



This Special Edition of *Dateline: CDC* Celebrates an Institution and an Individual.

The Commissioned Corps of the Public Health Service was established by Congress on Jan. 4, 1889, to prevent the interstate transmission of diseases. Today, Commissioned Corps officers work for all seven agencies of the Public Health Service.

Dr. Joseph Mountin, himself a Commissioned Corps officer, envisioned in 1946 the "Centers of Excellence" that turned a wartime malaria control effort into today's Centers for Disease Control which combines talents of the Commissioned Corps with those of its civilian employees. These stories illustrate some of their combined disease fighting efforts.

Joseph Mountin, M.D. Envisioned CDC



On October 27, 1992, the name of the Centers for Disease Control (CDC) was changed to the Centers for Disease Control and Prevention. The acronym continues to be CDC.



A 1918 poster in a Cincinnati trolley car during the Spanish influenza pandemic which killed millions worldwide.



The Disease Detectives

Life "Without a Plan of One's Own Making"

In his account of his many years as a Commissioned Corps Officer with the U.S. Public Health Service in the late 1890s and early decades of the 1900s, Dr. Samuel Grubbs wrote:

Once with the government, I had plans aplenty—all originating in Washington. For my life, from that time until my retirement 37 years later, was given over to frequent change 'by order' [of the surgeon general] with new places to live, new jobs to be performed, new friends, new associates, new foods, new social customs. This book should be a testimony of how interesting a life can be without a plan of one's own making.

Grubbs' description is one with which many Commissioned Corps officers, even today, can identify. It could also apply to Epidemic Intelligence Service (EIS) officers, most of whom are in the Commissioned Corps. Each year, the 50-65 men and women who sign up for two-year stints with the CDC's EIS literally sign up for two years "on call."

EIS officers in the line of duty have traveled by dog sled in Alaska, paddle boat in Bangladesh and packhorse in the Andes. They rode elephants and camels in India, a helicopter over a bubbling crater at Mount St. Helens, and a military fighter in the states (to deliver botulism antitoxin when a regular jet wasn't immediately available). Antarctica is the only continent which has not been visited by EIS officers "by order of the surgeon general."

EIS officers have battled malaria in Georgia, cholera and typhoons in Bangladesh, smallpox in India and Africa, and Pontiac fever in Michigan. An EIS officer boarded a gun-runner during Biafra's civil war to do a nutritional assessment behind guerrilla lines. Another set up a high security laboratory for study of the lethal Lassa fever under primitive conditions in Sierra Leone. "Nosocomial" took on new meaning when three former officers led EIS investigations of mysterious hospital deaths that resulted in murder charges against nurses.

Dr. Alexander Langmuir, creator of the EIS in 1951 and its mentor ever since, coined the term "disaster manpower" to describe the job of this corps. Dr. Philip S. Brachman, who directed the Epidemiology Program Office (EPO) for 11 years, adds, "It isn't just the known dangers—the hemorrhagic fevers, the rabies in bat caves, the plague. Anybody going out into a situation where the cause of disease is unknown is facing potential danger—the danger of the unknown. In this sense, the EIS officer always faces danger."

The ability to be objective in an emergency is not so much a gift as a skill, one honed through CDC training and field work.



Alexander Langmuir, M.D. EIS Creator



Former CDC Public Health Officer Tony Masso at work in Niger, late 60s

EIS officers work under a set of restrictions that Langmuir has described as being "compassionately enforced [but] rarely relaxed."

• First, an EIS officer must be on call for epidemic aid duty "at all times."

• Second, in an emergency, any officer can be called to duty "by order of the surgeon general." Each officer is to expect to be called more than once a year.

• Finally, each officer is to take part in special conferences and training courses, "as deemed necessary."

This results in separations from families, friends, and the familiar. Professionally, it means that physicians—who have represented 84 percent of the EIS over the years—have little or no opportunity to enhance their clinical skills during their EIS years.

Another caveat would have to be visibility. So many EIS investigations become newsworthy that handling the media is now a separate subject in the EIS training course. A certain tedium goes with the territory in any epidemic investigation—the questionnaires, the statistical analyses, the digging into details. (However, two staff members in EPO have developed a computer package, *Epi Info*, that has lightened these tasks considerably.)

disease . . . is farther on the road to being cured when it breaks forth from concealment and manifests its power.

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-Seneca [4? B.C.-A.D. 65]

Though rarely discussed outside CDC, EIS officers do have a weakness, a predisposition, a unique susceptibility. As Langmuir put it:

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The hardy ones who remained [in CDC] were thus adventuresome, willing to explore and travel, interested in infectious diseases, and at least susceptible to an epidemiologically related career.



Jeffrey Koplan, M.D. (right) EIS class of 1972, in search of smallpox, Bangladesh, 1973

Epidemiology gets in your blood. Not just the science of it, nor the sleuthing of it, but the service in it.

When you have helped set up clean water sources in remote African and Indian villages; eliminated naturally circulating poliomyelitis in the United States; helped unravel the epidemiology of such diseases as hepatitis B, Reye syndrome, and AIDS; or helped eradicate smallpox from the world, what do you do to top the experience?

The EIS answer to the question has been to define new territories in which to demonstrate success. Some of these territories are geographical. Former and current EIS officers are among those deeply involved in the worldwide efforts to eradicate polio and dracunculiasis . . . to vaccinate children throughout the world against the other vaccine-preventable diseases . . . and to solve malnutrition problems in the Third World.

But CDC is also breaking new ground. Epidemiological tools are now being applied to violence, for example. Clusters of teen suicides have been identified and studied for clues that could prevent further occurrences. The effect of lifestyle behaviors (e.g., diet, exercise, smoking) can be charted into health risk appraisals. As a result, citizens can now readily determine how they can prevent unnecessary disease and disability.

The careers that former EIS officers take after service are varied. Over one-third have remained in government service. Twenty-one have become state epidemiologists; six, state health officers; two, directors of CDC; and one, assistant secretary for health. Another 27 percent have become university faculty. Two, to date, have been university presidents.

But wherever they practice, they carry with them this unique susceptibility—not just to epidemiology, but to service.

Early Days of the PHA Program "Ready to Go!"

It was Dr. Johannes Stewart, a special assistant in the Washington, D.C.-based Venereal Disease (VD) Program, who had the idea for a new public health career series to help the VD control program after World War II.

To prevent returning soldiers from seeding syphilis in the community as had happened after the First World War—the federal government had funded an extensive VD program, making it the largest part of the Public Health Service.

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Disease often tells its secrets in a casual parenthesis.

-Wilfred Trotter [1872-1939]

Stewart envisioned a corps of college graduates, management oriented, non-medical men who were to become public health advisors (PHAs).

"There weren't a lot of people convinced. . .that you could recruit people to do this kind of 'dirty' work from a college graduate pool," an early PHA recalled. But, over opposition, Stewart got permission to hire six men in July 1948 for a pilot project.

After several weeks of training, including interviews with syphilis patients in the Washington, D.C. area, they were sent off on a public health assignment: a new approach to syphilis control, which included interviewing and contact tracing. Their location: the Eastern Shore of Maryland.

The experiment worked. The first six were subsequently assigned elsewhere. More young men were recruited and assigned to run syphilis rapid treatment centers throughout the country. Others went to local health departments. Wherever the location, their functions were similar: testing new ways of interviewing syphilis patients; locating contacts; conducting blood screening for syphilis; follow-up of the first penicillin-treated patients (the so-called Blue Star field study).

The weeding-out process for new candidates was rather creative. Here's how one early PHA, Pete Campassi, recalls this process:

In South Carolina when I came in ... they figured out how to weed us out in a hurry. They would send you off to the rapid treatment center in Florence, S.C., the first two or three days you were in the program, in the middle of the summer, in a hot hospital, military barracks. And the first day, they'd take you into a room where a person was being examined for granuloma inguinale. Those that didn't pass out stayed in the program. Tact and discretion were actually hallmarks of the PHAs in all of their work. They needed it when they went to churches and bars in the rural South, for example, to urge patrons to get syphilis screening tests. They needed it to convince homosexuals to name their contacts during later VD control efforts.

The trust built up between the homosexual community and the PHAs then was valuable years later as other venereal diseases, hepatitis B, and AIDS became endemic.

As Joe Giordano, a PHA who joined in 1951 and served for many years at CDC, recalls, "We accumulated a fund of experience that would be used later when the PHA program branched out from STDs (sexually transmitted diseases)."

That officially occurred in 1957 when the program was incorporated into CDC in Atlanta. Not everyone was thrilled with the move from



Tact and discretion are hallmarks of community disease prevention work

Washington. Recalls William C. Watson Jr.—who would later hold the highest ranked job at CDC to be held by a PHA—deputy director:

Here was this proud, old program that had been the largest thing in the Public Health Service not too many years before being subsumed into that upstart young outfit in Atlanta that no one had ever heard much about at that point. Indeed, there were as many PHAs in those days as the rest of CDC (500 of each) and the STD budget exceeded CDC's by \$1 million.

PHAs still constitute a considerable portion of CDC's staff. Their job series, GS 685, has more employees than any other. Many PHAs served as operational officers in the international campaign which eradicated smallpox.



Management became their main function. PHAs are regularly pulled from their regular assignments to help EIS officers in outbreaks, serve in international campaigns and in other emergencies, such as the Three-Mile Island nuclear accident, the Mount St. Helens volcanic eruption, and the resettlement of Southeast Asian refugees.

### **Social Diseases and Public Health** *Tackling Taboos*

There is a "Shadow on the Land," a disease, usually fatal, that has become widespread in our people. The burden is borne excessively by our poor and minorities. They contract it in their youth through their personal behaviors and practices that put them at high risk.

Upon contracting this disease, it is often years before symptoms occur. They don't realize



that time bomb they are incubating, the suffering to come. Once symptomatic, the victims are likely to die of the disease or its complications years before their time.

> - Shadow on the Land Thomas Parran (On Syphilis)

On June 5, 1981, the Centers for Disease Control published what would be the first report on AIDS. Its title: "*Pneumocystis* pneumonia—Los Angeles."

That report caused a deluge of phone calls (and additional case reports) to CDC and was instantly recognized by the scientific community as a significant medical event. However, AIDS (as it would later be called) only became a major news story later.

Six years into the epidemic, in 1987, a science reporter, Laurie Garrett, then with National Public Radio, gave an address on reporting about AIDS.

"I've never before felt such pressure for accuracy and sensitivity," Garrett said.

Not the least of Garrett's problems in covering AIDS was trying to communicate within the constraints of broadcast media's standards and practices:

Most of us are. . .limited in the language we can use to describe sexually transmitted diseases. It took three years for me to convince my editors that we could say 'rectum' and 'rectal intercourse' on the morning news. The laws of the Federal Communications Commission make it possibly illegal for us to describe safe sex explicitly on the air. There is a Los Angeles radio station currently in court because it did just that. In this atmosphere codes were invented-'bodily fluids' (for semen) and 'exchange of bodily fluids' (for intercourse).

Thus, AIDS challenges our ability to communicate precisely in the

media. But it is not the first such challenge faced by the Public Health Service.

One of the first—with its parallels to the current AIDS education effort—was Surgeon General Thomas Parran's campaign in the 1930s to break what was then termed the ''conspiracy of silence'' about syphilis.

Harvard Professor Allan M. Brandt, who has written about the two campaigns, notes that AIDS and syphilis share several features: sexual transmission, severe pathological consequences, and patients who are highly stigmatized. Both cause a great deal of fear—sometimes panic—in public.

At the turn of the century, 10 percent of the population had syphilis. One in three beds in mental institutions was occupied by a person with syphilis.

By World War I, concern about the disease had reached "unprecedented heights." More than 20,000 prostitutes were quarantined. Thousands more were put in prison. Soldiers lined up for disinfection and were dishonorably discharged if they contracted syphilis. Posters urged soldiers to remain "physically fit and morally clean."

# **G**n the Prevention Trail

When Dr. Frederick McKay, a recent dental school graduate, arrived in Colorado Springs, Colo. from the east in 1902, he was astonished to find scores of natives with grotesque brown stains on their teeth, stains often as dark as chocolate.

The medical literature made no mention of the mysterious condition known locally as Colorado Brown Stain. Local residents blamed the problem on such diverse factors as eating too much pork, drinking inferior milk, or the calcium rich local water.

McKay decided to investigate further. In 1909, he persuaded renowned dental researcher G. V. Black to come to Colorado and collaborate with the Colorado Springs Dental Society on a study.

When Black arrived he was shocked to discover that almost 90 percent of the locally born children had signs of the brown stains. "I



G.V. Black Dental Pioneer (Courtesy of Northwestern University Dental School)



Frederick McKay, D.D.S. Dental Pioneer (Courtesy National Institutes of Health)

found it prominent in every group of children," he later wrote.

Further investigation by McKay and Black led to the discovery of fluorosis, or mottled tooth enamel, in several Western states. This condition was later linked to high concentrations of naturally-occurring fluoride in the water supply.

The epidemiology of fluorosis became the subject of a 1931 investigation by Commissioned Corps dentist, Dr. H. Trendley Dean, the first dental officer at the newly established National Institute of Health. Later, Dean became the first director of the National Institute of Dental Research.

Dean's research showed that mottled enamel was not only national in scope but it confirmed the cause—fluoride. But, perhaps more importantly, the research provided the first solid evidence



H. Trendley Dean, D.D.S. Dental Pioneer (Courtesy National Institutes of Health)

correlating the amount of fluoride in drinking water with lack of tooth decay. One part per million of fluoride in water would not cause fluorosis but it would protect against decay, Dean showed. Dean's findings led to the first controlled study of community fluoridation of drinking water begun in Grand Rapids, Mich., in 1945. During the 15-year project, researchers kept tabs on tooth decay rates for 30,000 children. The Grand Rapids study yielded a scientific breakthrough in just 11 years—the rate of cavities in children dropped 60 percent. This discovery revolutionized dental care, making tooth decay for the first time preventable for most people.

As a result of the McKay, Black, and Dean studies, fluoridation of community water supplies protects over 200 million Americans. Almost every toothpaste contains fluoride. And 13 million school children participate in school-based flouride mouth rinse programs.



Some moments in history are only recognized as great in retrospect. Such, however, was not the case with the publication of the first Surgeon General's Report on Smoking and Health. Its impact was expected to be so big that it was released on a Saturday morning to minimize any unforeseen reaction.

The year was 1964. President John F. Kennedy had been assassinated just two months before. The press conference to release the report was called for 9.a.m. in a small but secure auditorium in the State Department building. The accredited press representatives were locked in.

Surgeon General Dr. Luther L. Terry and his advisory committee took their seats. Copies of the 387-page, marbled brown, paperback report were distributed and the reporters were given 90 minutes to study it. Once all of their



Luther L. Terry, M.D. Surgeon General

questions were answered, the doors were opened, and the reporters dashed for the phones.

News from that first report on smoking dominated the nation's news for days. The report's release was one of the year's top news stories.

Based on a review of over 7,000 published articles on smoking and health, Surgeon General Terry's report extensively documented what had been suspected for almost 400 years and concluded:

Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action.

Given the significance of nearly unanimous expert medical opinion for the nation, Congressional action was swift.

Laws passed in 1965 and 1969 required a health warning on cigarette packages, banned cigarette advertising on television and radio, and called for making the *Report on the Health Consequences of Smoking* a January tradition.

In the 25 years since Surgeon General Terry's press conference, the subsequent reports have found that:

• Smoking is associated with cancers of the lungs, oral cavity, esophagus, and uterine cervix;

• Cigarette smoking is one of the three major independent causes of coronary heart disease;

• Cigarette smoking is a major cause of cerebrovascular disease (stroke);

• Smoking is the major cause of chronic obstructive lung disease;

- Nicotine is addictive;
- Even involuntary smoking causes
- ill effects on those near smokers;
- Maternal smoking is associated with having low birth weight babies;

• Oral contraceptives increase the harmful effects of smoking on the cardiovascular system;

• Even smokeless tobacco can cause cancer in humans.

The ashtray is following the spittoon into oblivion.

-C. Everett Koop, MD, ScD former Surgeon General

The surgeon general's annual report is no longer limited to a scientific discussions of the clinical consequences of smoking. Today, it reviews the best of the smoking cessation and prevention programs.

Reading the old reports provides a chronicle of social change as cigarette smoking moved from "chic" to "shunned" behavior, as former Surgeon General Dr. C. Everett Koop has phrased it.

By mid-1988, more than 320 local communities had adopted laws or regulations restricting smoking in public places, according to the latest surgeon general's report.

### Polio in the United States and Around the World A Crippling Scourge of the Past

Acute poliomyelitis is a serious and highly visible public health problem in much of the world. Each year, more than 250,000 paralytic cases occur worldwide.

In the United States, however, disease caused by endemic wild polioviruses has been eliminated, largely due to widespread vaccination of susceptible children with effective vaccines. How?

The first large-scale outbreak in the United States occurred in Vermont in 1894. Epidemics continued periodically over the next 20 years. Soon, polio (as it is commonly known) ranked among the most common afflictions of the central nervous system. R. H. Berg described an epidemic in New York City in 1916:

Long, impatient queues gathered at railroad and ferry ticket windows. Thousands of parents urged their children through turnstiles to crowded ferries and trains, seeking to leave a city seemingly beset by some biblical disaster. Only a few could escape, for there were guards at the city's gates, stolidly turning back those who could not show signed certificates proving that they were free of the devastating germs.

In 1938, the President of the United States, Franklin Delano Roosevelt—himself a victim of paralytic poliomyelitis—set up the National Foundation for Infantile Paralysis.

To fund it, comedian Eddie Cantor suggested that the slogan "March of Dimes" be used in a campaign in which radio stations would ask listeners to send their dimes directly to the president.

The Nobel prize-winning scientific work of John Enders, Thomas Weller, and Frederick Robbins made possible the development of vaccines against polio. It came at an opportune time as large-scale polio outbreaks occurred in 1944, 1946, and 1949-51. The peak incidence was a year later—58,000 cases (37 per 100,000 population). At least 20,000 people were left with residual paralysis—3,100 died.

Dr. Jonas Salk, of the University of Pittsburgh School of Medicine, developed a candidate vaccine using inactivated polio virus.

The test of its safety and efficacy came in 1954 when some 1.8 million children participated in the so-called Francis Field Trial, the largest clinical trial ever conducted. The results indicated that the vaccine had a protective efficacy of 60-90 percent. Amid considerable fanfare, the vaccine was licensed that very afternoon.

Within only two weeks after licensure, after hundreds of thousands of doses of the vaccine had been administered to young children, dozens of them developed paralytic disease.

CDC was called in. Had it not been for the alertness of Dr. Alexander Langmuir, and his EIS staff, more cases would have occurred. EIS officers traced the outbreak to a few lots of vaccine that had been produced by Cutter Laboratories and which contained live virus. These lots were identified and recalled. And the immunization program was resumed.

More than 450 million doses of polio vaccine were distributed over the next four years: the incidence of polio declined from 18 cases per 100,000 to less than two per 100,000 population. Vaccine efficacy was estimated at 90 percent or greater.

A resurgence of polio in 1959-60 prompted great interest in the oral live polio virus vaccine developed by Dr. Albert Sabin, at the University of Cincinnati. The vaccine was licensed in 1961-1962.

"Sabin Sundays" were organized by health departments and local medical societies in many cities; some 100 million doses of the new oral vaccine were given in this manner between 1962 and 1964. Sabin's vaccine soon supplanted Salk's in routine vaccination



E.I.S. Officer evaluates patient for polio

programs for young children.

The marked reduction in the incidence of polio since 1955 is the result of widespread use of both Salk and Sabin polio vaccine. In 1988, the U. S. cellebrated its ninth consecutive year with no reported cases of endemic wild virus polio. In May 1988, the World Health Assembly called for global eradication of poliomyelitis by the year 2000. U. S. technical and financial support was announced at the 42nd World Health Assembly in May 1989.



A group of child health experts meeting in Talloires, France, March 13, 1988, declared:

"The eradication of poliomyelitis would, with the eradication of smallpox, represent a fitting gift from the 20th to the 21st century."

### Pursuit of a Killer: Legionnaires' Disease

August, 1976—Newspapers across the nation carried headlines about an explosive outbreak of pneumonia that had resulted in over 30 deaths. Most of those afflicted had attended an Arnerican Legion convention at Philadelphia's Bellevue Stratford Hotel.

The cause of the mysterious pneumonia was unknown and continued to elude scientists after several months of intensive laboratory and epidemiologic investigation.

The cause of the outbreak had CDC scientists puzzled. Ruling out many possible agents—viruses, heavy metals, toxic organic substances—scientists concentrated on looking for a bacterial agent—though it was believed to be a scientific long shot.

One CDC scientist, Dr. Joseph McDade, was undeterred by the fact that preliminary tests—plus all bacteriology and pathology accumulated since the beginning of the century—pointed away from this agent's being a bacterium.

In August, McDade performed tests to determine if the causative agent was a rickettsia, a very small bacterium transmitted to man by lice, fleas, ticks, and mites; they can only be grown outside the body in embryonated eggs or tissue culture.

Using specimens of lung tissue from guinea pigs infected with post mortem lung tissue from diseased patients, McDade did not find rickettsiae—only a small bacterium considered to be an extraneous



Joseph McDade, Ph.D. (left) and Charles Shepard, M.D. (right)

contaminant. But the inoculated guinea pigs became ill. And by December, McDade was suspicious of the small, rod shaped organisms that kept appearing in microscopic examination of their spleen tissue.

McDade, and the director of his laboratory, Dr. Charles Shepard, tried to cultivate the organism. They thawed spleen tissue from the guinea pigs which had been stored from August to December and inoculated some of that tissue into embryonated eggs. Finally, when the eggs died five to seven days later, they were teeming with bacteria.

Using the indirect fluorescent antibody test, McDade and Shepard found that 90 percent of the convalescent Legionnaires' samples tested reacted with the agent found in the egg. No control samples reacted. This indicated that the isolate was the etiologic agent.

The bacterium was ultimately named *Legionella pneumophilia* after the Legionnaires in Philadelphia.

Since then, the organism has been implicated in other unexplained outbreaks stretching back many years, suggesting that the bacterium is neither new nor localized.

Legionella pneumophilia can survive for months in tap water or distilled water and epidemiologic evidence supports airborne, but not person to person, transmission. Air conditioning cooling towers—such as were found at the aging Bellevue Stratford—or evaporative condensers were implicated as breeders of the bacteria.

### The Surgeon General's Conferences on Occupational Health

Occupational disease is a peculiarly sinister source of human misery. It is also an inexhaustible one. . . The scope of occupational disease is vast almost beyond calculation. . . It comes, in fact, unpleasantly close to being the major public-health problem of our time, and is probably the most permanent.

### -Berton Roueche

The recognition that work can cause disease and disability may be as old as mankind. But the belief that government should try to prevent occupational afflictions is not. The Public Health Service (PHS) played an integral part in this shift in perception.

The year was 1925. For the past two years, newspapers, particularly *The New York World*, had been carrying stories about cases of severe poisoning among chemists and other workers.

The source of the poisoning: tetraethyl lead, a new compound used in gasoline as an antiknock agent. Within 17 months of its first manufacture in the United States, 139 cases of poisoning occurred; 13 people were dead.

In her autobiography, Dr. Alice Hamilton, a pioneer in industrial toxicology (she was the first U.S. physician to devote her career to occupational safety and health), describes the effects of this poison on the body:

... it is more quickly absorbed than any of those ordinarily used in industry and concentrates in the central nervous system, causing insomnia, excitement, twitching muscles, hallucinations like those of delirium tremens, even maniacal attacks and convulsions, and death.

It was a true emergency, one met by then-Surgeon General Dr. Hugh S. Cumming. On May 5, 1925, he requested the industry to discontinue temporarily the manufacture and distribution of tetraethyl lead. Industry complied. On May 20, Cumming called a conference to discuss the problem. Attending were industrialists, chemists, representatives of labor and physicians. They named an expert committee to recommend ways to prevent poisoning from tetraethyl lead.

A case-control study of 252 persons led to conclusion that the hazards of this form of lead could be prevented by mechanical devices.

When Surgeon General Cumming held another conference in 1926, the first cooperative agreement on toxic substances was reached.

The agreement included restrictions on the use and handling of tetraethyl lead. These regulations were subsequently administered by the Office of Industrial Hygiene and Sanitation (OIHS), the predecessor of National Institute of Occupational Safety and Health (NIOSH).

As a result, several states made lead poisoning a reportable disease; reporting continued until World War II.

These conferences were so successful that they became the model for another one, in 1928, on the health hazards of radium dial painting. Radium was also a new poison. It was used to make the luminous dials on watches and clocks. The habit workers had of pointing the tips of the brushes with their lips led to numerous fatalities.

So successful were these early conferences that a total of 10 were ultimately held—the last in 1941. They concerned methanol, carbon tetrachloride and similar volatile chlorinated liquid hydrocarbons, carbon tetrachloride fire extinguishers, aniline oil, carbon



Alice Hamilton, M.D. Pioneer in Industrial Medicine

disulfide, benzol, occupational cancer, and chronic mercurial poisoning in the hatting industry. Eight resulted in agreements between the chemical industry including labor, where appropriate and PHS.

Wrote Hamilton: ". . . it was to me both surprising and heartening to see men of such widely separated backgrounds and interests manufacturers and their chemists and research workers on one side, trade-union officials, independent physicians, and toxicologists on the other — meet in a spirit of reasonableness and a genuine desire to get at the real facts and deal practically with the problem."

1989 marks not only the 100th anniversary of the Commissioned Corps but also the 75th anniversary of NIOSH.

Begun in 1914, OIHS was part of the Division of Scientific Research, PHS, U.S. Treasury Department.

Today, it is part of the Centers for Disease Control.

This edition of *Dateline: CDC* was written by Anne Mather and edited by Mary Guinan, M.D., Ph.D., assistant director for science.