Public Health Systems and the Social and Economic Determinants of Health: New Directions for Research in the U.S. Context

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New Directions in Public Health Systems Research: the U.S. Context

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Where we’ve been: 1998-2015

- Measuring variation in the performance of core public health functions

- Exploring causes of variation
  - Spending
  - Staffing
  - Governance and organizational structures

- Exploring consequences of variation
  - Health outcomes
  - Medical expenditures
  - Health disparities

Where we’re headed: 2016 and beyond

Identify strategies to align delivery and financing systems for public health, medical care, and social services in ways that improve population health

- Health and well-being
- Equity
- Efficiency

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The Culture of Health Action Framework

Action Area 1: Making Health a Shared Value
Action Area 2: Fostering Cross-Sector Collaboration to Improve Well-Being
Action Area 3: Creating Healthier, More Equitable Communities
Action Area 4: Strengthening Integration of Health Services and Systems

Outcome: Improved Population Health, Well-Being, and Equity
What Foundational Capabilities support collective actions in health?

Public health as chief health strategist for the system:

- Articulate population health needs & priorities
- Engage community stakeholders
- Plan with clear roles & responsibilities
- Recruit & leverage resources across sectors
- Develop and enforce policies
- Ensure coordination across sectors
- Promote equity and target disparities
- Support evidence-based practices
- Monitor and feed back results
- Ensure transparency & accountability

Comprehensive Public Health Systems
One of RWJF’s 40 Culture of Health National Metrics

- Broad scope of Foundational Capabilities
- Dense network of multi-sector relationships
- Central actors to coordinate actions

Access to public health

47.2% of population served by a comprehensive public health system

Overall, 47.2 percent of the population is covered by a comprehensive public health system. Individuals are more likely to have access if they are non-White (51.5 percent vs. 45.5 percent White) or live in a metropolitan area (48.7 percent vs. 34.1 percent in nonmetropolitan areas).

Comprehensive Public Health Systems
U.S. Average in 2014

Node size = degree centrality
Line size = % activities jointly contributed (tie strength)
What do we know about the benefits of Comprehensive Public Health Systems?

- Greater concordance with national recommendations
  - IOM Core Functions
  - Essential Public Health Services
  - PHAB national accreditation standards
  - Foundational Public Health Services
- Fewer governmental resources per capita: more for less
- Over time, larger gains in population health
Prevalence of Public Health System Configurations 1998-2014

Scope
- High
- Mod
- Low

Centrality
- Mod
- Low
- High

Density
- High
- Mod
- Low

Comprehensive (High System Capital)
- Cluster 1
- Cluster 2
- Cluster 3
- Cluster 4

Conventional
- Cluster 5

Limited
- Cluster 6
- Cluster 7

1998
2006
2012
2014
### Changes in system prevalence and coverage

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<td><strong>Comprehensive systems</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of communities</td>
<td>24.2%</td>
<td>36.9%</td>
<td>31.1%</td>
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<td>50.1%</td>
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Variation in public health implementation

National Longitudinal Survey of Public Health Systems

Percent of U.S. communities

Percent of activities performed

20% 40% 60% 80% 100%
Comprehensive systems do more with less

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<th>Type of delivery system</th>
<th>Expenditures per capita</th>
<th>Recommended activities performed</th>
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<tr>
<td>Comprehensive</td>
<td>$80</td>
<td>90%</td>
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<tr>
<td>Conventional</td>
<td>$60</td>
<td>80%</td>
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<tr>
<td>Limited</td>
<td>$50</td>
<td>70%</td>
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<tr>
<td>Very limited</td>
<td>$40</td>
<td>60%</td>
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</table>
Equity in public health implementation
Delivery of recommended public health activities, 2006-14

Quintiles of communities

<table>
<thead>
<tr>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
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<tr>
<td>-40%</td>
<td>-20%</td>
<td>0%</td>
<td>20%</td>
<td>40%</td>
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<tr>
<td>60%</td>
<td>80%</td>
<td>100%</td>
<td>120%</td>
<td>140%</td>
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% of recommended activities performed

2014

$\Delta$ 2006-14

Quintiles of communities

% of recommended activities performed
Models also control for racial composition, unemployment, health insurance coverage, educational attainment, age composition, and state and year fixed effects. N=779 community-years **p<0.05  *p<0.10
Making the case for equity: larger gains in low-resource communities

Effects of Comprehensive Public Health Systems in Low-Income vs. High-Income Communities

Log IV regression estimates controlling for community-level and state-level characteristics

Mortality
Medical costs
95% CI

Average all communities
Bottom 20% of communities
Top 20% of communities

Log IV regression estimates controlling for community-level and state-level characteristics
Opportunities on the horizon

- Deeper exploration of system capabilities for intervening on social & economic determinants
- Advancing implementation science in public health systems: scale and spread successes
- Learning from cross-national comparisons of system structures and performance
For More Information

Systems for Action
National Coordinating Center
Systems and Services Research to Build a Culture of Health

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For more information

- Defining Comprehensive Public Health Delivery Systems
  https://works.bepress.com/glen_mays/198/

- CPHS methodology: Milbank Quarterly 2010
  http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2888010/

- Health/economic benefits of comprehensive systems: AJPH 2015

- Longitudinal Survey of Public Health Systems
  http://works.bepress.com/glen_mays/38/

- Customized system feedback report
  http://works.bepress.com/glen_mays/67/