Centers for Disease Control and Prevention CDC 24/7: Saving Lives. Protecting People.™ Morbidity and Mortality Weekly Report (MMWR)

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A History of MMWR

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MMWR was established to disseminate the results of public health surveillance and owes much of its existence to the founder of modern surveillance, William Farr (1807--1883). In 1878, under the sway of Farr, Lemuel Shattuck, and other pioneers of surveillance, the U.S. government created the first precursor of *MMWR* and entered the business of publishing surveillance statistics. Farr's influence touched *MMWR* again in 1961 when one of his adherents, Alexander D. Langmuir (Figure 1), brought *MMWR* to Atlanta and CDC from a federal office in Washington, D.C. (1). Since its beginnings, *MMWR* has played a unique role in addressing emerging public health problems by working with state and local health departments to announce problems even before their cause is known, rapidly disseminating new knowledge about them weeks or months before articles appear in the medical literature, and publishing recommendations for their control and prevention. *MMWR* has played this

role time after time---the discovery of Legionnaires disease in the 1970s, AIDS and toxic-shock syndrome in the 1980s, hantavirus pulmonary syndrome in the 1990s, and severe acute respiratory syndrome (SARS) in the 2000s. At the same time, *MMWR* also has reported on nearly all the major noninfectious public health problems of the day---environmental emergencies, chronic diseases, injuries, and new public health technologies. To a great extent, the history of *MMWR* is the history of disease and injury prevention and control in the United States (<u>Table 1</u>).

MMWR's Precursors

MMWR's history began on April 29, 1878, when Congress passed the National Quarantine Act. The Act required the Surgeon General of the U.S. Marine-Hospital Service (later to become the U.S. Public Health Service [PHS]) to collect reports from U.S. consular officers on the sanitary condition of vessels departing for the United States and to give notice of these vessels to federal and state officers through weekly abstracts (*2*). This mandate resulted in *The Bulletin of the Public Health* (Figure 2), the first precursor of *MMWR*. The Marine-Hospital Service published the first issue of the *Bulletin* on July 13, 1878. It ran just six paragraphs and described cases of cholera, smallpox, and yellow fever in Key West, Florida; Cuba; and Malta (*3*). In 1878, a great yellow fever epidemic was raging in the Mississippi Valley, eventually to claim 20,000 lives (*4*), and a reader of these early reports can feel its deadly effects. On August 24, 1878, the *Bulletin* published a telegram from Dr. Booth, the Marine-Hospital Service officer at Vicksburg, Mississippi: "I am sick; impossible to procure accurate data." A week later, the *Bulletin's* report from Vicksburg said, "Dr. Booth, in charge of the patients of the Marine-Hospital Service, died the 27th."

On June 2, 1879, Congress repealed the earlier reporting provisions, and the *Bulletin* ended after just 46 issues, leaving dormant the reporting of surveillance statistics by the federal government. It reawakened with the advent of a new publication in 1887, *The Weekly Abstract of Sanitary Reports*, which continued the numbering of the *Bulletin*. Issue number 47 appeared on January 20, 1887. Like the *Bulletin*, the new publication contained communicable disease reports from foreign ports and the U.S. states, including a mortality table of U.S. cities. The *Weekly Abstract* also contained occasional narrative reports on public health topics. It reached 1,800 readers and was, in its editor's words, "greatly appreciated not only by quarantine officers, but steamship companies, merchants, and the press" (*4*).

On January 3, 1896, *The Weekly Abstract* became *Public Health Reports*, a journal that is still published today as the official journal of PHS. Initially, *Public Health Reports* looked a great deal like the *Weekly Abstract*, but in time *Public Health Reports* took the form of a full-fledged scientific journal and published important observations and research on communicable diseases and epidemiologic and laboratory investigations, plus such items as municipal ordinances, state legislation, and public health legal opinions. The PHS published *Public Health Reports* weekly until 1952, when it became a monthly publication, and in 1974, a bimonthly. By 1913, a motto of public health surveillance principles was appearing on the masthead of the publication's pages reporting notifiable diseases: "No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring." This motto appeared in *Public Health Reports* for 39 years (5).

Until 1942, morbidity statistics were collected, compiled, and published in Public Health Reports by

the PHS Division of Sanitary Reports and Statistics. In that year, this responsibility was transferred to the Division of Public Health Methods, and in 1949, to the National Office of Vital Statistics (NOVS),* another PHS agency (*5*). Morbidity and mortality statistics continued to be published in *Public Health Reports* until January 20, 1950, when they were transferred to a new NOVS publication called the *Weekly Morbidity Report*, the first publication to look like the modern-day *MMWR*. In 1952, NOVS changed the name of this publication to the *Morbidity and Mortality Weekly Report*.

Bringing MMWR to CDC

In 1960, CDC was only 14 years old; it had been organized in 1946 in Atlanta as an outgrowth of the federal agency, Malaria Control in War Areas (6). In 1949, Langmuir came to CDC, then known as the Communicable Disease Center, to head the epidemiology branch. Early in his career, Langmuir had worked at local and state health departments and had recognized the crucial importance of vital statistics and public health surveillance. During his early years at CDC, he noticed that the staff at NOVS who received, compiled, and reported federal surveillance statistics were not trained in epidemiology and, as a colleague later said, "had no obligation---or, apparently, inclination---to analyze data rapidly and act on the implications" (7). Langmuir became determined to move the surveillance function and its accompanying publication, *MMWR*, to CDC's epidemiology branch.

To counteract ambivalence about the transfer at both NOVS and CDC (*7*; David J. Sencer, personal communication, August 10, 2010), Langmuir worked hard to persuade his superiors that the job of disease surveillance fit better into CDC's mission than NOVS's. He enlisted help from colleagues in Washington and at CDC. David J. Sencer, the future director of CDC who was then working at the Bureau of State Services in Washington, weighed in on Langmuir's side, as did the Surgeon General's Study Group and a task force that had been appointed to consider the transfer. As Langmuir later said in an interview, "[After] all sorts of pulling out teeth by the roots without anesthesia and all kinds of internal frictions, ... on July 1st, 1960, we had the obligation, formal duty, of issuing the weekly morbidity and mortality report" (*8*). The Department of Health, Education, and Welfare formally approved the transfer on September 30, 1960. To make *MMWR* functional at CDC, the Department transferred a budget of \$16,500 and 1.5 employee positions to CDC (David J. Sencer, personal communication, August 10, 2010).

Langmuir named E. Russell Alexander as the first CDC editor of *MMWR* but worked tirelessly on *MMWR* himself (<u>Table 2</u>). During *MMWR*'s first 9 years at CDC, Langmuir gave *MMWR* his highest priority, labored over the text of each article, and approved gradual improvements. Over time, Langmuir began using *MMWR* to change practices in state and local health departments and clinicians (8). To make state and local health departments' work more prominent, he required that authors of *MMWR* articles from state and local health departments be listed first and that CDC authors be listed only by the name of their program and not individually. Langmuir also experimented with the use of an editorial note to accompany the factual reports.

The 1970s and 1980s

A turning point in the history of *MMWR* was Langmuir's appointment of Michael B. Gregg as *MMWR* editor in 1967 (<u>Figure 3</u>). Gregg became the longest-serving editor in *MMWR*'s history and exerted a major effect on *MMWR*'s personality, language, and scientific standards. Gregg had come to CDC in 1966 and had worked under Langmuir (9,10). Soon after Langmuir appointed him as *MMWR* Editor,

Gregg applied his literary skills to *MMWR*, editing each article carefully to ensure that it was written in clear, compact English and that it stuck to the epidemiologic findings (*11*; Anne Mather, personal communication, August 17, 2010).[†] During the 1970s, Gregg developed the editorial note into a consistent and valuable feature of each article; he took special pride in these notes, which he observed were the most-read part of *MMWR* articles and gave CDC a chance to point out the implications of the facts presented (*11*). The editorial note became the place where each *MMWR* report answers the "so what?" question: what actions should be taken by readers (e.g., medical personnel, state and local health departments) as a result of the information in the report.

One of Gregg's most enduring contributions to *MMWR* was to persuade the National Library of Medicine to include content from *MMWR* in the Index Medicus (<u>10</u>). Beginning in 1981, inclusion there would mean that all reports published in *MMWR* would forever become part of the indexed medical literature. Through Gregg's steady improvements, gradually *MMWR* became required reading at state and local health departments and medical offices and within the health press.

In early May 1981, Gregg received a telephone call from Wayne Shandera, an Epidemic Intelligence Service (EIS) Officer assigned to the Los Angeles County Department of Health (*12*). Shandera described five cases of *Pneumocystis carinii* pneumonia in young men. The five men had in common that they were previously healthy and had had sex with other men. *Pneumocystis* pneumonia was seen mainly in persons with cancer or other immunosuppressive conditions, and a group of five cases in otherwise healthy young men was highly unusual. The attending physician who had treated four of the men, Michael Gottlieb, wanted to publish the cases in a medical journal but knew that would take months (*6*). Shandera asked Gregg whether he would be interested in publishing a description of the cases in *MMWR*. Gregg did not know quite what to make of the cases but asked Shandera to submit a report to MMWR (*12*). After consulting with colleagues at CDC, Gregg published the report in *MMWR* on June 5, 1981 (*13*) (Figure 4). Immediately after the article appeared, clinicians across the country who had seen similar patients realized the connection to the Los Angeles cases (*12*). Recognition of the AIDS epidemic had begun. The first AIDS article in the peer-reviewed medical literature appeared 4 months later (*14*).

Until the mid-1980s, CDC provided a free print subscription by airmail to anybody who requested one, and circulation rocketed from approximately 6,000 in 1961 to 80,000 in 1981 and 120,000 in 1983. In 1982, the cost of MMWR printing and distribution came under scrutiny, and CDC director William Foege was obliged to take "a painful departure from our tradition" (15) and notify MMWR readers that CDC would no longer provide unrestricted free distribution. Overnight, free mailed subscriptions from CDC dropped from 120,000 to about 12,000. The drastic reduction in free distribution prompted complaints from subscribers and the medical community. Foege, Gregg, and colleagues at CDC talked with leaders in the medical press about how to fill the gap. On February 24, 1983, the editor of the New England Journal of Medicine, Arnold S. Relman, announced that the Journal's parent organization, the Massachusetts Medical Society, would begin reprinting MMWR and selling subscriptions at \$20.00 per year (16). That arrangement, at a current rate of \$189 per year, remains in effect, and the Society continues to reprint all series of MMWR for approximately 5,500 paid subscribers (Ann Russ, Massachusetts Medical Society, personal communication, September 7, 2010). In March 1983, George D. Lundberg, the editor of the Journal of the American Medical Association (JAMA), announced that JAMA would begin publishing weekly in its pages lead articles from MMWR (17). That arrangement, too, continues today.§

The 1990s

Gregg stepped down as *MMWR* editor in 1988 and was succeeded by Richard A. Goodman. During Goodman's tenure as editor, two of *MMWR's* priorities were to expand its content and turn the articles toward specific public health actions. By 1990, *MMWR*'s circulation had rebounded to 45,000--50,000 (7), mostly through the Massachusetts Medical Society. The national news media were covering CDC's activities closely, and several times each month *MMWR* articles were the source of national news stories. By the early 1990s, *MMWR* had published hundreds of articles on the burgeoning AIDS epidemic. One of the most influential was an article published July 27, 1990, about transmission of HIV to patients by a dentist in Florida (*18*), the first documented instance of HIV transmission through a medical procedure. Publication of this report received enormous attention by the media, dramatically underscoring the sway of CDC and *MMWR* over public health information (Richard A. Goodman, personal communication, August 18, 2010).

By 1990, *MMWR* had become a series of four publications: the *MMWR* weekly, the annual *Summary of Notifiable Diseases*, the *CDC Surveillance Summaries*, and Supplements. The *Surveillance Summaries* series had been created in 1983 by Stephen B. Thacker, the director of the CDC surveillance office from which the *MMWR* emanated, to centralize and promote surveillance activities of CDC programs (Stephen B. Thacker, personal communication, August 17, 2010). Previously, CDC surveillance data had been published and distributed by each individual CDC program. The rising prominence of *MMWR* placed more pressure on authors inside and outside CDC to publish their findings quickly in *MMWR*. EIS Officers had a new requirement to submit reports to *MMWR* as part of their CDC training. Submissions to *MMWR* soared.

In the late 1980s, *MMWR* determined that just one type of report consumed approximately one fourth of all text pages in the *MMWR* weekly: official vaccination recommendations from CDC's Advisory Committee on Immunization Practices (19; Richard A. Goodman, personal communication, August 18, 2010). To alleviate the problem and to accommodate demand for space for reports of epidemiologic field investigations and other work, *MMWR* created the *Recommendations and Reports* in 1990. Since then, the *Recommendations and Reports* series has been *MMWR*'s main vehicle for publishing the full spectrum of official CDC recommendations, from the diagnosis of tuberculosis to the vaccination recommendations of the Advisory Committee on Immunization Practices.

The 1990s also marked *MMWR's* first foray into electronic publishing. Since the mid-1980s, CDC had made *MMWR* available to state and local health departments and other entities through dedicated electronic systems operated through telephone lines (*20*). In 1992, *MMWR* content became available through a file transfer protocol (FTP) server. However, these systems were often expensive and difficult to use. Beginning in 1993, CDC began to convert *MMWR* into electronic format and increase its availability through the Internet. In January 1995, the publication made its editions available both through FTP and the World-Wide Web (*21*; T. Demetri Vacalis, personal communication, August 11, 2010). The new Internet distribution quickly had an unanticipated benefit. In 1995, *MMWR* had never missed publishing a weekly issue (a record that remains true today). In November of that year, 10 months after *MMWR* instituted electronic distribution, the federal government shut down all but emergency functions because of a budget impasse between the President and the Congress. For its November 17, 1995, edition, *MMWR* had to delay printing the weekly issue, but still released *MMWR*

on time through its new electronic capability (22).

In June 1996, on the occasion of CDC's 50th anniversary, *MMWR* published a special issue featuring CDC's history and the evolution of reporting public health data (*23*). In 1999, also in recognition of CDC's 50th anniversary, *MMWR* published a compendium of selected reports that had appeared during 1961--1996 on such topics as smallpox, Legionnaires disease, HIV/AIDS, and other major public health events covered in *MMWR* (*24* \overrightarrow{rs}).

The 2000s

The events of September 11, 2001, and the subsequent anthrax attacks brought a major focus on bioterrorism and emergency preparedness to CDC and *MMWR*. During the 2000s, other public health events also affected the path of *MMWR*, including the advent of SARS, the expansion of West Nile and emergence of monkeypox virus infections in the United States, and greater national aspirations for the control of influenza epidemics. At the same time, *MMWR* was obliged to cope with a building maelstrom in the medical publishing world spawned by the explosive growth of the Internet.

Goodman stepped down as editor in 1998 and was succeeded by John W. Ward. One of Ward's first jobs was to find a way for *MMWR* to celebrate the coming new millennium. Jeffrey P. Koplan, CDC director during 1998--2002, came up with the idea of a series on the 10 great achievement of public health in the previous century. *MMWR* began publishing the series in April 1999 (*25*), and the articles became among the most cited ever published by *MMWR*.

The new millennium was only months old when the attacks of September 11 occurred, followed in October by the intentional releases of anthrax spores. *MMWR* published its first article on the anthrax attacks on October 12, 2001 (*26,27*), and for weeks published updates on the epidemiologic investigation and recommendations. In March 2003, when SARS erupted around the world, *MMWR* began to publish articles on the epidemic, updating the number of cases reported to the World Health Organization, the number of deaths and related public health alerts and information (*28*).

By 2002, most *MMWR* subscribers received the publication by e-mail, which had supplanted postal letters as the main method of communication between CDC and state and local health departments. *MMWR*'s e-mail circulation was approximately 30,000, which when combined with the ongoing print subscriptions mailed by CDC and the Massachusetts Medical Society, gave a total circulation of about 50,000.¶ The occurrence of so many public health emergencies during the early 2000s brought the realization that, during critical events, *MMWR* could no longer wait until the routine weekly issue on Friday to send critical information to readers (John W. Ward, personal communication, August 4, 2010.). Before 2002, only once in its history had *MMWR* published an issue on a day other than Friday, in January 1977 to announce CDC's discovery of the bacterium that caused Legionnaires disease (David J. Sencer, personal communication, August 10, 2010). On September 13, 2002, *MMWR* published its first "Dispatch," a new form of urgent report that could be emailed to readers at any time, day or night (*29*).

The early 2000s brought other changes as *MMWR* strove to adapt to the rapidly changing communications world (Mary Lou Lindegren, personal communication, August 9, 2010). The *MMWR* series became more Web-centric, adapting its editorial policies to match Web-based publication. In

2001, *MMWR*'s graphical appearance changed from its longstanding 6- by 8-inch black-and-white format to a new 81/2-inch by 11-inch two-color format. To match the scope of CDC's work, *MMWR's* content became more diverse (e.g., reviews by CDC's *Guide to Community Health Services*, more reports on chronic disease and injuries, and a new one-page graphical snapshot of key public health statistics called QuickStats, produced by CDC's National Center for Health Statistics). In 2002, CDC contributors to the weekly were for the first time listed by name.

Ward stepped down as the MMWR editor in 2005 and was succeeded by Mary Lou Lindegren. In 2005, both Ward and Lindegren believed that MMWR needed an advisory board to provide independent advice to the *MMWR* editor. After 2 years of planning, the *MMWR* Editorial Board met for the first time in June 2006, chaired by William L. Roper, a former CDC director. Also during the mid-2000s, in response to findings from a CDC committee on the quality of evidence used in CDC recommendations, for the first time *MMWR* listed explicit guidelines for making official recommendations in its pages and required contributors to state more clearly the evidentiary basis of recommendations. *MMWR* also revamped its production process; added new technologies such as RSS feeds; and developed new content, such as a series of perspective reports from past CDC directors and a compendium celebrating 60 years of public health science at CDC (*30*). *MMWR* also increased its role in documenting the impact of global public health initiatives (e.g., polio eradication, measles eradication, global HIV control efforts), and copublished many articles with the World Health Organization's *Weekly Epidemiological Record*.

Lindegren was succeeded by Frederic E. Shaw in 2007 and *MMWR* added its first deputy editor in 2009.** Beginning October 2006, two new podcasts, broadcast in English and Spanish, became the sixth component of the *MMWR* series. They were *MMWR*'s first foray into products for lay audiences. *MMWR* also revamped the graphical format of the series (the first revision since 2001), added new report types to the weekly (e.g., CDC's Public Health Grand Rounds, mini-articles that appear under the header, "Notes from the Field"), and instituted an *MMWR* presence on Facebook and Twitter. In 2010, *MMWR* also implemented a suggestion from CDC's new director, Thomas R. Frieden, by inaugurating the publication of "Vital Signs," a new coordinated CDC communication effort anchored by scientific articles in *MMWR* (*31*). In April 2009, the worldwide outbreak of pandemic influenza A (H1N1) (then called swine influenza H1N1) began; *MMWR* reported the first two cases on April 21, 2009 (*32*), then published rapid-fire articles on the pandemic, including *MMWR*'s first published articles in Spanish. By the end of 2010, *MMWR* had published 45 articles on various aspects of the pandemic.

By 2007, the technology used by *MMWR* to distribute the publication by e-mail had become antiquated. In February 2009, *MMWR* switched to a new Web-based system that made subscribing to *MMWR* easier. This change, combined with a huge public interest in 2009 pandemic (H1N1), vaulted *MMWR*'s electronic circulation from approximately 50,000 in 2007 to 100,000 in 2010. By August 2010, with the remaining print subscription base of about 13,000, *MMWR*'s total circulation had reached almost 115,000, near the level at which it stood before the budget cuts of 1982. Together with articles reprinted to *JAMA's* subscribers, approximately 1 million monthly visits to the *MMWR* website, podcast downloads of 50,000 per week, and *MMWR* followers on Facebook and Twitter, by its 50th anniversary at CDC in 2011, *MMWR* was seen by a bigger and broader audience than ever before.

The Future

When the Internet began to emerge into common use in the early 1990s, no one could have imagined the revolutionary effects it would have on medical and public health communications. One effect on *MMWR* has been to create competitors for *MMWR*'s traditional mission of bridging the gap between immediate news media reports of public health events and later scientific publication (*5*). Today, medical journals are able to publish scientific articles more quickly than before through electronic means. During the recent outbreak of pandemic (H1N1) influenza, *The New England Journal of Medicine* electronically published information about the epidemiology of the disease within just a few days of data collection (*33*).

In 1961, and for decades afterwards, *MMWR* was the only way for CDC to mass-disseminate scientific information rapidly about public health events. Today, several other electronic channels exist at CDC for rapid communications about public health events: Epi-X (an electronic communication system for public health officials), the Health Alert Network (HAN), the Clinician Outreach and Communication Activity (COCA), satellite or Internet-based conferencing, mass e-mails, and informal posting on the Web. During the recent influenza pandemic, CDC relied on all these channels to communicate epidemiologic data and recommendations to state and local health departments and the medical community and relied especially heavily on informal postings on the Web. Ten years from now, a historian who wishes to trace CDC's work on the pandemic will consult *MMWR's* archives, but also will be obliged to consult electronic materials on the Web and other channels, if they are still accessible.

Despite these pressures, *MMWR's* traditional role continues. Informal Web postings, attractive as they might be, do not receive the rigorous review and editing that *MMWR* content does, nor are they indexed in MEDLINE, something that authors still believe is important. Rapid public releases to the news media or to health-care providers generally do not contain the kind of detailed scientific information sought by public health and medical audiences. Medical journals, although much more nimble than ever before, cannot publish state or federal public health investigations within hours, nor replace *MMWR*'s central role as the official voice of CDC, nor publish lengthy official CDC recommendations or surveillance statistics. These functions will remain unique to *MMWR* into the future. As the future unfolds, new roles for *MMWR* will continue to appear as they have over the past 50 years, and *MMWR* will evolve to meet the needs of public health.

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* NOVS was merged with the National Health Survey in 1960 to form the National Center for Health Statistics, which became part of CDC in 1987.

⁺ Gregg later wrote, "The *MMWR* is not a compilation of unsubstantiated information gathered by a variety of lay, semi-scientific or even scientific sources to alarm, persuade, or otherwise convince the reader by subtle editorialization, but rather the reports comprise the best available scientific data obtained by professionals, carefully reviewed and articulated, shorn of modifiers, primarily designed to bridge the gap between the traditional news media reports of events on the one hand, and the 6--12 month to even 18-month delay before the bloom of scientific publication on the other" (*5*).

§ For a time, the Ochsner Clinic also reprinted MMWR.

¶ The circulation of *MMWR* through the Massachusetts Medical Society in 2002 was 13,500 (19).

** Shaw served as Acting *MMWR* Editor in the summer of 2006 and became Editor in January of 2007. He was succeeded by Ronald L. Moolenaar in 2010. *MMWR*'s first deputy editor is Christine G. Casey. Another deputy editor, John S. Moran, was added in 2010.

FIGURE 1. Alexander D. Langmuir, circa 1965



Photo: CDC

Alternate Text: The figure is a photo of Alexander Langmuir at his desk in 1966

TABLE 1. Timeline of major events in MMWR history, 1878--2011

Year Major Event

¹⁸⁷⁸ First issue of *The Bulletin of the Public Health*, the first ancestor of *MMWR*, is published. It ceases publication after just 46 weekly issues.

1887 The first Weekly Abstract of the Sanitary Reports is published.

The Weekly Abstract of Sanitary Reports becomes *Public Health Reports*, the official journal of the U.S. Public Health Service published today by the Association of Schools of Public Health.

Dissemination of federal morbidity and mortality statistics is transferred from *Public Health* 1950 *Reports* to the *Weekly Morbidity Report*, a new publication of the federal National Office of Vital Statistics (NOVS).

- NOVS changes the name of the Weekly Morbidity Report to the Morbidity and Mortality
 Weekly Report (MMWR).
- ¹⁹⁶⁰ The Department of Health, Education and Welfare transfers responsibility for publishing the *MMWR* to the Communicable Disease Center (CDC).
- 1961 CDC publishes its first issue of MMWR.
- 1967 CDC's name is changed to the National Communicable Disease Center.
- 1970 CDC's name is changed to the Center for Disease Control.
- ¹⁹⁷⁷ In January 1977, *MMWR* publishes its first and only special edition until 2002. It describes the discovery of the organism that causes Legionnaires disease.
- 1980 CDC's name is changed to the Centers for Disease Control.
- 1981 In *MMWR*, CDC publishes reports of the first five cases of AIDS.
- 1981 *MMWR* articles are for the first time included in Index Medicus.

MMWR subscribers are reduced from approximately 120,000 to 12,000 because of federal budget cuts. The Massachusetts Medical Society begins print subscriptions for *MMWR*. The

- ¹⁹⁸² Journal of the American Medical Association reprints MMWR articles. Both arrangements continue today.
- 1983 CDC Surveillance Summaries, a new series of MMWR, is published for the first time.
- 1990 Recommendations and Reports, a new series of MMWR, is published for the first time.
- 1992 CDC's name is changed to the Centers for Disease Control and Prevention.
- 1992 *MMWR* content becomes available on an FTP server on the Internet.
- 1995 *MMWR* content becomes available on the World-Wide Web.
- MMWR format changes from 6-inch by 8-inch, one-color format to 81/2 inch by 11 inch, two-color format.

2002 *MMWR* establishes ability to publish Dispatches, online reports that can be distributed by email day or night. The first Dispatch is published in September 2002.

2006 The *MMWR* Editorial Board is established and holds its first meeting.

2006 *MMWR* weekly podcast series is established. The podcasts are *MMWR*'s first product for lay audiences.

2009 *MMWR*'s first Deputy Editor is appointed. A second Deputy Editor is appointed in 2010.

2010 *MMWR* establishes a presence on social media (Facebook and Twitter).

FIGURE 2. The Bulletin of the Public Health, published by the U.S. Marine-Hospital Service, July 13, 1878

BUILETINS.

No. 1.

OFFICE SUBGEON-GENERAL, U. S. M.-H. S., Washington, July 13, 1878.

The following information is furnished by the Surgeon-General of the Marine-Hospital Service to State and municipal officers of health, &c., it accordance with the requirements of the National Quarantine act:

Havana, Cuba.—From 20 to 34 deaths from yellow-fever, and more from small-pox, are now occurring weekly in the city of Havana.

Cardenas and Sagua is Grande, Onbe.—Good health in bay and sity. Matanzar, Cuta.—The captain and four of the crew of the bark "Marie Donau" were stracked with yellow-fever on the 3d instant, in the harbor of Matanzas. Only one other cases of fever has occurred in the shipping of that port. Spondic cases are reported in the city, but the disease is of a mild character.

Key West, Fis.—Two cases of yellow-fever have occurred in the harbor of Key West, one on the Norwegian ship "Marie Frederike," and one on the Spanish bark "Doña Talefora." The city is reported bealthy.

Two of the British vessels which recently conveyed native Indian troops to Malta, had cholera on board during the passage from India. On one of the vessels nine cases and four deaths, and on the other two deaths, occurred before the vessel passed the Sner canal. The vessels were allowed to pass the canal without detention, though it is customary to send a vessel, on which a single case of cholera has occurred during the voyage, back to Thor, 120 miles, there to remain two weeks or more in quarantine.

> JNO. M. WOODWORTH, Surgeon-General, U. S. M. H. S.

PUBLIC HEALTH REPORTS began as a one-page bulletin issued by the Supervising Surgeon-General of the Marine-Hospital Service. The first bulletin, which appeared July 13, 1878, is reproduced as part of the journal's bicentennial reprint series.

Alternate Text: The figure is a copy of the cover of "The Bulletin," the forerunner to MMWR.

TABLE 2. MMWR Editors, Managing Editors, and Deputy Editors, 1961--2011

Years Editor

1961--1962 E. Russell Alexander

1962--1963 P.R. Joseph

19631964	Lawrence K. Altman
19651966	D.J.M. MacKenzie
19671988	Michael B. Gregg
19881998	Richard A. Goodman
19982005	John W. Ward
20052006	Mary Lou Lindegren
20072010	Frederic E. Shaw
2010	Ronald L. Moolenaar
	Managing Editor
19541965	P.D. Stolley
19681970	Priscilla B. Holman
19711972	Susan J. Dillon
19731974	Deborah L. Jones
1975	Katherine A. Sherman
19751981	Anne Mather
19821986	Karen L. Foster
1987-1988	Gwendolyn A. Ingraham
19882000	Karen L. Foster
2000	Caran R. Wilbanks (Acting)
20002002	Teresa F. Rutledge (Acting)
20022003	David C. Johnson (Acting)
20032008	Suzanne M. Hewitt
2008	Teresa F. Rutledge
	Deputy Editor

FIGURE 3. Michael B. Gregg, circa 1968



Photo: CDC

Alternate Text: The figure is a photo of Michael B. Gregg, former editor of MMWR.

FIGURE 4. First page of the first AIDS report, June 5, 1981

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MMWF

Dengue - Continued

Editorial Note: Dengue type 4 frequently occurs in Southeast Asia, the South Pacific, and Africa. How it was introduced onto St. Barthelemy, a small and relatively remote island in the Caribbean, remains unknown. However, French health authorities have reported to CAREC that an outbreak of dengue-like illness has been observed on St. Barthelemy, beginning in February or March, but has since declined. In the absence of reports of an ongoing outbreak of dengue in the Caribbean, the risk that travelers to this area will acquire dengue is probably small.

Dengue types 2 and 3 have been present in the Caribbean at least since the 1960s. Dengue type 1 was first recognized in that area when an outbreak in Jamaica in 1977 was followed by numerous outbreaks on other Caribbean islands and in Central America. All these dengue types, as well as type 4, usually cause an illness that is clinically mild and typically of short duration.

Pneumocystis Pneumonia - Los Angeles

In the period October 1980-May 1981, 5 young men, all active homosexuals, were treated for biopsy-confirmed *Pneumocystis carinii* pneumonia at 3 different hospitals in Los Angeles, California. Two of the patients died. All 5 patients had laboratory-confirmed previous or current cytomegalovirus (CMV) infection and candidal mucosal infection. Case reports of these patients follow.

Patient 1: A previously healthy 33-year-old man developed *P. carinii* pneumonia and oral mucosal candidiasis in March 1981 after a 2-month history of fever associated with elevated liver enzymes, leukopenia, and CMV viruria. The serum complement-fixation CMV titer in October 1980 was 256; in May 1981 it was 32.* The patient's condition deteriorated despite courses of treatment with trimethoprim-sulfamethoxazole (TMP/ SMX), pentamidine, and acyclovir. He died May 3, and postmortem examination showed residual *P. carinii* and CMV pneumonia, but no evidence of neoplasia.

Patient 2: A previously healthy 30-year-old man developed *P. carinii* pneumonia in April 1981 after a 5-month history of fever each day and of elevated liver-function tests, CMV viruria, and documented seroconversion to CMV, i.e., an acute-phase titer of 16 and a convalescent-phase titer of 28^{*} in anticomplement immunofluorescence tests. Other features of his illness included leukopenia and mucosal candidiasis. His pneumonia responded to a course of intravenous TMP/SMX, but, as of the latest reports, he continues to have a fever each day.

Patient 3: A 30-year-old man was well until January 1981 when he developed esophageal and oral candidiasis that responded to Amphotericin B treatment. He was hospitalized in February 1981 for *P. carinii* pneumonia that responded to oral TMP/SMX. His esophageal candidiasis recurred after the pneumonia was diagnosed, and he was again given Amphotericin B. The CMV complement-fixation titer in March 1981 was 8. Material from an esophageal biopsy was positive for CMV.

Patient 4: A 29-year-old man developed *P. carinii* pneumonia in February 1981. He had had Hodgkins disease 3 years earlier, but had been successfully treated with radiation therapy alone. He did not improve after being given intravenous TMP/SMX and cortico-steroids and died in March. Postmortem examination showed no evidence of Hodgkins disease, but *P. carinii* and CMV were found in lung tissue.

*Paired specimens not run in parallel.

Alternate Text: The figure is a copy of the first page of the first AIDS report in MMWR on June 5, 1981.

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**Questions or messages regarding errors in formatting should be addressed to <u>mmwrq@cdc.gov</u>.

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