

Why Is Rural Public Health Important? A Look to the Future

Michael Meit and Alana Knudson

Public health in the United States began as a largely urban phenomenon, dating back to the late 1700s. In those days, public health was mostly concerned with issues such as sanitation and communicable diseases, which were of greater concern in areas with higher population density. By the late 1800s, however, it was apparent that the country's population was becoming more mobile and communicable diseases were beginning to spread from urban dwellers to rural dwellers, creating a need for rural public health services. Beginning in 1908, local governmental public health began to expand its reach into rural areas, with county health departments developing rapidly until the mid-1940s. Following the passage of the Hill-Burton Act in 1945, which funded the construction of community hospitals, rural health focus shifted almost exclusively to ensuring access to healthcare services. This article provides a historical context for rural public health service delivery and a beginning discussion of implications for contemporary rural public health practice.

KEY WORDS: history of public health, public health workforce, rural public health

Former Centers for Disease Control and Prevention director Jeffery Koplan, MD, often noted, "Either we are *all protected* or we are *all at risk*." This is perhaps as good a statement as any in expressing the importance of rural public health. Gaps in the public health system—urban or rural—threaten the continuity of the public health system that protects and preserves our nation's health.

Importantly, public health practice within rural America is a unique pursuit within the field of public health given historical constraints, as well as an array of distinctly rural issues and concerns. Foremost among rural public health concerns, and the central focus of

this article, is the diverse nature of the public health infrastructure across the nation. Each state has a different public health infrastructure, and the local authority to deliver public health services varies widely. The fact that as a nation we have 50 public health infrastructure models has tremendous implications for the delivery of public health services, especially in rural communities. As noted by Pickett in 1980,

When the units counted represent such diverse ecological and political systems, statistical analyses that result in a portrait of the "average" unit tend to increase rather than decrease distortions of reality. Thus, despite the models described and advocated, it seems likely that the public health movement in the United States as it has often been portrayed represents an exaggerated description of what actually happened, and the recommendations for what should happen represent an equally unrealistic appraisal of what is probable or artfully possible given the resistance to merger and the adherence to tradition.^{1(pp306-307)}

By providing insights into the development of our rural public health infrastructure, we hope to illuminate some of the structural and organizational challenges that have emerged over the course of the past 100 years of rural public health. Importantly, and not to be forgotten, the rural public health infrastructure never fully developed in many areas so that, even today, many rural citizens reside in communities not served by a local health department (LHD). Whether this is detrimental to population health largely depends upon how well other partners work to fill this governmental public

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health void. Public health is not just the governmental entities that work to ensure population health but also includes a wide array of partners such as hospitals, healthcare providers, nonprofit organizations, cooperative extension agents, volunteers, and many others. These are often critical partners in rural and urban communities alike; for rural communities otherwise lacking public health capacities, however, they are of utmost importance. Little research has been conducted to assess the effectiveness of these entities in ensuring public health service and concerns often arise when public health is not someone's job but is rather dependent upon community partners or volunteers. The bottom line is that public health is inherently a local pursuit and, accordingly, it tends to work best when it is responsive to local needs. Inasmuch as many rural communities lack this local-level component of the public health system, ensuring this level of responsiveness is a much greater challenge.

● A Look Back: The Development of Rural Public Health

The history of governmental public health in America dates back to the late 1700s. At that time, however, it was exclusively an urban phenomenon, in direct response to yellow fever outbreaks that began in Philadelphia but spread along the eastern seaboard. The first city to establish a board of health was Philadelphia in 1794, followed by Baltimore in 1797, Boston in 1799, Washington, DC, in 1802, New Orleans in 1804, and New York City in 1805.² In the late 1820s and early 1830s, a new epidemic, Asiatic cholera, renewed interest in public health and led to a rapid expansion of urban boards of health. These entities remained largely emergency bodies designed to restore cities and towns following outbreaks.^{3(pp38,84)}

Not until the Civil War was there a good understanding of proper sanitation in preventing disease. With this understanding came the development of municipal health departments, with numbers expanding into the late 1880s. Also during this time, states began to form boards of health, with Louisiana being the first state to establish a board of health in 1855 and Massachusetts the second in 1869. Later, in the early 1900s, municipal health department functions grew dramatically to include much of what we consider key public health activities today, such as food inspection and prevention of contagious diseases.^{3(pp126,149)}

At the federal level, an 11-member National Board of Health was enacted into law in 1879, considered to be the first federal health agency. The board proved to be largely successful in two areas, establishing and improving local and state health boards, and develop-

ing more effective quarantine measures. Due to ambiguity in the law creating the National Board of Health and a concomitant push for states' rights, however, it was short lived. The Marine Hospital Service, reorganized a decade earlier under the leadership of the nation's first surgeon general, Dr John M. Woodworth, would eventually take over national authority for issues of quarantine and public health from the National Board of Health in 1882. By the end of the 1800s, the Marine Hospital Service was solidly recognized as the chief health agency of the United States.^{3(pp168–172)}

All of the governmental agencies that focused on public health at this time—the municipal health departments, the state boards of health, and the Marine Hospital Service—were predominantly interested in urban health issues arising from diseases spread through improper sanitation and close living quarters. “Country living” was equated with clean, healthy living and thought to be immune from these urban concerns and, as a result, was not seen as needing this same level of public health focus. It was not until the late 1890s that some started to question these assumptions. One of the first to do so was a zoologist, Charles W. Stiles, who was convinced that hookworm disease was widespread throughout the rural South.^{3(p227)} Another early proponent of the need to address rural health issues was Pennsylvania Governor Daniel H. Hastings, who, in 1899, reported to the Pennsylvania legislature that it was fiction to assume “that the country districts are naturally so healthy that there is no need for laws to prevent disease.”⁴

Prior to the establishment of formalized governmental public health units in rural areas, much of the work of public health was provided by district nurses, later known as public health nurses. While district nursing had its roots in England in the mid-1850s, it was not until 1877 that it was introduced in the United States.^{5(pp375–379)} District nursing societies were established in the 1880s and eventually changed their names to Visiting Nurses Associations. The focus of these voluntary organizations was to provide care for the sick in their homes. As governmental public health expanded in the late 1800s, urban health departments began hiring nurses to provide a wider array of public health services, beginning with Los Angeles and New York City.^{5(pp379–380)} In 1907, Alabama became the first state to legally approve the employment of public health nurses by local boards of health, and the National Organization of Public Health Nursing was formed soon thereafter in 1912.^{5(pp380–381)} Given the lack of governmental public health units in rural areas, however, nurses continued to provide a large proportion of rural public health services, typically on a voluntary and uncoordinated basis. As late as 1931, Winslow noted,

[I]n rural areas we find almost universally, either scattered isolated nursing units, doing individual jobs for local authorities or unofficial agencies without supervision or correlation, or a general service by state or county nurses which, on account of limitations of personnel, can amount to little more than occasional inspection and stimulation.^{6(p188)}

Around the turn of the century, the Marine Hospital Service (which was to become officially known as the Public Health Service [PHS] in 1912) began to take increased interest in rural health on the basis of studies of typhoid fever. Many urban cases were brought in by persons or products from nearby rural areas; likewise, many rural cases appeared to be transmitted by visiting urbanites. Concerns related to rural transmission of diseases, such as hookworm disease, typhoid fever, and later pellagra, were the impetus for the establishment of county health departments.^{3(pp232–233), 7(pp1–2)}

The first county health departments grew out of the municipal health department movement. That is, they were developed in counties that had a significant urban population, but their purview was expanded to include the areas surrounding the urban centers to address growing sanitary needs. Jefferson County, Kentucky (Louisville), is often credited as the first county health department, established in 1908 and as such may be considered the first LHD providing rural public health services. Guilford County, North Carolina (Greensboro), followed in 1911 seeking to expand its school health program; Yakima County, Washington (North Yakima), also followed in 1911 after a typhoid epidemic. The first exclusively rural county health department was established in 1912 in Robeson County, North Carolina, with a population of 52 500 and no town with a population more than 2 500.^{3(pp232), 7(pp2–5)}

Most county health departments were established with outside support, often from private foundations. In his 1929 report, Lumsden^{8(p1202)} estimated that of the 467 rural health departments he studied, 88 percent received outside financial assistance. Among foundations, the first to take a significant interest in rural public health, and subsequently to provide seed funding for county health departments, was the Rockefeller Foundation. In 1909, the foundation organized the Sanitary Commission to Exterminate Hookworm Disease and conducted community-level surveys in nine states to assess the extent of the disease. The commission found infection rates as high as 43 percent among the 404 000 children inspected but was particularly surprised to find that the majority of homes and schools did not have privies.^{3(p228), 9} Between 1910 and 1913, the Rockefeller Foundation developed health programs in rural counties, which often led to the development of full-time county health departments in three successive stages. First, counties were funded to educate medical pro-

fessionals and the public about the importance, prevalence, diagnosis, and treatment of hookworm disease. Second, funds were provided to sanitize communities to protect against hookworm disease, typhoid fever, and other diseases spread through human excreta. Finally, funds were provided for the employment of full-time personnel within the counties to enable continued work in these areas. Starting in 1916, the Rockefeller Foundation began contributing directly to the budgets of county health departments.^{7(p6)}

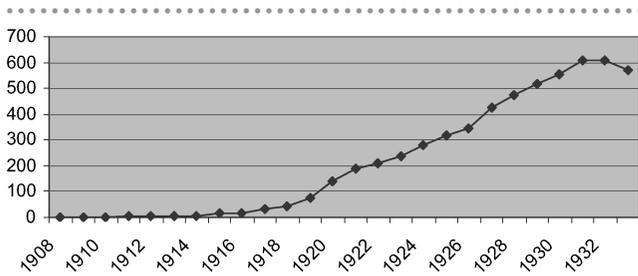
Other foundations helping establish county health departments in rural areas during this time included the following:

- the Milbank Memorial Fund, which in 1922 provided funds to help establish a rural health department in Cattaraugus County, New York;
- the Commonwealth Fund, which in 1924 provided funds to help establish a rural health department in Rutherford County, Tennessee, as part of its child health demonstration program;
- the Children's Fund of Michigan, which began assisting in the formation of district health department units in northern Michigan in the late 1920s; and
- the W.K. Kellogg Foundation, which similarly helped establish district units in southwest Michigan in 1931.^{3,10(p8)}

Other organizations providing funding to county health departments in the 1920s included the American Red Cross and the Tuberculosis Association.^{7(p11)}

The Cattaraugus County and Rutherford County initiatives in particular, both rural demonstration projects, each had a significant influence on the expansion of rural health departments in their respective states and nationally.^{11(pp20–23), 12(p15)} The Milbank Memorial Fund in its centennial report noted the following results from the Cattaraugus County demonstration project: deaths from tuberculosis, which at that time were generally decreasing, declined more quickly in Cattaraugus County than in comparison counties, from 55 per 100 000 people in 1929 to 25 in 1930; the infant mortality rate also fell more quickly; and the project launched a successful countywide school health service. The report goes on to note that other rural counties launched their own health departments on the basis of the success of this demonstration. Furthermore, in a report commissioned by the fund 25 years following the demonstration, Yale University researchers noted that “the entire progress made in the United States in developing health services for rural areas owes its inception to Cattaraugus County.”^{12(p15)}

The PHS also began to provide funding to rural health departments in the 1920s, first in partnership with the Rockefeller Foundation, which together helped establish 20 full-time county health departments

FIGURE 1 ● Number of County Public Health Units, 1908–1933

in Kentucky following a series of floods in 1927. Federal funding was inconsistent, however, with a 1936 PHS report noting that “funds have been inadequate and so uncertain as to amount that long-term planning has not been practicable.” The report goes on to state that “the need of a substantial, consistent, long-term program of Federal support for the rural health service is recognized by practically all authorities in the public health field.”^{7(p10)}

All told, the number of county health departments increased rapidly from 1 in 1908 to 610 in 1932; the number dropped to 569 in 1933 as a result of economic pressures from the Great Depression. Interestingly, had there been no closures among established county health departments, there would have been 754 county health departments operating in 38 states at the close of 1933. Reasons stated for the failures were “mediocre personnel, the establishment of units before public opinion was prepared for them, inadequate leadership from State health departments (administrative and financial), politics, and the starting of work in counties too weak to function effectively.”^{7(pp10,63)} Despite the rapid increase in the number of health departments, it was estimated in 1929 that 77 percent of rural Americans still lacked access to public health services (Figure 1).^{8(p1207)}

In the 1930s, new sources of funding became available to state and local health departments through the passage of New Deal programs such as the Works Progress Administration (WPA), the Public Works Administration (PWA), and the Federal Emergency Relief Administration (FERA), the latter of which in 1934 allocated \$1 million to the PHS for use in rural areas. All three of these agencies began providing nursing and other public health services to state and local health departments, including a FERA “Health Inventory” of more than 850 000 families in cities, towns, and rural areas.^{3(p258)} Also, during this time, the Social Security Act of 1935¹³ was passed, creating another significant resource for state and local public health agencies. As a result of these federal funds, several states reported significant expansion and reorganization of their public health units during the late 1930s.^{3(p258)}

Sometime after the 1930s, because incidences of many of the diseases that provided the impetus for the development of county health units were greatly reduced through sanitary measures and immunization, rural health attention shifted away from population measures to the delivery of healthcare services, which were severely lacking in most of rural America. The Hill-Burton Act of 1945¹⁴ provided states with funding to develop statewide comprehensive hospital systems, leading to numerous hospital and health center construction initiatives in rural areas. As a result of this shift in focus, relatively little data have been collected on the provision of public health services in rural areas over the past 50 years. As observed by Terris in 1976,

In the 30 years preceding the end of World War II, local and state health departments and the U.S. Public Health Service grew and flourished as guardians of the people’s health. In the subsequent 30 years, health departments have lost much of their momentum.^{15(p1155)}

● How Has Rural Public Health Practice Evolved?

Two cornerstones of early rural public health efforts remain as important today as ever—environmental health and public health nursing. Environmental health or sanitation, as previously described, has historically been a central feature of public health activities in rural and urban communities.³ Rural public health departments, in particular, have focused efforts on improving sanitation and water supplies.³ In addition to traditional environmental health activities, rural environmental health practitioners are facing emerging issues, some of which were thought to be primarily issues for urban communities. For example, the 2001 anthrax attacks targeted urban communities, but many rural communities identified “potential” anthrax exposures that required investigation and testing. Another emerging issue for rural America is *agroterrorism*, the intentional or threatened use of chemicals against food or animals, which poses a threat to our nation’s food supply.¹⁶ The nation’s food supply is also vulnerable to unintentional contaminations, such as the 2006 outbreak of *Escherichia coli* O157:H7 illness associated with fresh spinach, which sanitarians were called upon to address.¹⁷ Yet, one of the most challenging issues of the past decade for rural environmental healthcare practitioners is the cleanup of toxic methamphetamine laboratory sites.¹⁸ Without question, environmental health continues to play a pivotal role in the rural public health system. The ongoing challenge is to find opportunities to enhance rural environmental healthcare practitioners’ training to meet emerging threats while providing for the current needs of their rural communities.

Public health nursing also remains a critical feature of rural public health service as identified in the 2005 National Profile of Local Health Departments Study.¹⁹ Specifically, the number of nurses per thousand residents is twice as high for small town rural LHDs as for other LHDs (0.30 vs 0.15). The first rural LHDs were staffed primarily by public health nurses who provided immunizations and individual healthcare services because of a lack of access to healthcare in rural America. During the late 20th century, public health practice moved (and continues to move) from providing individual services toward a population focus that includes assessing, planning for, and ensuring the health of populations.²⁰ However, this shift from health service delivery to population health activities has been slower in rural LHDs than in urban LHDs. One reason that some rural LHDs continue to provide healthcare services is because rural populations are more likely than urban populations to have limited access to healthcare due to financial, geographic, and cultural barriers.²¹ Another reason that rural public health relies more heavily on healthcare services is because it generates revenue. In a recent study comparing rural public health financing with urban public health financing, it was found that rural LHDs received a higher proportion of revenue from clinical sources than did urban LHDs.²² Also contributing to the slower uptake on providing population-based public health services in rural LHDs is the difficulty recruiting qualified public health nurses who have training in population-based practice and grant-writing skills.²³ Although rural public health nurses have traditionally partnered with community organizations, such as hospitals, rural health clinics, churches, and civic groups, population-based health activities have made network development a priority. For example, many rural public health nurses take the lead in conducting and disseminating community health assessments and grant-writing activities for their rural communities. These population-based services require a significantly different skill set than those required of rural public health nurses even 20 years ago. A constant challenge for public health in general, and rural public health in particular, is ensuring that the public health workforce has the skills and the requisite training and education to carry out the activities required in a population-based public health system.

● Conclusion: A Look to the Future of Rural Public Health

It is noteworthy that the history of governmental rural public health can largely be encapsulated in the years spanning 1908 (establishment of the Jefferson County

Health Department) to 1945 (passage of the Hill-Burton Act). Prior to 1908, the focus of public health was almost exclusively urban, and since 1945, the focus of rural health has been largely on the important issue of access to healthcare services. The “lost momentum” of health departments that was noted by Terris^{13(pp1155-1164)} in 1976 continues today and is an important issue for further study. We are now facing new challenges to meet the public health needs of rural America, and these challenges are significantly driven by changing demographics. First, rural America is aging—the proportion of older Americans residing in rural areas is generally higher than in urban areas. Likewise, there are also changes in the racial and ethnic groups residing in rural America. The greatest population growth in rural America is among Native Americans, African Americans, Hispanics, and migrant populations, whereas the growth rates among the non-Hispanic white population were the lowest.²⁴ These demographic changes will at least require that cultural competence be included as a key component in the ongoing development of the rural public health system. In addition, public health issues facing these populations such as access to healthcare, environmental exposures, and health disparities require an even more flexible rural public health system than the traditional rural public health models have supported.

Health disparities between rural and urban citizens are well documented, and emerging public health threats related to infectious diseases such as pandemic influenza, or man-made threats related to terrorism, necessitate a robust public health system that can uniformly identify, track, and contain these threats while working to improve overall community health status. An essential element to address these emerging concerns is an appropriately funded rural public health system with an adequately educated and trained rural public health workforce.

So, what does the future of rural public health look like? Given the unprecedented resources that have been provided to state and local health departments over recent years to improve disease tracking and emergency response, there is reason for optimism. And yet, we still appear to be as far from a uniform, high-functioning public health system that serves both rural and urban communities as we were prior to the infusion of these funds. Ultimately, rural communities should have access to the same protective measures afforded by the public health system as their urban counterparts. How these services are prioritized and provided may differ for rural communities, but access to public health services should be equitable. To achieve this equity, research is needed to determine unique rural public health needs, models for delivering public health services in rural communities, and practice standards that

help realize a consistency of public health services available across state and local systems.

The long-standing myth that rural America is clean and healthy appears omnipresent among much of the American population, as well as among decision makers. Without strong rural LHDs in place to assess community health needs and report disparities among rural populations, this myth is likely to persist. Without a sufficient rural public health knowledge base, it will remain difficult to strengthen our rural public health partners to perform at optimal levels, thus creating even greater health disparities between rural and urban Americans.

How can we strengthen rural public health by increasing the knowledge base? First, we need to conduct practice-based research in rural communities to identify evidence-based rural public health practices. The 2004 report "Bridging the Health Divide: The Rural Public Health Research Agenda," developed with a group of public health researchers and professionals at the local, state, and national levels from across the country, identifies some key focus areas for rural public health research.^{25(p4)} Second, we need to provide training and education to rural public health professionals on issues they will encounter in their practice, which may be similar to urban communities but may also be unique to the rural environment. The delivery of public health services in rural America is a unique pursuit within the field of public health, calling for public health academicians to develop targeted rural public health training programs and to provide experiential training in rural public health settings.

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