Disparities Research in Public Health PBRNs

Glen Mays, University of Kentucky
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International Disparities in Population Health

Preventable Deaths per 100,000 population

Countries’ age-standardized death rates before age 75; including ischemic heart disease, diabetes, stroke, and bacterial infections. See report Appendix B for list of all conditions considered amenable to health care in the analysis.

Source: Commonwealth Fund 2008
Geographic Disparities in Preventable Mortality

Source: Commonwealth Fund 2008
Racial Disparities in Preventable Mortality

Black-white relative risks of preventable mortality

Medical care avoidable mortality  Public health avoidable mortality  CVD avoidable mortality

Macinko and Elo 2009
"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."

—Institute of Medicine, 2003
For every $100 in federal health research spending, <$1 is devoted to delivery system research.

Woolf and Johnson 2005.
What is Public Health Services & Systems Research?

A field of inquiry examining the organization, financing, and delivery of public health services at local, state and national levels, and the impact of these activities on population health

Mays, Halverson, and Scutchfield. 2003
Subtitle D—Support for Prevention and Public Health Innovation

SEC. 4301. RESEARCH ON OPTIMIZING THE DELIVERY OF PUBLIC HEALTH SERVICES.

(a) IN GENERAL.—The Secretary of Health and Human Services (referred to in this section as the “Secretary”), acting through the Director of the Centers for Disease Control and Prevention, shall provide funding for research in the area of public health services and systems.

(b) REQUIREMENTS OF RESEARCH.—Research supported under this section shall include—

(1) examining evidence-based practices relating to prevention, with a particular focus on high priority areas as identified by the Secretary in the National Prevention Strategy or Healthy People 2020, and including comparing community-based public health interventions in terms of effectiveness and cost;

(2) analyzing the translation of interventions from academic settings to real world settings; and

(3) identifying effective strategies for organizing, financing, or delivering public health services in real world community settings, including comparing State and local health department structures and systems in terms of effectiveness and cost.
Fundamental empirical questions

Which programs, interventions, policies (mechanisms)….

Work best (outcomes)…

In which institutional & community settings (contexts)…

For which populations (equity/heterogeneity)…

And why?

Pawson and Tilley 1997; Berwick 2008
Challenges: complexity in public health delivery systems

Public Health System
- Needs
- Preferences
- Risks
- Threats
- Resources
- Perceptions

Population & Environment
- Resources & expertise
- Participation incentives
- Scope of activity
- Compatibility of missions
- Division of responsibility
- Distribution of effort
- Nature & intensity of relationships

Public Health Agencies
- Scope of services
- Staffing levels & mix
- Intergovernmental relationships
- Legal authority
- Funding levels & mix
- Governing structure
- Leadership

Decision Support
- Surveillance & IT
- Performance measures
- Practice guidelines
- Accreditation

Strategic Decisions
- Outputs and Outcomes
  - Reach
  - Effectiveness
  - Timeliness
  - Adherence to EBPs
  - Efficiency
  - Equity

Mays et al. 2009
Solutions: Public Health PBRNs

Common questions of interest

Identify

Translation & application

Rigorous research methods

Engaged practice settings

Research partner

Data exchange

Analysis & interpretation

Identify

Apply

Translation & application

Rigorous research methods

Engaged practice settings

Research partner

Data exchange

Analysis & interpretation
The Robert Wood Johnson Foundation’s Public Health PBRN Program

First cohort (December 2008 start-up)
Second cohort (January 2010 start-up)
Affiliate/Emerging PBRNs

[Map of the United States showing regions colored for different cohorts and the National Coordinating Center.]
Examples of PBRN studies

- **Comparative case studies**: document processes, identify scope and scale of problems, examine innovations

- **Large-scale observational studies**: document practice variation across public health settings; identify causes & consequences of variation

- **Adoption/diffusion studies**: identify the pace and patterns through which evidence-based practices are adopted, and factors that facilitate and inhibit adoption

- **Quality improvement studies**: evaluate strategies for improving program operations & outcomes

- **Policy evaluations and natural experiments**: monitor effects of key policy and administrative changes
How public health system characteristics influence health disparities

- Differences in the resources invested in public health strategies across U.S. communities
- Differences in the size, composition, and competency of the public health workforce across U.S. communities
- Differences in the ability of public health providers to tailor public health strategies in culturally and linguistically appropriate ways to populations at risk
- Differences in the connectedness among community organizations that contribute to public health strategies (public health networks).
Variation in Delivery of Oral Health Programs by U.S. Public Health Agencies, 2010

National Association of County and City Health Officials, 2011
“Local spending varies by a factor of 13 between the top 20% and bottom 20% of communities, even after adjusting for differences in demographics, SES, and service mix.”

Gini = 0.472

Mays et al. 2009
Changes in Local Public Health Spending 1993-2008

- 62% growth
- 38% decline
Reductions in preventable mortality attributable to public health spending

“Communities with larger growth in public health spending experienced larger reductions in preventable mortality rates.”

Mays et al. Health Affairs 2011
How public health spending influences medical care spending

Spending estimates adjusted for age, comorbidities, and service mix

Mays et al. Health Services Research 2009
Other Examples of Disparities-focused PBRN studies underway

- Variation in Local Public Health Actions to Address Health Inequities (Minnesota)
- Utilization and Effectiveness of a Health Equity Index in Mobilizing Local Public Health Action (Connecticut)
- Effects of Cultural Competency Training on Local Public Health Practice: A Randomized Trial (Kentucky)
- Local Health Department Workforce Reductions: Implications for Diversity and Health Disparities (Washington)
- Estimating the Comparative Effectiveness of Local Public Health Responses to Medicaid Payment Reductions (North Carolina)
Conclusions & Implications

- Variation in public health delivery results in inequities in prevention and risk protection
  - Particularly wide variation in oral health delivery
- PBRNs provide vehicles for understanding and reducing unwarranted variation in PH practice
- Practice-based research in public health can:
  - Expand evidence
  - Accelerate translation to practice
  - Inform policy to improve value of health investments
For More Information

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