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Public Health Practice-Based Research Networks

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## USING PUBLIC HEALTH PBRN RESEARCH TO INFORM POLICY & PRACTICE

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### BACKGROUND

The *Public Health Practice-Based Research Networks Program* is a national program of the Robert Wood Johnson Foundation that supports research networks dedicated to producing new scientific knowledge on how best to organize, finance, and deliver public health strategies in real-world practice settings. This body of scientific inquiry, known as Public Health Services and Systems Research (PHSSR), is a rapidly developing area of scholarship within the larger fields of public health research and health services research. A public health practice-based research network (PBRN) brings multiple public health organizations into collaboration with an academic research center for the purposes of designing and implementing PHSSR studies in real-world practice settings. Participating public health professionals and researchers collaborate to identify pressing research questions of interest, design rigorous and relevant studies, execute research effectively and efficiently, and translate findings rapidly into practice.

The Public Health PBRN program currently includes 12 core research networks distributed across the U.S. and more than 10 affiliate and emerging networks under development. The program supports research in PBRNs through three primary mechanisms:

1. Preliminary Investigation Projects (PIPs), small-scale projects that newly developing networks pursue as initial, proof-of-concept studies designed to inform future work;
2. Research Implementation Awards (RIAs), larger-scale projects conducted by established PBRNs and designed to support inferences about causes and consequences of variation in public health practice; and
3. Quick-Strike Research Fund (QSRF) awards that support short-term, time-sensitive studies on emerging issues in practice and policy.

The National Coordinating Center based at the University of Kentucky College of Public Health coordinates the development of individual and multi-network PBRN studies.

This brief provides examples of how findings from RWJF-supported research projects underway through the public health PBRNs and the larger field of PHSSR are being used to inform public health practice and policy.

### EXAMPLES OF RESEARCH UTILIZATION & IMPACT

**Causes and Consequences of Variation in Public Health Spending:** Glen Mays and colleagues from the PBRN National Coordinating Center at UAMS linked together multiple national databases spanning a 12-year period and used advanced statistical and econometric analysis techniques to

investigate the causes and consequences of geographic variation in local public health spending across the U.S. This RWJF-funded study found that communities with larger growth in public health spending per capita during the 1993- 2005 period experienced slower growth in medical care spending and larger reductions in mortality from leading preventable causes of death, including infant mortality and deaths due to cardiovascular disease, diabetes, and cancer. These effects became evident only after careful analytic methods were used to account for the many confounding processes that simultaneously influence public health spending and population health outcomes. The findings suggested that increasing public health investments in communities with historically low levels of spending may provide an effective way of constraining medical cost growth and reducing geographic disparities in health.<sup>1</sup>

This research has been used by policy analysts and public health officials at the state level to inform decision-making concerning investments in public health infrastructure. For example, the study figured prominently in the decision by the Arkansas legislature in 2009 to raise its excise tax on tobacco products by 56 cents and allocate significant portions of the revenue to new and expanded public health activities. Other states have used the findings to inform decisions on how best to respond to state budget shortfalls precipitated by the economic downturn, helping to insulate the most vital public health activities from the largest funding cuts. At the federal level, these findings have been used to inform policy decisions concerning the design and implementation of the Public Health and Prevention Fund as part of the 2010 Patient Protection and Affordable Care Act (ACA). The Trust for America's Health (TFAH) and other public health advocacy organizations used this study as part of the evidence indicating a need to include a fund for public health within the federal health reform legislation. Similarly, officials from the Congressional Budget Office requested a briefing on this study and its findings as part of their evidence review to inform scoring and economic analysis of the public health components of the ACA legislation. Similarly, officials at the White House Office of Management and Budget (OMB) requested a briefing on these findings to inform their implementation and evaluation decisions concerning the Fund. And the Institute of Medicine has reviewed the study and its findings as part of its work to develop federal policy recommendations for new ways of financing public health services in the U.S. At the local level, numerous local public health officials have requested copies of the publications and presentations from this study to use in educating their local governing boards, elected officials, and other political stakeholders about the potential value of investments in local public health infrastructure.

To extend this body of evidence, RWJF-funded Public Health PBRNs have stepped in with new research projects designed to monitor the effects of recent and anticipated public health spending reductions associated with the economic downturn and state budget shortfalls. Networks in Washington, Wisconsin, Connecticut, Florida, and North Carolina now have studies underway to monitor the effects of state-specific spending reductions on service delivery and proximal outcomes. And a multi-network study involving 11 RWJF-funded PBRNs is now underway to track changes in public health service volume and intensity across state and local areas, based in large measure on pioneering work conducted in the Washington PBRN.

**Returns to Scale and Alternative Delivery System Models:** Recent PHSSR studies have focused on alternative ways of organizing and delivering public health services, with a specific focus on delivery system size and capacity as key determinants of system performance. An RWJF-funded study by Glen Mays and Douglas Scutchfield collected and analyzed data on a national sample of local public health delivery systems to develop an evidence-based typology of the organizational structures that characterize these systems. Among other findings, this study confirmed the “returns

to scale” hypothesis by finding that systems serving larger populations are able to deliver a broader scope of public health activities and achieve higher ratings on the perceived effectiveness of these activities.<sup>2</sup> This research suggested that public health delivery could be improved significantly through efforts to pool the resources and skills of small public health systems, such as through consolidation, shared staffing and service arrangements, and other models of coordination that allow systems to combine resources and operations.<sup>3,4</sup> Other RWJF-funded research by Michael Stoto and Howard Koh found similar results using qualitative studies of local public health preparedness capacities.<sup>5</sup>

These studies have informed the design and development of regional public health delivery models in a growing number of states and communities, much like the regionalized medical care models motivated by research on volume-outcome relationships.<sup>6</sup> For example, local and state health officials in Massachusetts, Nebraska, and Kansas have used the findings from these PHSSR studies in developing their state-based approaches to regional public health delivery. A more recent initiative now under development in Georgia also is drawing upon this evidence base to inform the policy and practices surrounding its regional quality improvement collaboratives for public health services.

As states have begun to develop and test these new delivery system models, RWJF-funded Public Health PBRNs have stepped in with research projects to investigate the implementation and impact of these models. PBRNs in Massachusetts and Nebraska are conducting comparative studies of alternative approaches to implementing regional public health delivery systems. The Colorado Public Health PBRN is investigating the effects of a new state public health modernization law on the efforts of local health departments to organize regional public health delivery approaches. And the Connecticut PBRN is using a QSRF award to examine the effects of a recent state public health funding cut on local regionalization and consolidation initiatives. To enable mid-course corrections in policy and practice, each of the PBRN research projects regularly feeds back interim findings and lessons learned to public health decision-makers within their states. In Massachusetts, the PBRN’s research on regionalization strategies led the state government to designate the PBRN to play leading roles in analytic and performance measurement activities under its CDC-funded Strengthening Public Health Infrastructure for Improved Health Outcomes Initiative. In Colorado, the PBRN’s research on delivery system responses to the state public health reform law provided early evidence of implementation progress that helped to preserve state funding for the law in the face of recent state budget shortfalls.

**Public Health Responses to Newly Emerging Threats:** In the midst of the outbreak of the novel H1N1 influenza virus in Spring 2009, public health PBRNs quickly mobilized to use the event to study the nature and effectiveness of local public health response activities. Using a standard research protocol and instruments developed by the PBRN Coordinating Center, networks in Kentucky and North Carolina conducted a detailed analysis of local variation in H1N1 response activities. In Kentucky, the research uncovered critical gaps in communication between public health agencies, primary care providers, and pharmacies that hampered some response and mitigation activities. In North Carolina, the study found wide variation across communities in both the scope and timing of H1N1 response activities, indicating a need for greater standardization in response protocols and in the criteria that trigger their implementation. The North Carolina PBRN’s study, expanded through a collaboration with the CDC-funded Preparedness and Emergency Response Research Center (PERRC), also revealed several important determinants of community residents’ intent to comply with H1N1 vaccination recommendations, highlighting a need for

enhanced public communication about the benefits of vaccination in the months just prior to the vaccine being publicly available.

Findings from these studies were used by state health agencies and health care professional associations to enhance the content and specificity of their emergency response protocols, particularly in the areas of emergency communication and guideline dissemination. North Carolina's vaccination findings were disseminated nationally through an MMWR article in time to inform the vaccination strategies of CDC and state health agencies across the U.S. Public health PBRNs in several other states launched similar, retrospective studies of H1N1 response to extend these findings to other public health settings and provide state-specific data and lessons to inform public health officials.

**Public Health Accreditation and QI:** Decision-makers in public health administration and policy have turned to accreditation programs and quality improvement strategies as promising mechanisms for enhancing the value of investments in public health delivery. To inform these efforts, the RWJF-funded public health PBRNs have developed studies to produce rigorous empirical evidence about the implementation and impact of these mechanisms. The North Carolina PBRN, for example, used its H1N1 study to compare the response activities of agencies that had and had not participated in the state's public health agency accreditation program. The study found that accredited agencies performed a more comprehensive scope of H1N1 response activities and initiated them faster than did their non-accredited agency counterparts, suggesting some tangible benefits of accreditation. These findings have proved highly influential in informing state policy decisions regarding continued funding for accreditation in the face of state budget shortfalls.

Findings also have been used by the Public Health Accreditation Board (PHAB) to inform design and evaluation elements of the national accreditation program for public health agencies. In Kentucky, the PBRN engaged in a structured vetting process for the draft accreditation standards developed by the national PHAB accreditation program, producing valuable feedback about face validity and feasibility to PHAB for use in revising the standards. And in Massachusetts, the PBRN is validating and applying PHAB metrics to examine local variation in public health agency surveillance and epidemiological investigation practices. These and similar PBRN activities are informing the development, refinement, and application of accreditation and QI mechanisms in public health practice.

## **IMPLICATIONS AND NEXT STEPS**

The Public Health PBRNs—like the larger field of PHSSR—are early in their developmental history. The first Public Health PBRNs began their operations in December 2008, and have only recently begun to produce and synthesize findings from their investigations and engage in large-scale, multi-network research projects. Their success in producing new knowledge that informs the practice and policy communities is particularly notable in light of their brief tenure in the PHSSR field. Nevertheless, a broad array of research projects is now underway through the 12 RWJF-funded PBRNs, and still more projects are being organized through the growing contingent of newly emerging PBRNs that have joined the program as affiliate networks. An appendix to this document provides a more detailed list of the research projects underway through the Public Health PBRNs. These projects will substantially strengthen the ability of the PHSSR field to inform the decisions faced by public health professionals and policy-makers.

## FOR MORE INFORMATION

The Public Health PBRN National Coordinating Center is located at the University of Kentucky College of Public Health. For more information visit [www.publichealthsystems.org/pbm](http://www.publichealthsystems.org/pbm)

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