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CDC's 60th Anniversary: Director's Perspective --- David J. Sencer, M.D., M.P.H., 1966--1977

Change, national and international, was the engine that thrust CDC into its third decade (1966--1975). Starting the decade as the Communicable Disease Center, it ended the decade as the Center for Disease Control as part of the Public Health Service (PHS) under the U.S. Department of Health, Education, and Welfare (HEW) ([Box](#)).

By 1965, CDC had become a national resource in communicable disease control, serving its primary constituency, state and local health departments, through technical assistance, loan of personnel, and grants in aid. By then, the Epidemic Intelligence Service (EIS) was firmly entrenched as the nation's major source of trained epidemiologists. CDC laboratories were recognized as gold standards in microbiology, clinical chemistry, and toxicology. Programs to assist states in the control of vaccine-preventable diseases, sexually transmitted diseases, and tuberculosis were functioning well. However, only 1 year later, events in the United States and abroad forever changed the scope of CDC's public health responsibilities. These events transformed CDC into a major contributor to global health programs and broadened its domestic responsibilities well beyond communicable disease.

Global Health

In 1966, CDC inherited one disease-eradication program that was faltering and initiated another that led to the first and only worldwide eradication of a disease. The first program targeted malaria. In 1966, malaria activities of the U.S. Agency for International Development (USAID), in support of the World Health Organization (WHO) Malaria Eradication Program, were falling short of their goals. The basic premise of the WHO program was that malaria could be eradicated by control of its mosquito vectors using indoor spraying with DDT. Obstacles to this goal included inadequate surveillance, lack of research, corruption and waning support in the countries involved, and insufficient training of health-care workers.

CDC spearheaded efforts to include more effective surveillance and research, improve training, and instill good management practices into country programs in cooperation with their national health authorities. Under the leadership of Donald Schliessmann and Robert Kaiser, CDC changed the focus of malaria activities from eradication to control of death and morbidity (*I*). Today, nearly 40 years later, CDC is recognized as a leading force in the global fight against the disease, focusing on evaluation of methodology, surveillance, and field research through its stations in Kenya and Guatemala, and collaborating with USAID and WHO on the President's Malaria Initiative and the Roll Back Malaria program.

The second global challenge was smallpox. CDC envisioned a smallpox eradication program, based on efforts begun by CDC's Alexander Langmuir and D.A. Henderson, for 20 countries in West and Central Africa. CDC agreed to a request from USAID to assist in a measles-control program in the area on the condition that the program be combined with smallpox eradication. This arrangement was supported by USAID, which agreed to fund the program. Henderson was assigned to WHO headquarters to head the global effort, and J. Donald Millar led CDC's efforts in West Africa.

To prepare for their field work, epidemiologists and operations officers were trained in smallpox epidemiology, clinical aspects, and vaccine properties; they also received French language instruction and lessons in motor vehicle repair. They embarked on a program that demonstrated that smallpox eradication was possible, but only if the standard approach was altered drastically. Although original plans had called for mass vaccination, CDC staff in Nigeria demonstrated that eradication was best achieved by surveillance and containment of local outbreaks (2). The last case of smallpox in West Africa was reported in 1970; the program was successful, under budget, and a year ahead of schedule. Technology and supplies were vital to the effort; however, more important was the ability of CDC staff members to establish collegial relations with their counterparts in the countries in which they worked, motivating them to assume responsibility and leadership. This ability has proven indispensable and remains a key to CDC's successful global activities (3).

The expertise gained in Africa served as a major resource for WHO in the two countries that posed the greatest obstacle to global smallpox eradication, India and Bangladesh. In addition to full-time staff assigned to both countries, hundreds of CDC staff members served short-term assignments in India and Bangladesh. The last known case of naturally acquired smallpox in the world occurred in 1977 in Somalia ([Figure](#)).

A manmade disaster affecting an African nation's health led CDC into the new areas of disaster relief and nutritional health. In 1968, civil war in Nigeria caused a disastrous famine in parts of that country. The International Committee of the Red Cross and, ultimately, the U.S. Department of State, requested that CDC assist in determining the extent of the famine in eastern Nigeria. Epidemiologists and operations officers immersed themselves in surveillance and the design of programs to combat malnutrition. CDC's Karl Western was secretly airlifted by the Department of State into the secessionist state of Biafra to investigate the famine there; he found the highest recorded prevalence of severe malnutrition since the Netherlands Potato Famine of 1945 (4). CDC's experience in these two new areas of disaster and nutrition would later be put to use both domestically and globally. Such international activities are not without risk. Paul Schnitker, an EIS officer in the class of 1969 who was enroute to Nigeria to aid in the famine activities, was killed when his aircraft failed to land safely at Lagos.

Broadened Domestic Horizons

In contrast to its sudden and dramatic entrance into global health, CDC's venture into broader domestic activities was more gradual. In 1970, CDC's involvement in these activities led to its renaming as the Center for Disease Control. Many of the new programs were described by Langmuir, the "father of EIS," as the "EIS diaspora" (5).

Langmuir had long been concerned about overpopulation. He saw the CDC approach to communicable disease control as adaptable to evaluating family planning programs. CDC supported his decision to assign an EIS officer, Nicholas Wright, to evaluate the family planning program at Grady Memorial Hospital in Atlanta, Georgia. Investing even a single person's time in this field was initially controversial. However, from this small beginning, CDC's multidisciplinary reproductive health program grew to eventually encompass not only family planning but also maternal and child health.

An epidemiologic investigation of clusters of leukemia cases in the 1960s led to establishment of leukemia surveillance at CDC in 1966 (6). This and other early investigations of noninfectious disease clusters led to

discovery of small clusters of birth defects; CDC's leukemia surveillance activities were broadened to include them. Birth defects surveillance and research led to recognition of the role of folic acid in the prevention of spina bifida and ultimately to the mandatory inclusion of folic acid in many of the nation's cereal grain products in 1998.

Experience with the famine in Biafra provided a basis for establishment of a CDC nutrition program. In 1969, Congress authorized a nutrition survey in 10 states to determine the true extent of malnutrition in the United States. The PHS-administered nutrition program requested assistance from CDC to analyze the data and write the required report to Congress. CDC agreed under the condition that it be allowed to assume responsibility for the entire public health nutrition program. This agreement inaugurated the first nutrition program at CDC. Staff members who had been in Nigeria during its civil war evaluated the 10-state survey data and wrote the report to Congress. The program has continued to grow with realization of the major role of nutrition in disease prevention.

In 1972, CDC had another opportunity to consolidate PHS prevention activities into one agency. PHS wanted to recognize the role of health education in preventing disease. CDC proposed taking on that role through the transfer of HEW's Smoking and Health Program to CDC. This would provide a foundation on which to develop expertise in health communications regarding the major causes of death and disability. This approach was gradually adopted throughout CDC and provided the basis for the widespread recognition of the role of behavioral scientists in CDC's prevention mission (7).

The final building block in the consolidation of preventive health services was the addition of programs related to the environment. In the 1960s, epidemiologic investigations related to environmental contamination and toxicologic laboratory testing were conducted by CDC, but prevention programs related to environmental health were housed in other parts of PHS. In 1973, the National Institute for Occupational Safety and Health was transferred to CDC, as were community environmental activities relating to lead exposure and rat control. These programs benefited by being incorporated into an agency that considered surveillance, investigation, and corrective action as the foundation of successful prevention programs.

This brief historical comment does not give due attention to the many major outbreaks and investigations and to the evolution of public health science during the era described. Concern over hospital-acquired infections led to the major undertaking of the Study on the Efficacy of Nosocomial Infection Control (SENIC) to prove that reduction in such infections was not only life saving but cost effective (8), which provided a scientific foundation for 21st-century efforts such as the 100,000 Lives Campaign (9). Legionnaires disease put CDC on the front page of newspapers for weeks (10) and foreshadowed CDC's comprehensive response to emerging infections. The Tuskegee syphilis study led to the establishment of programs to protect human subjects in research (11) and a formal apology by the U.S. government in 1997. The swine flu vaccination program demonstrated the possibility of organizing and managing an immunization program involving procurement, distribution, liability issues, and adverse event surveillance while vaccinating 43 million persons in 2 months (12). Lessons learned by CDC during the 1976 swine flu vaccination program are being used to improve preparedness for pandemic influenza.

This third decade of CDC history might be summarized as establishing a firm foundation for what would become the nation's disease prevention agency.

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Figure

FIGURE. The last known case of smallpox in the world was in this man aged 23 years in Somalia in 1977



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[Return to top.](#)

Box

BOX. Selected milestones and events in public health that occurred during CDC's 60-year history

1946	Communicable Disease Center established from the World War II agency, Malaria Control in War Areas.	1980	CDC name changed to Centers for Disease Control, reflecting new organization.
1949	Last case of smallpox in the United States.		Congress creates the Agency for Toxic Substances and Disease Registry, which becomes a "sister agency" to CDC.
1951	Epidemic Intelligence Service (EIS) founded.		<i>MMWR</i> reports on Reye syndrome associated with aspirin use.
1953	First EIS assistance for environmental exposure (trichloroethylene) and occupational exposure (anthrax).		Toxic shock syndrome associated with tampons.
1955	Inactivated polio vaccine licensed; "Cutter incident" investigated.	1981	First AIDS cases reported in <i>MMWR</i> .
1957	Onset of "Asian flu" influenza pandemic.	1986	Office on Smoking and Health becomes part of CDC.
1961	<i>MMWR</i> moved to CDC from National Office of Vital Statistics.	1987	National Center for Health Statistics added to CDC.
1962	First EIS assistance for chronic disease (leukemia cluster).	1988	Center for Chronic Disease Prevention and Health Promotion established at CDC.
1964	Advisory Committee on Immunization Practices (ACIP) holds first meeting. First Surgeon General's Report on Smoking and Health.	1992	CDC name changed to Centers for Disease Control and Prevention. National Center for Injury Prevention and Control added to CDC.
1966	Global smallpox eradication effort begins.	1993	Hantavirus pulmonary syndrome recognized in southwestern United States.
1968	Onset of "Hong Kong flu" influenza pandemic.	1994	Vaccines for Children Program established.
1970	CDC name changed to Center for Disease Control.	1996	Prevention Effectiveness Program and Guide for Community Preventive Services initiated.
1973	National Institute for Occupational Safety and Health becomes part of CDC. First EIS assistance for injury (homicide in Georgia). First Environmental Protection Agency standards to phase out lead from U.S. gasoline.	1997	Cardiac valvulopathy associated with fenfluramine (fen-phen). H5N1 avian influenza outbreak spreads to humans in Hong Kong.
1975	First Field Epidemiology Training Program (Canada).	1998	Cereal grain enriched with folic acid by federal mandate.
1976	Legionnaires disease investigated; etiologic agent identified. Guillain-Barré syndrome associated with swine influenza vaccine. Ebola virus identified in Zaire and Sudan.	1999	West Nile virus identified in New York City.
1977	Last case of endemic smallpox in world reported from Somalia.	2001	CDC responds to World Trade Center and bioterrorist anthrax attacks. National Center on Birth Defects and Developmental Disabilities formed at CDC.
1978	CDC opens maximum-containment laboratory. National health objectives for 1990 initiated at CDC.	2003	Severe acute respiratory syndrome (SARS) coronavirus identified.
1979	Last case of endemic poliomyelitis caused by wild poliovirus in the United States.	2005	CDC responds to Hurricanes Katrina and Rita.
		2006	ACIP recommends 15th and 16th routine immunizations for children and adolescents (rotavirus and human papillomavirus vaccines, respectively).

[Return to top.](#)

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