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Robert Wood Johnson Foundation Practice-Based Research Networks in Public Health

A Progress Report on a program to improve the performance and capacity of public health agencies and systems

INTRODUCTION

Public health practice-based research networks (PBRNs) are practice-driven partnerships between public health practitioners and researchers who collaboratively identify, design, and carry out research studies on the organization, financing, and delivery of public health services. The goal of these networks, each located within a single state, is to improve the performance and capacity of local and state public health agencies and systems.

The RWJF national program Practice-Based Research Networks in Public Health *has established 12 public health PBRNs. These networks, and 16 other networks established on their own, receive technical assistance, dissemination support, and opportunities to apply for research grants from the National Coordinating Center at the University of Kentucky.*

The RWJF Board of Trustees has approved three authorizations totaling up to $9.325 million for the networks since October 2007. Funding runs through November 2015.

See the Appendix for a list of people interviewed for this report.

WHAT ARE PUBLIC HEALTH PBRNS?

Public health PBRNs are "groups of practitioners and researchers who determine research agendas jointly, conduct research collaboratively, and use the results of research to inform the practice of state and local health departments," says Robert Pestronk, MPH, executive director of the National Association of County and City Health Officials (NACCHO), which represents local health departments across the United States.

Paul K. Halverson, DrPH, a member of the public health PBRN national advisory committee, has worn both a practice and a research hat—as director of the Arkansas Department of Health *and* Professor of Public Health Policy and Management at the University of Arkansas Medical School—positions he left since the interview for this

report to become the founding dean of the University of Indiana's Richard M. Fairbanks School of Public Health. Halverson describes the networks as settings in which academic researchers and public health practitioners "together explore both the topics that will make a difference in practice as well as look for ways to expand the body of knowledge that describes contemporary public health practice."

The networks were first established as part of RWJF's public health PBRN program. Naima Wong, PhD, MPH, RWJF program officer, notes the importance of the network structure. "People have said 'When you've seen one public health department, you've seen one public health department.' So it is important that the issues addressed go beyond one public health department—and networks make that happen."

"We are trying not to repeat the same errors that medical research went through before they learned and started partnering with patients and the medical delivery system."—Glen P. Mays, PhD, MPH, program director

Where did they come from?

Public health PBRNs are building on the PBRNs made up of clinicians and researchers that began studying ways to improve medical care in the 1980s.[1] "Medicine has learned you can't do medical research in a vacuum," says Glen P. Mays, PhD, MPH, director of the National Coordinating Center for the *Practice-Based Research Networks in Public Health* at the University of Kentucky. "We are trying not to repeat the same errors that medical research went through before they learned and started partnering with patients and the medical delivery system." Mays is the F. Douglas Scutchfield Endowed Professor in Health Services and Systems Research at the University of Kentucky.

Why study public health agencies and systems?

More than 75 percent of current health care costs are due to diseases that are largely preventable, according to the Centers for Disease Control and Prevention (CDC).[2] Yet,

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[1] In August 2002, RWJF funded a national program, *Prescription for Health: Promoting Healthy Behaviors in Primary Care Networks*. See Program Results Report at *www.rwjf.org/en/research-publications/find-rwjf-research/2011/01/prescription-for-health-.html* and a report on the diffusion of the model at *www.rwjf.org/en/research-publications/find-rwjf-research/2012/11/diffusion-of-a-model-for-addressing-behavioral-health-issues-in-.html* for more information.

[2] Centers for Disease Control and Prevention. *Chronic Illness: The Power to Prevent, the Call to Control.* Atlanta: Centers for Disease Control and Prevention, 2009. Available at *www.cdc.gov/chronicdisease/resources/publications/aag/chronic.htm*.

there is very little evidence about how best to organize, finance, and deliver public health services to prevent these diseases and reduce their costs.

Problems with evidence take several forms. When evidence-based strategies are available, they are rarely feasible (due to logistics, cost, and politics) for the problems that public health professionals routinely act on, such as preventing HIV. Also, communities vary widely in their use of available evidence-based strategies, such as engaging the community in assessment (identifying health and resource needs, concerns, values, and community assets) and decision-making.

> *"We knew we had to produce evidence that would drive improvements in the public health systems that would in turn, improve public health,"*—Glen Mays, program director

Evidence of what works in public health is difficult to establish but especially important because public health services are delivered through multiple governmental and private agencies characterized by wide variation in resources and relationships.

"We have recognized for a long time that there is a thin evidence base to support the everyday decisions made in public health policy and practice. We knew we had to produce evidence that would drive improvements in the public health systems that would in turn, improve public health," says Mays. This research has to be done in the real world, using knowledge that is already available in the communities.

Where do networks fit within other RWJF efforts to build the public health evidence base?

Public health PBRNs are part of the emerging field of public health services and systems research, which "examines the organization, financing, and delivery of public health services within communities, and the impact of these services on public health," according to an article by Mays and colleagues.[3]

RWJF's commitment to developing this field includes the practice-based networks program and the *Public Health Services and Systems Research Program*,[4] Wong says. "I

[3] Mays GP, Halverson PK, and Scutchfield FD. "Making Public Health Improvement Real: The Vital Role of Systems Research." *Journal of Public Health Management and Practice*, 10(3): 183–185, 2004.

[4] Other RWJF-supported activities include $12.5 million for a national program, *Creating Resources for Data Gathering and Study to Strengthen the Evidence Base, Performance, and Impact of Federal, State, and Local Public Health* and for grants to three public health associations (National Association of County

see the field building we are doing in *Public Health Services and Systems Research* program as the overarching frame. The networks are a vehicle within which the field building goes on."

The *Public Health Services and Systems Research Program* has developed a new research agenda to guide the future of the field. The University of Kentucky is also the National Coordinating Center for this program, under the direction of F. Douglas Scutchfield, MD. Scutchfield and Mays and the two programs join forces to conduct research, support other researchers, and disseminate findings to practitioners and policy-makers.

See the *Public Health Services and Systems Research Program* website for more information on this program.

> *"We have tried to not have the networks based in and controlled by the academics. We wanted the local health department to be the lead,"*—Glen Mays, program director

HOW DO THE PUBLIC HEALTH PBRNS WORK?

Program Management and Guidance

RWJF established the National Coordinating Center at the University of Kentucky to oversee the creation and operation of the public health PBRNs, and tapped Mays to run it. Anna Goodman Hoover, MA, PhD, is the deputy director.

Mays in turn established a national advisory committee of public health researchers and practitioners to help center staff select the networks, review ideas for studies, and disseminate findings. The committee "provides a sounding board to try out new ideas, give feedback on research approaches, and engage on a number of issues that are really important," according to committee member Halverson.

The Funded Networks

Through two rounds of competition and in consultation with RWJF staff, the national advisory committee, and other experts, the National Coordinating Center selected applicants in 12 states for funding. The first group of networks—Colorado, Kentucky,

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and City Health Officials, Association of State and Territorial Health Officials, and the National Association of Local Boards of Health). See Program Results Report at *www.rwjf.org/en/research-publications/find-rwjf-research/2011/05/strengthening-the-performance-and-impact-of-public-health-depart.html*.

Massachusetts, North Carolina, and Washington—began operations in December 2008. The second group—Connecticut, Florida, Minnesota, Nebraska, New York, Ohio, and Wisconsin—began in December 2009.

Networks received up to $90,000 for two years, plus in-depth technical assistance to establish an infrastructure, select a lead agency, recruit partners, identify technical assistance needs, and develop and conduct a preliminary small-scale research project. They can also apply to the coordinating center for competitive research grants (described below).

To increase the likelihood that research studies would meet the needs of public health practitioners, in selecting the networks, preference was given to applicants from public health agencies or nonprofit organizations. "We have tried to not have the networks based in and controlled by the academics. We wanted the local health department to be the lead," says Mays.

> *"I was impressed that there was enough enthusiasm that even without the seed money, others would join,"*—Carolyn Leep, MS, MPH, senior director of research and evaluation at NACCHO

Only one network, Ohio, is housed in an academic center, at Case Western Reserve University. The program director, Scott Frank, MD, MS, knows that the involvement of Ohio's health departments is essential. "We have 125 local health departments in our network, and we believe we have had participation from at least 110 of them," he says.

The Affiliate Networks

When word got out about the networks, interest was so high that Mays created a parallel affiliate program for networks that did not receive RWJF funds. Affiliates meet the same criteria as funded networks and have access to technical assistance, networking opportunities, and funds for research grants from the National Coordinating Center.

By April 2013, 16 affiliates had joined the program: Alabama, Arkansas, California, Georgia, Illinois, Iowa, Kansas, Maryland, Missouri, New Hampshire, New Jersey, Pennsylvania, South Carolina, Tennessee, Texas, and Vermont.

"I was impressed that there was enough enthusiasm that even without the seed money, others would join," said Carolyn Leep, MS, MPH, senior director of research and evaluation at NACCHO.

Why Technical Assistance Is So Important

The public health PBRNs are young entities involving an array of partners trying to collaborate in new ways. Mays and his colleagues created a system of technical assistance, training, and peer-learning opportunities to help the networks develop their infrastructures, build relationships, and execute their research projects. "The networks involve partnerships," he says, "so they need help in decision-making and governance, collaboration, and engaging the right talent pool from the academic side."

> *"The research faculty have to be concerned not just about what is interesting—but also what can be funded."*—National Advisory Committee member Paul K. Halverson, DrPH

The National Coordinating Center helped the 12 RWJF-funded networks complete a needs assessment and visited each one to discuss its plans for network development and research initiation. All of the networks continue to have access to other types of assistance, including web-based meetings, webinars, conference calls, center publications, electronic resources, and an annual meeting.

The web-based meetings, focused on research-in-progress, are especially useful for Minnesota's network. "They start with a review of emerging research from a network. That is a timely and insightful way to know what other networks are doing," says Kim Gearin, PhD, senior research scientist at the Minnesota Department of Health and a leader of Minnesota's network.

Skill-building webinars address scientific and operational approaches to public health PBRNs. Recordings of webinars and web-based meetings are available on the center's website.

During special-topic networking conference calls, members discuss shared research interests and common methodological issues. An electronic newsletter profiles activities, resources, and funding opportunities. The National Coordinating Center also posts funding opportunities, guidance documents, reviews, and reports on its website and manages electronic discussion forums. The networks meet in person each April in Kentucky.

WHAT TYPE OF RESEARCH ARE THE NETWORKS DOING?

The multifaceted research grants program in which individual networks apply for grants to study topics of importance to members is managed by the National Coordinating Center. In addition, groups of networks can collaborate on larger-scale data collection and analyses across diverse geographical areas.

These grants "enable practice-based research to occur," says national advisory committee member Halverson. "The reality is that research faculty have to be concerned not just about what is interesting—but also what can be funded." These grants also help the networks build their research capacity and position themselves to pursue other funding.

The main pots of research money available from the center are described below.

Quick Strike Research Fund

This allocation of money is for rapid-response, time sensitive research projects on emerging issues that are generally completed within three to six months. The first Quick Strike Research projects—studies conducted by the Kentucky and North Carolina networks of local public health responses to the 2009 H1N1 influenza outbreak—were completed between August and October that year. The National Coordinating Center has funded 21 Quick Strike Research studies, as of October 2012.

Research Implementation Awards

These larger-scale research projects examined the implementation of evidence-based practices in public health. The first research implementation grants began in 2010 and by February 2011, the center had funded 10 projects. Studies included:

- The influence of public health agency size, performance standards, and regionalization on the use of evidence-based practices for food safety and infectious disease control, conducted by the Massachusetts network
- The identification and testing of measures of quality in delivering HIV/AIDS and sexually transmitted diseases services, conducted by the New York network

Research Capacity and Expansion Series (RACE)

These grants allowed networks to expand existing research studies in order to examine disparities in the delivery of public health services, incorporate methodological advances, and/or enhance the diversity of research teams by mentoring investigators from under-represented backgrounds, such as racial and ethnic minorities, people from low-income communities or first-generation college graduates.

As of October 2011, the National Coordinating Center had made eight RACE awards starting in 2011. Examples include:

- A study of the extent to which local health departments take action to reduce health inequities and the characteristics of local public health systems that facilitate and impede such action, conducted by the Minnesota network
- A project to refine an index that measures social and economic determinants of health and to examine how public health officials use the index to reduce disparities, conducted by the Connecticut network

Multi-Network Practice and Outcome Variation Study (MPROVE)

To advance the reach of the networks by creating research opportunities that involve several of them in a common study and to begin to develop evidence about the public health system in general, the National Coordinating Center started MPROVE in 2012. "This is the first attempt to get a number of networks to standardize data collection efforts across states. This will probably be worth the blood, sweat, and tears it will take to get it done," observes Wong.

> *Minnesota's PBRN takes a wide view of its mission: "We are not wedded to a single content area, We are focused on the underlying system and capacity in the system."*—Kim Gearin, PhD, research associate

In the first MPROVE project, six networks—Colorado, Florida, Minnesota, New Jersey, Tennessee, and Washington—are collaborating to study variation in the delivery of three core local public health services: communicable disease control, chronic disease prevention, and environmental health protection. They are collecting data on a common set of service delivery measures and will pool the data into a common registry and link them with other sources to support both across-network and within-network analyses.

Snapshots of Two Networks

The Minnesota Public Health Research to Action Network

Minnesota's public health PBRN is housed in the state Department of Health and guided by a steering committee made up of representatives of the agency, academia, and local public health departments, as well as local elected health officials. It takes a wide view of its mission: "We are not wedded to a single content area," says Gearin. "We are focused on the underlying system and capacity in the system."

Gearin and Beth Gyllstrom, PhD, another senior research scientist in the Minnesota Department of Health and a network leader, see benefits in housing the network at the state health agency, which manages the local health department reporting system. "I just have to walk upstairs to get data," says Gyllstrom.

The inaugural research project, conducted as part of the grant to establish Minnesota's public health PBRN, examined the local health department demographics, roles, authority, governance, and structure.[5] Findings were reported in the *Journal of Health Practice and Management*[6] and focused on six key authorities for local health directors.

With a research implementation award from the National Coordinating Center,[7] Minnesota's network has also developed a quality improvement maturity score,[8] which led to a follow-up study funded by a grant from RWJF's *Public Health Services and Systems Research* program to examine whether local health department characteristics are related to achieving evidence-based policy changes.[9] Another study addressed current Minnesota health department efforts to address health disparities, social determinants of health, and health inequities[10] (RACE award). Minnesota is also one of the six networks participating in the MPROVE study. As of March 2013, Minnesota had published eight reports from its studies on its website.

"I think the network is starting to hit its stride. We have a brand, have applied findings to benefit our public health system, and are gaining visibility—all of which helps us to sustain the network," says Gearin.

Read more about Minnesota's network on its website.

The Ohio Research Association for Public Health Improvement

Ohio's public health PBRN "is the research voice for local public health departments in Ohio," according to program director Frank. Although it is based at Case Western Reserve University, Frank says, "The key is strong local health department leadership—

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[5] ID# 67018

[6] Miner Gearin KJ, Thrash AM, Frauendienst R, Myhre J, Gyllstrom ME, Riley WJ and Schroeder J. "Measuring the Authority of Local Public Health Directors in the Context of Organizational Structure: An Exploratory, Multimodal Approach." *Journal of Public Health Management and Practice*, 18(6): 545–550, 2012. Available at *www.rwjf.org/en/research-publications/find-rwjf-research/2012/11/the-journal-of-public-health-management---practice-focuses-on-pu/measuring-the-authority-of-local-public-health-directors-in-the-.html*.

[7] ID# 68674

[8] Gearin KJ, Gyllstrom ME, Joly BM, Frauendienst RS, Myhre J and Riley W. "Monitoring QI maturity of public health organizations and systems in Minnesota: Promising early findings and suggested next steps." *Frontiers in Public Health Services and Systems Research*, 2(3), Article 3, 2013. Available at *http://uknowledge.uky.edu/frontiersinphssr/vol2/iss3*.

[9] ID# 69683

[10] ID# 69495

and always going to the partnership with decision-making. The Ohio Department of Health is an active partner."

Established with RWJF funding, the Ohio network also received four Quick Strike Research grants, all driven by local health departments. These studies:

- Created a model for estimating costs for a standard package of core local public health services[11]
- Examined the financial effects of consolidating local health departments[12]
- Analyzed the agreement between position descriptions and practice standards for public health nurses[13]
- Examined the causes and consequences of local variation in public health enforcement of the state's smoke-free workplace act[14]

> *"This is more than just 'if there is money, they will come.' It's clear that practitioners think this is important, not just a nice thing to do."*—National Advisory Committee member Paul Halverson

Through a Research Implementation Award and a Research Acceleration and Expansion Award[15] the Ohio network is analyzing the role of local health departments in preventing food-borne illness outbreaks. Trained student observers watched and recorded more than 500 restaurant inspections conducted by local health departments. "We have a really close look at what happens during the inspections. That should let us comment on the value of the inspections and validate what the local health departments are doing to protect the health of the public," says Frank.

Read more about Ohio's network on its website.

HOW ARE THE NETWORKS PROGRESSING?

The public health PBRNs are young but early signs suggest they are making progress.

[11] One of two studies funded under ID# 69619

[12] One of two studies funded under ID# 69619

[13] ID# 66151

[14] ID# 66151

[15] ID#s 68673 and 69497

Networks Formed, Engaged Practitioners and Researchers, and Launched Projects

By April 2013, 28 networks were participating in the RWJF Practice-Based Research Networks in Public Health program. All the networks were within a single state, and most were large—three-quarters of them covered the entire state. "This is more than just 'if there is money, they will come," says advisory committee member Halverson. "It is clear that practitioners think this is important, not just a nice thing to do."

Some 926 local health departments, 20 state health agencies, and 35 academic units have been involved in RWJF public health PBRN-funded research projects to date. More than 50 studies were underway or completed, including at least 15 that had funding from outside of the RWJF national program.

> *"We are giving our federal agency staff information about what public health looks like on the ground. It is hard for them to see on the ground, from where they sit."*—Program Director Glen Mays

Program Director Mays conducted a social network analysis[16] of the first five public health PBRNs, which he reports, "reveals broad engagement of both practitioners and researchers in scientific inquiry, with practitioners in the periphery of these networks reporting particularly large benefits from research participation."[17]

"The networks are stimulating both young and more senior researchers," adds NACCHO's Pestronk.

An Ohio Project Attracts Other Networks

Ohio's network started an unfunded study using an online survey of Ohio health departments to examine the future of teaching in public health given the economic downturn. Frank announced the survey and invited other PBRNs to use the instrument during a National Coordinating Center conference call. Two other networks, North Carolina and Wisconsin, joined the study, which is still underway as of March 2013. Findings will be available in aggregate and for each network individually. With an

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[16] Social network analysis "measures relationships between individuals and groups by mapping these relationships and assessing their patterns. The resulting map provides a unique picture of how network participants are communicating and behaving," according to a January 2011 overview by RWJF.

[17] Mays GP and Hogg RA. "Expanding delivery system research in public health settings: lessons from practice-based research networks." *Journal of Public Health Management and Practice*, 18(6): 485–498, 2012. PMID:23023272.

increase in enrollment in academic public health programs coinciding with a decrease in health department resources, it is unclear where the essential, practical, community-based training will take place in the future. This work informs that decision-making process.

Policy-Makers and Funders are Interested in Network Research

Federal agencies including the White House Office of Management and Budget, the Congressional Budget Office, the Department of Health and Human Services' Assistant Secretary of Health and the Assistant Secretary for Preparedness and Response, and the director of the CDC's National Center for Injury Prevention and Control, have turned to Mays and network leaders for briefings about their work.

Mays and Ohio's Frank met with officials at the Food and Drug Administration (FDA), a meeting facilitated by Katherine Papa, MPH, program director at AcademyHealth.[18] Papa works with Mays to link the networks and federal policy-makers.

The FDA was interested in learning about Ohio's study of food-borne illness outbreaks. "It was really affirming to share our findings with the deputy director of the FDA," says Frank.

"We are giving our federal agency staff information about what public health looks like on the ground. It is hard for them to see on the ground, from where they sit," Mays adds.

RWJF's Wong sees "increasing demand for the work coming out of the networks" from key policy-makers. "This is not application of evidence within the networks, but beyond them," she says.

Other funders are starting to take note. For example, in 2009, the CDC's Preparedness and Emergency Response Research Center and the Pandemic Influenza Planning and Preparedness Program provided additional funding for the H1N1 research started with the Quick Strike funding.

States Have Started to Change Practice

Network research has prompted action in some states. One hot topic is whether some local health departments should consolidate into larger, more regional entities. "Massachusetts is consolidating and regionalizing its public health," says Mays. "Ohio is also making some decisions about consolidating some rural public health departments."

North Carolina and Kentucky's Quick Strike studies of variations in local health department responses to the 2009 H1N1 influenza outbreak[19] enabled them to improve

[18] AcademyHealth is a Washington-based organization that supports development and use of rigorous, relevant, and timely evidence to improve health.

[19] Funded under grant ID# 64676

their responses during the outbreak through better communication between medical providers, public health officials, and others.

Ohio's Quick Strike analysis of enforcement of the state's Smoke Free Workplace Act, described earlier, contributed to the decision "to retain funding for enforcement, when people were looking to take the program away," says Frank.

Minnesota's Public Health PBRN Studies Inform a State Program and Help Secure Federal Funds

Minnesota is using findings from its network research, described earlier, in many different ways. For example, staff from the Department of Health used findings from the research on quality improvement measures to enhance the statewide public health performance measurement system.

In a successful grant proposal for nearly $2 million submitted in 2010 as part of CDC's Strengthening Public Health Infrastructure for Improved Health Outcomes program, Minnesota cited findings from its initial network research, and emphasized the potential to enhance infrastructure development activities with independent practice-based research conducted by the Minnesota PBRN.[20] With this grant, Minnesota is promoting increased use of performance management, quality improvement, and national public health standards to promote a culture of quality in the state and local health departments.

> *"The value of the PBRNs is that these researchers can talk about the research in terms of policy."*— Katherine Papa, MPH, program director at AcademyHealth

Networks Are Spreading Their Findings

The findings from many studies have been published in peer-reviewed journals. One article, "Evidence Links Increases in Public Health Spending to Declines in Preventable Deaths,[21]" published in *Health Affairs* appeared as third on the list of RWJF's Most Influential Research Articles of 2011, and as one of AcademyHealth's five Most Outstanding

[20] Strengthening Public Health Infrastructure for Improved Health Outcomes program is part of CDC's National Public Health Improvement Initiative, which supports health departments to make fundamental changes and enhancements in their organizations and implement practices that improve the delivery and impact of public health services.

[21] Mays GP and Smith SA. "Evidence Links Increases in Public Health Spending to Declines in Preventable Deaths," *Health Affairs*, 30(8): 1585–1593, August 2011. Available at *www.rwjf.org/en/research-publications/find-rwjf-research/2011/04/april-issue-of-health-affairs-focuses-on-patient-safety-and-heal/evidence-links-increases-in-public-health-spending-to-declines-i.html.*

Articles in the field.

Mays and his colleagues developed and edited two special journal issues published in 2012 on research conducted by the networks: one of the *Journal of Health Management and Practice*,[22] and one of the *American Journal of Preventive Medicine*.[23]

To accelerate the movement of public health research into practice and policy, in 2012, Mays launched *Frontiers in Public Health Services and Systems Research*, an online peer-reviewed journal that features descriptions of preliminary findings from empirical studies or quality improvement projects. Abstracts of articles also appear in a special section of the *American Journal of Preventive Medicine*.

> *"Mays and the networks have given attention to communications channels and multiple ways of communicating—they get information to a variety of forums to get people in public health to hear what we have discovered."*—Advisory Committee member Paul Halverson

Getting the Messages to Practitioners and Policy-Makers

Getting research findings into the hands of public health practitioners and policy-makers—who do not generally read peer-reviewed journal articles—is essential to improving public health practice. "Mays and the networks have given attention to communications channels and multiple ways of communicating—they get information to a variety of forums to get people in public health to hear what we have discovered," says Halverson.

Mays' connections with NACCHO provides an example of how network research gets into the hands of public health officials—in this case representatives of 2,700 local health departments—more broadly. NACCHO's leaders encourage network researchers to attend and present at the annual meeting. The Winter 2012 edition of NACCHO's quarterly newsletter was devoted to public health PRBNs, and network directors also can submit summaries of network research for other NACCHO publications.

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[22] Mays GP and Scutchfield FD (eds.). "Advances in Public Health Services and Systems Research." *Journal of Public Health Management and Practice*, 18:6, November–December 2012. Available at *www.rwjf.org/en/research-publications/find-rwjf-research/2012/11/the-journal-of-public-health-management---practice-focuses-on-pu.html.*

[23] Scutchfield FED, Howard AF, Perez DJ, Monroe JA and Mays GP (eds.). "An Agenda for Public Health Services and Systems Research." *American Journal of Preventive Medicine*, 4(5:Suppl 1), 2012. Available at *www.rwjf.org/en/research-publications/find-rwjf-research/2012/05/a-national-research-agenda-for-public-health-services-and-system.html*. Click Browse Contents to see all of the articles.

Mays' connections with Papa and AcademyHealth show how network research gets shared with health researchers and policy-makers at the federal level. Papa taps into her network of "Washington policy-makers and policy influencers" to find potential champions for the networks' research and to connect networks with policy-makers. "The value of the PBRNs is that these researchers can talk about the research in terms of policy," she says.

AcademyHealth's public health systems research group is another way to share public health PBRN findings with health researchers and policy-makers. With more than 2,700 members, it is the largest of 16 interest groups of service providers and researchers.

> *"The elephant in the room is that there needs to be a serious commitment made at a federal level to funding public health systems and services research."*—Advisory Committee member Paul Halverson

WHAT CHALLENGES IS THE PROGRAM FACING?

Too Many Priorities, Too Little Time

A significant challenge for the networks and the National Coordinating Center is moving research findings into mainstream public health practice and policy. "I think the biggest enemy that people in public health have is time," says Halverson. "We have to change the pattern so practitioners understand the need to engage in what is going on with the networks and practice research."

Time is certainly a challenge in Minnesota. "There is never enough time for us and for our partners. It is always a challenge to balance our shared research agenda with the day-to-day demands of running a local health department," says Gearin.

Mays shares Halverson's concern. "An evolving challenge involves the growing set of competing priorities faced by the networks and the relatively limited capacity of networks to address multiple priorities within existing resources." The National Coordinating Center's technical assistance efforts include helping networks establish priorities and sequence their activities.

NACCHO's Pestronk also identifies obstacles in translating research in ways that address the multiple priorities of public health agencies. "What those who make policy want isn't necessarily the science that research produces. The challenge is to produce both science and stories written in a way that is useful to those who aren't scientists and who tend to practice or base policy on what they hear from their neighbors and friends."

Getting Researchers to See the Value

Another challenge is "engaging the right researchers—people who can bring their expertise and who are willing to share control, authority, and money with public health practitioners, and not just call the shots themselves," says Mays. "I do a lot of travel to the sites and do a lot of work with academics about how doing this work can advance their academic careers."

Mays finds this an ongoing challenge partly because, although researchers rely on grant funds, the funds from the National Coordinating Center are relatively small, and they don't have the prestige of National Institutes of Health grants.

Halverson agrees. "I see a real shortage of qualified research faculty," he said.

> *"We are building an enormous level of trust and engagement with the federal health enterprise…. We are trying to get the federal agencies to fund networks, so first we show them how networks help, and then we ask them for money."*—Glen Mays, program director

Sustaining the Networks

Funding for this emerging field is another ongoing challenge. "There is more need than there is money," says Halverson, who calls for increased federal involvement in funding this research. "The elephant in the room is that there needs to be a serious commitment made at a federal level to funding public health systems and services research."

Sustaining the networks will take time in addition to money. "We know that despite even big infusions of funding, it takes from 15 to 20 years to move from the clinical bench to clinical practice," says NACCHO's Pestronk. "That is not a reason not to do this work, but it is a challenge."

Sustaining the networks administratively is also a challenge, says Mays. The networks have grown so fast that the National Coordinating Center is having trouble keeping up with their needs. "We want to help them, but there are just a couple of us here behind the curtain," says Mays.

WHAT DOES THE FUTURE HOLD?

Proposed Activities

Going forward, the National Coordinating Center is focusing on cultivating new research partners and sources of support, and building research capacity. Two areas of focus are two priorities in the Affordable Care Act: comparative effectiveness research[24] and delivery system research that quantifies the health and economic value of different public health strategies. Mays is hopeful that federal agencies will fund some of this research.

The center plans to award new public health delivery and cost studies grants to generate evidence about the effectiveness and costs of core public health services and delivery system strategies. It has also designed new grants for public health measurement and comparison studies to develop new methods for measuring the reach, quality, and cost of core public health services. Also, the Quick Strike, Research Acceleration and Expansion, and MPROVE research grants will continue.

Technical assistance is being expanded through an updated website, an electronic discussion group using social networking platforms, and PBRN Charrettes—focused, facilitated guidance sessions to address a research or operational challenge.

Mays is also evaluating the overall public health PBRN model in facilitating research translation, adoption, and implementation—including repeating the social network analysis survey annually starting in 2013. To determine what would have happened without the public health PBRNs, he is working with NACCHO to gather data to allow comparisons between health departments that are and are not part of public health PBRNs. The initial round of data from 2010 shows that local public health agencies participating in PBRNs were two to three times more likely than non-participating agencies to engage in research implementation and translation activities.[25]

Finally, he is collaborating with investigators from the University of Kentucky's Dissemination and Implementation Sciences Consortium[26] to determine the best way to communicate findings from network research.

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[24] The Institute of Medicine defines comparative effectiveness research as "the generation and synthesis of evidence that compares the benefits and harms of alternative methods to prevent, diagnose, treat, and monitor a clinical condition or to improve the delivery of care."

[25] Mays GP, Hogg RA, Castellanos-Cruz DM, Hoover AG, and Fowler LC. "Engaging Public Health Settings in Research Implementation and Translation Activities: Evidence from Practice-Based Research Networks." *American Journal of Preventive Medicine*; 2013; in press.

[26] The consortium conducts evidence-based research that accelerates the uptake of research findings into actionable practice.

The Long View

These activities feed into Mays' long-term vision for the public health PBRNs. "I think we are building an enormous level of trust and engagement with the federal health enterprise, that I am hopeful will pay off. We are trying to get the federal agencies to fund networks, so first we show them how networks help, and then we ask them for money."

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APPENDIX

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