

Editorial

Editorial: Epidemic-Assistance Investigations by the Centers for Disease Control and Prevention—The First 60 Years

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In a supplement to this issue of the *Journal*, a series of papers describe the epidemic-assistance investigations (Epi-Aids) that the Centers for Disease Control and Prevention (CDC) conducted during the first 60 years of its existence (1946–2005). The vast majority of Epi-Aids were led by officers of the Epidemic Intelligence Service (EIS), the CDC's renowned, 2-year field training program for epidemiologists initiated by Alexander Langmuir in 1951 to help address the CDC mission of providing US federal support to state and local health departments (1).

In this supplement, a paper by Thacker et al. (2) reviews the types of health problems that were investigated by the CDC, as well as the progressively more sophisticated epidemiologic and statistical methods used in this work. Six papers focus on selected areas that together represent a large proportion of the investigations during this period. CDC was founded in 1946 as the Communicable Disease Center, and 4 papers focus on investigations of infectious disease outbreaks (vaccine-preventable diseases, foodborne/enteric disease outbreaks, respiratory illnesses, and infection outbreaks in health care settings) (3–6). Over time, CDC's mandate broadened to include noninfectious public health problems, as reflected by a paper on environmental- and injury-related investigations (7) and one on maternal and child health investigations (8). For the most part, CDC provided this assistance to US state and local health departments, but the agency also responded to almost 500 international requests for assistance during this period. A paper by Rolle et al. (9) summarizes the nature of those investigations. The supplement also includes a paper summarizing 178 Epi-Aids that involved American Indian and Alaska Native populations (10).

What can be learned from this 60-year history? The CDC is the world leader in field epidemiology, and this supplement chronicles this agency's unparalleled experience in performing "shoe leather" epidemiology. This work also demonstrates the critical importance of a federal rapid epidemic-assistance program for addressing public health problems in the United States and worldwide. One measure of that importance is the demand for this service: the CDC conducted almost 4,500 Epi-Aids during this 60-year period.

A second measure is the many important scientific and public health advances that resulted directly from CDC investigations, including the discovery of novel agents, transmission

routes, and disease associations. In a very notable 1976 investigation, CDC became involved in an outbreak of pneumonia that resulted in 29 fatalities among attendees at an American Legion celebration of the US bicentennial in Philadelphia, Pennsylvania (11). This work led to the discovery of *Legionella*, a novel bacterial pathogen that CDC subsequently linked to previous respiratory disease outbreaks (12) and to the self-limited, influenza-like illness known as Pontiac fever (13). In 1981, investigations of Kaposi's sarcoma and *Pneumocystis carinii* pneumonia among homosexual men in New York City and California provided the initial indication of the impending pandemic of human immunodeficiency virus (14, 15). CDC Epi-Aids also provide "surge capacity" for large-scale public health emergencies. In 2001, 126 EIS officers were deployed in response to the attack on the World Trade Center and the mailing of anthrax-containing letters soon thereafter (2).

This supplement also demonstrates the value of CDC records as a window into the evolution of public health practice in the United States. To make this supplement possible, Thacker et al. (2) reviewed bound copies of all Epi-Aid reports for this period and other sources. They abstracted information on the nature of the health problems investigated, as well as information on dates, location, and participating CDC staff. Efforts are now under way at CDC to create an online version of the collection that will be available to the public, which should be a valuable resource for epidemiologists and other public health professionals.

What will the next 60 years hold in terms of epidemic assistance by the CDC? As Yogi Berra, the Hall of Fame baseball player, once observed, "It's tough to make predictions, especially about the future." Globalization, climate change, technological intervention, and other less obvious factors will undoubtedly lead to public health problems that we cannot foresee, but rapid expert epidemiologic assistance by the CDC will be an essential component of the response to those challenges.

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REFERENCES

1. Langmuir AD. The Epidemic Intelligence Service of the Center for Disease Control. *Public Health Rep.* 1980;95(5): 470–477.
2. Thacker SB, Stroup DF, Sencer DJ. Epidemic assistance by the Centers for Disease Control and Prevention: Role of the Epidemic Intelligence Service, 1946–2005. *Am J Epidemiol.* 2011;174(suppl):S4–S15.
3. Hinman AR, Orenstein WA, Schuchat A. Vaccine-preventable diseases, immunizations, and the Epidemic Intelligence Service. *Am J Epidemiol.* 2011;174(suppl):S16–S22.
4. Wright AP, Gould LH, Mahon B, et al. Overview of the impact of epidemic-assistance investigations of foodborne and other enteric disease outbreaks, 1946–2005. *Am J Epidemiol.* 2011; 174(suppl):S23–S35.
5. Hadler SC, Castro KG, Dowdle W, et al. Epidemic Intelligence Service investigations of respiratory illness, 1946–2005. *Am J Epidemiol.* 2011;174(suppl):S36–S46.
6. Archibald LK, Jarvis WR. Health care-associated infection outbreak investigations by the Centers for Disease Control and Prevention, 1946–2005. *Am J Epidemiol.* 2011;174(suppl): S47–S64.
7. Falk H, Briss P. Environmental- and injury-related epidemic-assistance investigations, 1946–2005. *Am J Epidemiol.* 2011; 174(suppl):S65–S79.
8. Rochat RW, Heath CW Jr, Chu SY, et al. Maternal and child health epidemic-assistance investigations, 1946–2005. *Am J Epidemiol.* 2011;174(suppl):S80–S88.
9. Rolle IV, Pearson ML, Nsubuga P. Fifty-five years of international epidemic-assistance investigations conducted by CDC's disease detectives. *Am J Epidemiol.* 2011;174(suppl):S97–S112.
10. Cheek JE, Hennessy TW, Redd JT, et al. Epidemic assistance from the Centers for Disease Control and Prevention involving American Indians and Alaska Natives, 1946–2005. *Am J Epidemiol.* 2011;174(suppl):S89–S96.
11. Fraser DW, Tsai TR, Orenstein W, et al. Legionnaires' disease: description of an epidemic of pneumonia. *N Engl J Med.* 1977; 297(22):1189–1197.
12. Thacker SB, Bennett JV, Tsai TF, et al. An outbreak in 1965 of severe respiratory illness caused by the Legionnaires' disease bacterium. *J Infect Dis.* 1978;138(4):512–519.
13. Kaufmann AF, McDade JE, Patton CM, et al. Pontiac fever: isolation of the etiologic agent (*Legionella pneumophila*) and demonstration of its mode of transmission. *Am J Epidemiol.* 1981;114(3):337–347.
14. Kaposi's sarcoma and Pneumocystis pneumonia among homosexual men—New York City and California. *MMWR Morb Mortal Wkly Rep.* 1981;30(25):305–308.
15. Pneumocystis pneumonia—Los Angeles. *MMWR Morb Mortal Wkly Rep.* 1981;30(21):250–252.

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