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Public Health Practice: An Emerging Priority

Joyce Addo-Atuah*

Professor, Department of Social/Behavioural/Administrative Sciences, Chair, Faculty Council, Touro College of Pharmacy, USA

Perspective

In recent years, practice-based initiatives to improve public health delivery have far outpaced the development of rigorous research studies in public health practice that are needed to inform and guide the public health system's attempt to improve its performance and community health status. As a result, the methods currently used to measure performance and stimulate improvements stand on a relatively thin scientific base. The IOM acknowledged this problem in 2003 in a follow-up to its original 1988 report on the public health system, noting in its preamble:

The Committee had hoped to provide specific guidance elaborating on the types and levels of workforce, infrastructure, related resources, and financial investments necessary to ensure the availability of essential public health services to all of the nation's communities. However, such evidence is limited, and there is no agenda or support for this type of research, despite the critical need for such data to promote and protect the nation's health.

Much of the existing research on public health services and delivery systems is descriptive in nature, providing an important base for future studies but offering little specific guidance to public health decision makers concerning how to improve practice. For example, recent studies provide a detailed view of how public health agencies are organized, what types of services they provide, and how these agencies are staffed and financed. These studies highlight the extreme heterogeneity in organization and operation that exists across the nation's public health system. Data from 2005, for example, indicate that the smallest local public health agencies spend < $1 per capita on their operations while the largest agencies spend > $200 per capita. This heterogeneity complicates the task of conducting rigorous, comparative studies of public health practice. Nevertheless, recent work has demonstrated the feasibility of classifying public health agencies and delivery systems into relatively homogenous groups for the purposes of analysis and comparison.

In a similar vein, researchers have used measures of performance from self-assessment instruments such as the NPHPSP to document wide variation in the range of activities performed by public health agencies, and to explore the institutional and economic characteristics that account for some of this variation. While these types of studies offer important insight into the delivery of public health services, their utility and relevance are limited by the fact that there are currently no objective, validated methods for measuring the quality of public health practice along dimensions such as effectiveness, timeliness, efficiency, and equity. Fortunately, advances in the fields of behavioural research and prevention research are leading to the discovery of an expanding collection of efficacious public health interventions, which then can be translated into evidence-based guidelines for public health practice in sources such as the U.S. Department of Health and Human Services' Guide to Community Preventive Services. These types of guidelines offer a starting point for creating process-based quality measures that reflect the extent to which public health agencies provide guideline-concordant services. Researchers recently have begun to explore methods of measuring guideline-concordant public health practice in areas such as emergency preparedness and obesity prevention but further methodological advances are needed.

Policy and administrative decision makers are increasingly interested in understanding the health and economic impact of investments in public health activities, but so far relatively few studies have progressed to the stage of being able to isolate these effects reliably. Conducting outcomes research on public health practice is complicated by the fact that many population health outcomes are determined by the cumulative impact of multiple factors over relatively long periods of time, making it difficult to isolate the contributions made by the actions of public health agencies. Heavy reliance on observational research designs and aggregated measures of population health makes these studies vulnerable to problems of selection bias, confounding, endogeneity, and ecological fallacy. Moreover, these studies often focus on outcomes that are relatively rare events such as infectious disease outbreaks, natural disasters, or deaths from specific, preventable causes. Achieving sufficient statistical power and precision to estimate the impact of public health agencies and actions on these types of outcomes can be challenging, particularly in small areas.

A number of federal, state, and foundation-supported initiatives are now underway to expand the quantity and quality of research on public health services and systems. At the federal level, CDC began convening groups of researchers, public health officials, and other stakeholders as early as 2002 to stimulate thinking on new avenues of inquiry. An early product of CDC's effort was the establishment of an interest group dedicated to public health systems and services research within Academy Health, the professional association for health services researchers. Now supported by the Robert Wood Johnson Foundation, this interest group organizes annual scientific meetings where researchers share insight from ongoing research projects and discuss issues encountered in applying the methods of health services research to problems in public health practice. At about the same time, CDC brought together a diverse collection of researchers and public health officials to develop the first national research agenda for public health services and systems. This broad-based agenda was later supplemented with research agendas devoted to public health workforce issues, public health finance and economics, public health preparedness, and rural public health practice.

Efforts are also underway to expand the limited funding available for studies of public health services and delivery systems a fact that has long constrained the development of this field of inquiry. The CDC's Public Health Practice Program Office periodically secured modest funding levels for this type of research during the 1990s and early 2000s, but a stable and ongoing source of support did not exist at CDC, and the demise of this office during CDC's 2004 reorganization placed continued federal funding in question. In 2005, the Robert Wood Johnson Foundation made a significant commitment to this field of research by establishing a competitive research grant program in public health services and systems research, administered through its Changes in Health Care Financing and Organization (HCFO) program housed at Academy Health. The Foundation committed $10 million in research funding over a 3-year period to this effort. Additionally, the Foundation partnered with the University of Kentucky to launch a mini-grant program offering small research awards to fund dissertation research and pilot studies by junior researchers. More recently, the foundation has made additional funding available for targeted research studies in public health involving practice-based research networks, public health policy and law, and quality improvement research. At the same time, the federal government has stepped up investments in this area of research through the creation of a network of university-based centres for public health systems research related to emergency preparedness.

***Address for Correspondence:** Joyce Addo-Atuah, Professor, Department of Social/Behavioural/Administrative Sciences, Chair, Faculty Council, Touro College of Pharmacy, USA , E-mail: joyceaddo-atuah31@gmail.com*

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Those efforts are beginning to bear fruit, as is evidenced by this supplement. Papers herein address a range of issues. For example, understanding that it is challenging to aggregate findings across studies that are conducted differently, Merrill, Keeling and Gebbie offer a starting point with an empirically derived taxonomy for the essential work of public health departments. This should support the use of common variable definitions in studies that use public health system structural measures as variables. Wholey, Gregg, and Moscovice attempt to examine aspects of the structure of public health systems, proposing, as have others, that social network analysis can be used to characterize the ways health departments partner with others in their work. Approaching the field from a systems perspective, Riley reported on their experience with introducing quality improvement techniques to public health departments in Minnesota. Their work complements recent work by Lotstein et al. by suggesting that the quality improvement approaches can lead to enhanced system performance.

At the same time, Riley and Lotstein use different approaches to introducing these skills to health departments, raising a typical HSR question whether different processes lead to different outcomes. Finally, two papers address the critical issue of how public health is financed. Understanding that taxpayers must get value for their investments in public health, Jacobson and Neumann offer a framework with which to consider the valuation of public health services. And, looking at financing from a variations perspective, Mays and Smith demonstrate that regional medical care expenditures are inversely related to public health expenditures. In other words, communities with the highest per capita health care expenditures have the lowest public health expenditures, and vice versa. Each of these papers, in turn, raises additional questions about how public health services should be organized and financed, and at least indirectly, raises the critical issue of how to better integrate and align our medical care and public health systems.

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