictly controlled.

Identifies unvaccinated children under age 6, primarily in inner cities, as a major source of increased measles cases (five-fold over the previous year); establishes a new measles laboratory to develop better diagnostics, investigate outbreaks, and study causes for vaccine failure.

Initiates surveillance for persons with chronic fatigue syndrome.

Identifies the agent (now called hepatitis C virus) of the majority of cases of parenterally transmitted non-A, non-B hepatitis.

1990

CDC receives lead responsibility for meeting 12 of the high-priority national health promotion and disease prevention objectives for the year 2000, as set forth in *Healthy People 2000*.

Encourages the integration of efforts to prevent HIV/AIDS and other sexually transmitted diseases in a variety of settings.

Revises the congenital syphilis reporting system; reports disproportionately high rates of syphilis in racial and ethnic minorities.

Reports possible transmission of HIV to a patient during invasive dental procedures.

Assumes responsibility for energy-related epidemiologic research for the Department of Energy nuclear facilities.

Grants nearly \$10 million to 52 state and local health departments to control hepatitis B infection in the United States, including screening of pregnant women and treatment of their newborns.

Publishes the National Profile of Local Health Departments, 1990, an overview of the nation's local public health system.

Helps establish the epidemiologic link between high body burdens of mercury and exposure to rooms with newly applied latex paints.

HIV/AIDS: Funds prevention programs directed toward racial and ethnic minorities at risk for HIV infection and initiates a program to evaluate these activities; publishes guidelines for managing occupational exposure to HIV.

Authorized by the Disadvantaged Minority Health Improvement Act of 1990 to increase the availability of data on minority health in the United States.

Authorized by the Breast and Cervical Cancer Mortality Prevention Act of 1990 to provide funding to states for breast and cervical cancer screening and follow-up services.

In the Surgeon General's report on smoking, focuses on the benefits of quitting smoking, including decreased risks of lung cancer, other cancers, heart attack, stroke, and chronic lung disease.

Conducts the first national Youth Risk Behavior Survey to measure the prevalence of high-priority risk behaviors among adolescents.

Expands funding to health departments, universities, and other organizations to improve the health and safety of construction and agriculture workers.

Completes its series of health studies related to military service in Vietnam (the Agent Orange projects), with the publication of the *Selected Cancers Study*.

Completes investigation of a disease outbreak in imported cynomolgus monkeys; revises requirements for the importation of cynomolgus, African green, and rhesus monkeys for biomedical research to minimize the risk of human and animal infection with newly recognized filovirus strains.

Finds that death rates among construction workers under age 65 are significantly higher than in the general population for several conditions, including site-specific cancers, asbestos-related diseases, mental disorders, alcoholism, digestive diseases, falls, poisonings, industrial fatalities and homicides.

Cosponsors a conference on youth violence in minority communities.

Achieves full implementation of the National Electronic Telecommunications System for Surveillance in all 50 states, the District of Columbia, New York City, and the U.S. territories.

Develops a method for studying occupational hazards to the male reproductive system.

Initiates a program to sequence the smallpox virus genome.

Establishes a national registry for congenital cytomegalovirus disease.

Issues new guidelines for the management of Lassa fever in the United States.

Establishes that human T-lymphotropic virus type II is endemic in some North American Indian populations.

1991

CDC reports an 18-fold increase in cases of Lyme disease compared to 1982.



CDC gets lead responsibility for the revision of federal standards for laboratory operations in the Public Health Service Clinical Laboratory Improvement Amendments, 1991.

Assists in planning national immunization initiative to ensure that 90 percent or more of all children in the United States are fully vaccinated by their second birthday.

Reports sharp increases in cases of tuberculosis in the United States, linked to HIV infection and AIDS.

Begins development of a national strategic plan for early detection and control of breast and cervical cancers among all American women.

Releases findings of the 1988 National Health Interview Survey of Child Health.

Releases guidelines that lower the threshold for public health concern about the amount of lead in the blood.

Establishes the Division of Oral Health to expand efforts to prevent oral disease and conditions.

In cooperation with the National Association of County Health Officials, develops the Assessment Protocol for Excellence in Public Health, a self-assessment and capacity-building tool for public health agencies.

HIV/AIDS: Reports the 200,000th AIDS case in the United States; provides funds to restructure five HIV/AIDS community demonstration projects to reach high-risk, hard-to-reach populations by extending prevention efforts to a variety of community sites and by eliciting the help of community residents and peer groups to motivate behavior change; publishes guidelines for prophylaxis against *Pneumocystis carinii* pneumonia for HIV-infected children.

Issues joint recommendations with OSHA for workers exposed to lead in the construction industry.

Completes a study of possible health effects among women of reproductive age as a result of exposure to electric and magnetic fields produced by video display terminals (VDTs). The study concluded that the use of VDTs did not increase these women's risks for having miscarriages or bearing infants with defects.

Directs \$23 million to help eight states develop comprehensive programs for the early detection of breast and cervical cancer that benefit primarily low-income, minority women; selects 12 states to receive such grants in 1992.

Launches a major study in China, in cooperation with researchers at Beijing Medical University, to demonstrate that folic acid taken before and during early pregnancy can prevent spina bifida and anencephaly, two common and severe birth defects.

Publishes *Healthy Communities 2000: the Model Standards for Community Preventive Health Services*, a guide for local communities in implementing national health goals as outlined in *Healthy People 2000: National Disease Prevention and Health Promotion Objectives*.

Publishes *Profile of State Public Health Systems*, a reference source for planning strategies to strengthen the public health system.

Fields the first large-scale health survey to employ computer-assisted interviewing.

Receives lead responsibility in the Public Health Service for revising the parts of the Clinical Laboratory Improvement Amendments of 1988 that deal with federal standards for laboratory operations.

Assumes responsibility for managing the development and implementation of a national analytic epidemiology research agenda related to energy.

Participates in an evaluation of the health effects of the Kuwait oil fires.

Develops "Guidelines for Telecommunications Systems for Surveillance," providing a systematic framework for public health surveillance data reported to CDC.

Moves the Office on Smoking and Health from Rockville, Maryland, to Atlanta.

Immunization Practices Advisory Committee (ACIP) recommends universal childhood hepatitis B vaccinations; routine use of *Haemophilus influenzae* type b conjugate vaccines in infants to prevent the most common cause of bacterial meningitis; and a two-dose schedule using combined MMR vaccine.

Establishes a unit to eradicate polio by the year 2000; provides laboratory support for the eradication of polio from the Americas.

Publishes a large-scale study evaluating occupational exposure to dioxin: found increased deaths among workers with high exposures.

Identifies Alaska as the state with the highest rate of annual work-related deaths; established a field office in Anchorage to address this problem.

Publishes guidelines for the clinical management of STDs and the management of clinics which provide STD care.

Releases findings of a firearm mortality study that shows that one in five deaths of teens and young adults was gun-related, and that the firearm death rates for both white and black male teenagers exceed those for all natural causes of death.

Shows striking differences in the health of the nation's racial and ethnic minorities in *Health, United States, 1990*.

Discovers *Ehrlichia chaffeensis*, the agent of human ehrlichiosis.

Isolates a novel species, *Rochalimaea henselae*, the causative agent of bacillary angiomatosis and other febrile illnesses in humans.

1992

Congress mandates a new title for the agency—The Centers for Disease Control and Prevention—but the CDC initials are retained.

CDC creates the National Center for Injury Prevention and Control to address a major public health problem accelerating in the 1990s.

Directs more than \$1.6 billion to programs designed to prevent unnecessary disease, disability, and premature death.

SOME THINGS GET MORE IMPORTANT EVERY YEAR



Please get a mammogram ...
for yourself and for those who love you.

If you are 40 or over, call now
to find out about low-cost
or free mammograms.



1-800-ACS-2345



CDC opens its Office of Women's Health to
improve women's health globally, across
generations and cultures.

Congress authorizes the formation of the National Foundation for CDC to promote the goals and objectives of the agency through endowments for fellowships, international projects, studies, and research.

CDC launches efforts to incorporate health communication into prevention program planning throughout CDC.

Forms CDC Advisory Committee to offer input to the CDC director on policy issues and strategies and to recommend ways to incorporate prevention activities more fully into health care.

Publishes *Recommendations for the Use of Folic Acid to Reduce the Number of Cases of Spina Bifida and Other Neural Tube Defects*.

Revises the HIV classification system and expands the AIDS surveillance case definition.

Publishes recommendations for prophylaxis against *Pneumocystis carinii* pneumonia (PCP) in HIV-infected adults and adolescents.

Launches "Business Responds to AIDS" Program to help large and small businesses and labor meet the challenges presented by HIV infection and AIDS on the job and in the community.

Issues *Standards for Pediatric Immunization Practices*, which are intended to ensure that children's immunizations are given at the appropriate time.

Works with the Women, Infants, and Children (WIC) Program and the Aid to Families with Dependent Children (AFDC) Program to ensure that children enrolled in these programs have received their needed immunizations.

Implements new surveillance and epidemiologic research activities to examine environmental and physiological factors associated with postneonatal deaths.

Increases support for comprehensive school health programs by providing funding to several state departments of education to address the issues of tobacco use, sedentary lifestyles, and dietary patterns that result in chronic disease among adolescents.

Provides funds to 31 state and local health agencies for the initiation and expansion of childhood lead poisoning prevention programs that screen large numbers of children, identify sources of lead poisoning among children, and provide education about lead poisoning.

Assists in hurricane-associated emergencies in Florida, Louisiana, Hawaii, and Guam.

Develops analytic method for measuring cotinine (a metabolite of nicotine) in serum. Cotinine levels indicate the amount of exposure to smoke from active smoking or from passive exposure to environmental tobacco smoke.

In cooperation with the Indian Health Service, launches a major project in Northern Minnesota and Wisconsin among the Bemidji, a Native American tribe, to reduce the risk for heart disease.

Publishes data never before available on maternal medical and lifestyle risk factors for the more than four million births that occur annually in the United States. Using an expanded birth certificate that was implemented nationwide in 1989, CDC identifies factors that pose the greatest risk to mothers and their infants.

Takes lead responsibility for developing laboratory standards that strike a balance between ensuring the quality of laboratory operations and the need to obtain access to health care.

Supports 28 state-based capacity building projects that are developing a coordinated focus for disability prevention programs, conducting surveillance in targeted disability groups, and implementing community intervention programs.

With other federal agencies and public health organizations, forms a TB Task Force to combat the problem of multidrug-resistant tuberculosis (MDR TB). Outbreaks of the disease are of great concern and make treatment and prevention efforts more costly and complex.

1993

Responds to the catastrophic 1993 Midwest flood, which had a significant impact on public health in nine states.

Collaborates with 12 other nations to prevent and control disease and injury through the establishment of field epidemiology training programs that enable these countries to improve their public health service.

Establishes the National Immunization Program to increase momentum toward higher immunization coverage and the protection of children younger than 2 years of age.

Conducted the epidemiology and laboratory studies that led to the identification of the virus responsible for the hantavirus pulmonary syndrome that killed 27 people in 12 states.

A serious outbreak of food poisoning occurs in Washington State and eventually emerges in three other states. CDC scientists confirm that the outbreak was caused by *E. coli* 0157:H7, and traces most cases of the foodborne disease to contaminated ground beef served at a chain restaurant that sells hamburgers.

Issues community planning guidance for state and local health department grantees to ensure greater community involvement in determining HIV-prevention needs and developing responsive programs.

Launches an HIV Prevention Marketing Initiative to prevent the sexual transmission of HIV among young people ages 18 to 25.

Supports the screening of more than 1.7 million children for lead poisoning and finds that nearly 75,000 children have elevated blood lead levels.

Investigates risk factors for death and injury associated with the World Trade Center explosion and fire in New York City.

Determines the DNA sequence of one complete smallpox virus genome and, in collaboration with Russian scientists, sequences parts of five other smallpox strains. This work provides a valuable archive of the virus and insight into the components responsible for its virulence.

Promotes efforts to reduce tobacco use among women and supports a variety of programs to help women stop smoking. In addition, funds 10 state programs to encourage smoking cessation during pregnancy.

Promotes national discussion on firearms as a public health issue and works to give impetus to programs that prevent death and disability as a result of violence or such unintentional injuries as automobile crashes, falls, fires, and drownings.

Funds state and local injury-control projects for preventing unintentional injuries.

Works to prevent violence among young people by scientifically determining factors that put people at risk for violence, protecting young people from violence, disseminating information about current violence-prevention programs, and evaluating potential violence-prevention interventions.

Traces outbreaks of serious illness to environmental exposures of *Cryptosporidium* in drinking water.

Recruits an EIS class of 69 officers, 52% of whom are women and 20% of whom represent racial and ethnic minorities.

Develops programs directly addressing the disproportionate burden of diabetes among blacks, and develops comprehensive community organization programs addressing diabetes as a public health problem in both rural and urban communities.

Conducts new research to examine risk factors for the high mortality rate among black infants. The black infant mortality rate is twice that of white infants, and the gap between the two groups is increasing.

1994

CDC launches the Office of Women's Health to provide leadership and focus for CDC's efforts to promote and improve the health of women and to translate scientific findings into sound public health policy and practice.

With NIH, publicizes findings and issues recommendations about the efficacy of zidovudine in reducing perinatal (mother-to-infant) transmission of HIV when the drug is given to HIV-infected pregnant women.

Funds three new studies on female-directed prevention methods for HIV/STD.

Releases the *Surgeon General's Report on Preventing Tobacco Use Among Young People*, the first report to focus exclusively on tobacco use by adolescents and young adults.

Publishes an analysis of brand preferences of adolescent smokers, the reasons for adolescent tobacco use, and symptoms of nicotine withdrawal among adolescent and young adult tobacco users in the United States.

1995

Provides \$1.6 billion to national and international public health partners for essential services in communities.

Publishes the *U.S. Public Health Service Recommendations for Human Immunodeficiency Virus Counseling and Testing for Pregnant Women*.

Strengthens the public health capacity of other nations by initiating 45 agreements and providing advisors and/or programs to two countries.

Provides distance learning courses to 130,000 participants through the Public Health Training Network.

Sponsors 215 training courses that reach more than 10,000 participants through the National Laboratory Training Network.

Establishes 10 STD/HIV Prevention Training Centers that offer short-term, hands-on STD-related training of medical and paramedical personnel; and a 2-year STD Public Health and Epidemiology Fellowship in local health departments designed to link the academic and public health sectors.

Releases the latest annual report on the health of the nation, *Health, United States, 1994*, a widely disseminated data source.

Makes a number of information resources available on the Internet, including the *MMWR* series, CDC's quarterly *Journal of Emerging Infectious Diseases*, and hazardous substances data bases.

Publishes a prevention strategy to address emerging infectious disease threats in the United States.

Establishes population-based Emerging Infections Epidemiology and Prevention Centers and physician-based Sentinel Surveillance Networks to monitor new and reemerging infectious diseases.

Conducts a multilevel program of assistance and counsel to the government of Zaire and the WHO to deal with the Ebola outbreak in and around the city of Kikwit.

Provides emergency and refugee health assistance for 81 missions in 32 countries.

Releases the first *National Estimates of Nonfatal Firearm-Related Injuries* and tracks deaths resulting from injury by firearms.

Reveals through the findings from the National Health and Nutrition Examination Surveys (NHANES) that the percentage of children with blood lead levels of concern fell from 88% in 1976-1980 to 8.9% in 1988-1989.

Collaborates with CDC's 13 Prevention Centers to develop model programs for preventing chronic disease and promoting health at the community level.

Takes a significant step forward in the planning of culturally competent and scientifically sound HIV prevention services that specifically address unique community needs.

Publishes a comprehensive report measuring youth risk behaviors that results in recommendations to modify existing programs, and that informs state policymakers.

Funds HIV prevention activities for approximately 145 community-based organizations to reach teenagers and others not in school who may be at high risk for HIV infection.

Releases *Adolescent Health: State of the Nation—Pregnancy, Sexually Transmitted Diseases, and Related Risk Behaviors Among U.S. Adolescents*, to provide educators and health professionals with information to plan and improve comprehensive school health programs and other interventions to reduce rates of unintended pregnancies, STDs, and related risk behaviors among adolescents.

Establishes the Office of Communication to improve public health efforts at every level of community.

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