Reinventing the 21st Century Public Health Workforce: Innovation, Evaluation & Practice-Based Research

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Reinventing the 21st Century Public Health Workforce:
Innovation, Evaluation & Practice-Based Research

Glen P. Mays, PhD, MPH
University of Kentucky

HRSA Public Health Training Centers Annual Meeting • Rockville, MD
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More than 75% of total U.S. healthcare costs derive from preventable conditions.

Less than 3% of total U.S. health expenditures are devoted to public health & prevention

USDHHS. National Health Expenditure Accounts 2012
U.S. communities that increased public health spending by 10% experienced an 8% reduction in preventable mortality rates over the 1993-2008 period.

Mays GP, Smith SA. Evidence links increases in public health spending to declines in preventable deaths. Health Affairs. 2011
More than 78% of local public health delivery costs derive from labor.

Kelso Local Health Department Costs Associated with Response to a School-Based Pertussis Outbreak MMWR 2011
Less than 1% of federal health research spending supports delivery system research.

Woolf SH, Johnson RE. The break-even point: when medical advances are less important than improving the fidelity with which they are delivered. Ann Fam Med. 2005
Public Health Delivery by the Numbers

- The public health workforce provides an **engine** for building a higher-performing, equitable, sustainable health system.
- **Research** is required to optimize the potential of the workforce to deliver what works in public health.
- Traditional research production models are **inadequate**:
  - Research embedded in real world-practice settings
  - Rapid-cycle research on innovations in practice
  - Accelerated translation, dissemination, and implementation of findings
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
What is Practice-Based Research in Public Health?

- Research that tests effectiveness & impact of public health practices in real-world *public health settings*

- Research designed to address uncertainties and information needs of real-world public health *decision-makers*

- Research that evaluates the implementation and impact of *innovations in practice*

- Research that uses *observations generated through public health practice* to produce new knowledge
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.
### The PHSSR National Research Agenda

#### Enumeration

<table>
<thead>
<tr>
<th>Number</th>
<th>Question</th>
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<tbody>
<tr>
<td>1.</td>
<td>What is the size and composition of the public health workforce, including the mix of training and experience, occupational responsibilities, institutional practice settings, and sociodemographic characteristics of workers?</td>
</tr>
<tr>
<td>2.</td>
<td>How do the size and composition of the public health workforce vary across states and communities, and change over time?</td>
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#### Diversity and disparities

<table>
<thead>
<tr>
<th>Number</th>
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<tbody>
<tr>
<td>6.</td>
<td>How do supply-side and demand-side factors affect the racial, ethnic, socioeconomic, and cultural diversity of the public health workforce?</td>
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<tr>
<td>7.</td>
<td>How does public health workforce diversity affect the volume, mix, quality, and outcomes of public health strategies delivered at local, state, and national levels?</td>
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<tr>
<td>8.</td>
<td>How does public health workforce diversity affect health disparities?</td>
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<tr>
<td>9.</td>
<td>What recruitment and retention strategies are most effective in enhancing racial, ethnic, socioeconomic, and cultural diversity in the public health workforce?</td>
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#### Demand, supply, and shortages

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<td>3.</td>
<td>What factors influence the supply of, demand for, and geographic and organizational distribution of workers within the public health workforce?</td>
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<tr>
<td>4.</td>
<td>How does the size and composition of the public health workforce affect the volume, mix, quality, and outcomes of public health strategies delivered at local, state, and national levels?</td>
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<tr>
<td>5.</td>
<td>What analytic methods provide the most valid and reliable estimates of public health workforce shortages and surpluses based on population characteristics, preventable disease burdens and risks, and economic conditions?</td>
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#### Recruitment and retention

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<td>10.</td>
<td>What models are most effective in recruiting qualified workers into public health jobs?</td>
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<tr>
<td>11.</td>
<td>How do the components of compensation packages affect the recruitment and retention of qualified workers in public health jobs?</td>
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<td>12.</td>
<td>What factors beyond compensation affect worker decisions to pursue public health careers?</td>
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<tr>
<td>13.</td>
<td>How do formal and informal mentoring strategies affect recruitment and retention of qualified workers in public health jobs?</td>
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<tr>
<td>14.</td>
<td>How does staff turnover influence the effectiveness and efficiency of public health strategies delivered at local, state, and national levels?</td>
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# The PHSSR National Research Agenda

## Workforce competencies

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<tr>
<td>16</td>
<td>What standardized assessment methods are most effective in producing valid and reliable measures of the skills and competencies attained by public health students and practicing professionals?</td>
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<tr>
<td>17</td>
<td>How do the skills and competencies of the public health workforce impact the effectiveness, efficiency, and outcomes of public health strategies delivered by this workforce?</td>
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<tr>
<td>18</td>
<td>How do different types of staffing models (i.e., allocation of tasks and responsibilities to different types of public health workers based on their competencies) impact the effectiveness, efficiency, and outcomes of public health strategies delivered by these workers?</td>
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<tr>
<td>19</td>
<td>How do certification programs for public health professionals impact the effectiveness, efficiency, and outcomes of public health strategies delivered by these professionals?</td>
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## Educational methods and curricula

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<td>20</td>
<td>What impact do existing education and training programs have on the skills and competencies of the public health workforce?</td>
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<tr>
<td>21</td>
<td>What models of education and training are most effective in producing the volume and mix of qualified public health professionals needed to meet future demand?</td>
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<tr>
<td>22</td>
<td>What models of education and training are most effective in improving the skills and competencies needed by the existing public health workforce to practice effectively and efficiently?</td>
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<tr>
<td>23</td>
<td>What are the benefits, costs, and return-on-investment estimates associated with acquiring different levels of education and training in public health?</td>
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<tr>
<td>24</td>
<td>What models of education and training are most effective in improving cultural competency among public health professionals?</td>
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<tr>
<td>25</td>
<td>What models of education and training are most effective in improving the financial management skills of public health professionals?</td>
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How can PBRNs help?

- Practice partners to help identify the most pressing questions to answer
- Multiple practice settings for analysis and comparison
- Research partners to help design studies that balance rigor, relevance, feasibility
- Collaborative interpretation of results
- Translating results to timely practice and policy actions
What are Public Health PBRNs?

A collection of public health agencies and their partner organizations engaged in an ongoing collaboration with an academic research center to conduct rigorous, applied studies of strategies for organizing, financing, and/or delivering public health services in real-world community settings.
The Logic of Public Health PBRNs

- Translation & application
- Common questions of interest
- Engaged practice settings
- Research partner
- Apply Rigorous research methods
- Analysis & interpretation
- Data exchange
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
Examples: Practice Standards in Ohio

Analyzing Concordance between Position Descriptions and Practice Standards for Public Health Nurses

**Question of interest:** Are positions consistent with national competency standards and scope of practice policies?

**Practice settings:** 125 local health departments in Ohio

**Factors examined:**
- Geographic variation in concordance
- Organizational, economic, and community characteristics associated with concordance

**Study design:** observational practice variation study, mixed-method
Examples: Cultural Competency in Kentucky

Improving Cultural Competency of Public Health Workers

- **Question of interest:** Can a health professions cultural competency training program be adapted to improve skills among local public health workers?

- **Practice settings:** 56 local agencies

- **Factors examined:**
  - Knowledge and skills related to CLAS standards
  - RE-AIM measures of success

- **Study design:** random-assignment delayed intervention trial
Evaluation of a QI Process to Improve Workforce Diversity

**Question of interest:** Can a QI process be implemented to improve recruitment and retention of public health workers from under-represented racial/ethnic backgrounds?

**Practice settings:** Seattle-King County

**Factors examined:**
- Recruitment
- Hiring process
- Retention

**Study design:** pre-post study with comparison group
Examples: Studying Public Health Production

Multi-Network Practice and Outcome Variation (MPROVE) Study, 2012-13

Measures Collected Consistently Across 6 PBRNs

- **Availability/Scope**: specific activities produced
- **Volume/Intensity**: Frequency of producing activity over period of time
- **Capacity**: Labor and capital inputs assigned to an activity
- **Reach**: Proportion of target population reached by activity
- **Quality**: effectiveness, timeliness, equity of activity
- **Efficiency**: resources required to produce given volume of activity
Examples: Cost and Staffing Studies

Costing and Staffing a Minimum Package of Services

- **Question of interest:** What financial and human resources are required to deliver a core package of services for a defined population?

- **Practice settings:** Selected agencies from multiple PBRNs

- **Factors examined:**
  - Labor costs and FTEs
  - Volume and intensity of service delivery
  - Direct and indirect costs

- **Study design:** observational, cross-sectional
Research and Training: Opportunities for Synergy

- Engage workforce in identifying research needs
- Build research around workforce innovations: training, staffing, practice
- Use workforce analysis and program evaluation activities as launch-pads for research
- Collaborate across states/regions for comparative analysis
- Disseminate and implement research findings through workforce training vehicles
Research and Training: The Shared Vision

- Innovation
- Continuous learning
- Continuous improvement
- Outcome driven
For More Information

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