Summer August 12, 2015

Foundational Public Health Services and Health System Reform: Evidence, Economics, and Implementation

Glen P. Mays, University of Kentucky

Available at: https://works.bepress.com/glen_mays/213/
Vicious cycles in public health delivery

Limited public understanding & political support

Incoherence in missions, responsibilities & expectations

Complex, fragmented, variable financing & delivery systems

Large inequities in resources & capabilities

Variable productivity and efficiency

Resources incongruent with preventable disease burden

Gaps in reach & implementation of efficacious strategies

Difficulties demonstrating impact, value & ROI
Variation in Public Health Spending

Gini = 0.485
Changes in Public Health Spending 1993-2013

- 62% growth
- 38% decline
Mortality reductions attributable to investments in public health spending, 1993-2008

Hierarchical regression estimates with instrumental variables to correct for selection and unmeasured confounding

Mays et al. 2011
Medical cost offsets attributable to investments in public health spending, 1993-2008

For every $10 of public health spending, ≈$9 are recovered in lower medical care spending over 15 years

Public health investments generate larger health & economic gains in low-resource communities

Impact in Low-Income vs. High Income Communities

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

Mays et al. forthcoming 2015
Public health investments produce larger gains in communities with robust infrastructure

Impact in Communities with Low vs. High Public Health Infrastructure

- Mortality
- Medical costs

95% CI

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

Mays et al. forthcoming 2015
More public health resources and infrastructure are good for population health.

How do we get more?
Vicious cycles to learning systems

Define a core package of services & capabilities every community needs

Build evidence on contributions to population health & wellbeing

Identify resource requirements

Limited public understanding & political support

Incoherence in missions, complex, fragmented, variable responsibilities & expectations, financing & delivery systems

Large inequities in resources & capabilities

Variable productivity and efficiency

Resources incongruent with preventable disease burden

Gaps in reach & implementation of efficacious strategies

Difficulties demonstrating impact, value & ROI
New incentives & infrastructure are in play

Next Generation Population Health Improvement
Stimuli in the Affordable Care Act

- $10 billion Prevention & Public Health Fund
- $10 billion CMMI demonstration programs
  - ACOs
  - Bundled payments
  - Shared savings
- Medicaid Health Home pilots
- Enhanced IRS requirements for hospital community benefits
- Minimum loss ratio incentives for health insurers
- Employer incentives and support for health promotion
Articulating Foundational Services and their resource requirements

2012 Institute of Medicine Recommendations

- Identify the components and **costs of a minimum package** of public health services
  - Foundational capabilities
  - Basic programs
- Implement a **national chart of accounts** for tracking spending and flow of funds
- Expand **research on costs and effects** of public health delivery

Articulating Foundational Services

Programs/Activities Specific to an HD and/or Community Needs
Most of an HD’s Work is “Above the Line”

Foundational Areas
- Communicable Disease Control
- Chronic Disease & Injury Prevention
- Environmental Public Health
- Maternal, Child, & Family Health
- Access to and Linkage w/Clinical Care

Foundational Capabilities
- Assessment (Surveillance, Epidemiology, and Laboratory Capacity)
- All Hazards Preparedness/Response
- Policy Development/Support
- Communications
- Community Partnership Development
- Organizational Competencies (Leadership/Governance; Health Equity, Accountability/Performance Management; IT; HR; Financial Management; Legal)

Foundational Services & Next-Gen Public Health

Public health agency as chief health strategist for the system:

- Articulate population health needs & priorities
- Engage community stakeholders
- Plan with clear roles & responsibilities
- Recruit & leverage resources
- Develop and enforce policies
- Ensure coordination
- Promote evidence-based practices
- Monitor and feed back results
- Mobilize performance improvement
- Ensure transparency & accountability: resources, results, ROI
Creating a Culture of Health through Foundational Services

Areas of Action

- Making Health a Shared Value
- Creating Healthier, More Equitable Communities
- Fostering Cross-Sector Collaboration to Improve Well-Being
- Transforming Health and Health Care Systems

Outcomes

- Improved Population Health Systems and Well-Being

FIGURE 1—Culture of Health action model.
Changes in Delivery of Foundational Services, 1998-2014

National Longitudinal Survey of Public Health Systems

Assessment (+5.6%)
Policy/Planning (+15.8%)
Total (+1.1%)
Assurance (-18.4%)
Variation in Delivery of Foundational Services

National Longitudinal Survey of Public Health Systems

Percent of activities performed

Percent of U.S. communities

National Longitudinal Survey of Public Health Systems, 2014
Variation and Change in Delivery

Delivery of recommended public health activities, 2006-14

National Longitudinal Survey of Public Health Systems, 2014
Delivery System Structures for Foundational Services
National Longitudinal Survey of Public Health Systems

Node size = centrality
Line size = % activities jointly contributed (tie strength)
Comprehensive systems do more with less

National Longitudinal Survey of Public Health Systems

<table>
<thead>
<tr>
<th>Type of delivery system</th>
<th>Expenditures per capita</th>
<th>Recommended activities performed</th>
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<tbody>
<tr>
<td>Comprehensive</td>
<td>$80</td>
<td>90%</td>
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<tr>
<td>Conventional</td>
<td>$70</td>
<td>80%</td>
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<tr>
<td>Limited</td>
<td>$60</td>
<td>70%</td>
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<tr>
<td>Very limited</td>
<td>$50</td>
<td>60%</td>
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Expenditures per capita and % of recommended activities performed.
Health & economic impact of comprehensive systems


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
# Changes in system capital prevalence and coverage

National Longitudinal Survey of Public Health Systems

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<td><strong>Comprehensive systems</strong></td>
<td></td>
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<td></td>
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<tr>
<td>% of communities</td>
<td>24.2%</td>
<td>36.9%</td>
<td>31.1%</td>
<td>32.7%</td>
<td>25.7%</td>
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<tr>
<td>% of population</td>
<td>25.0%</td>
<td>50.8%</td>
<td>47.7%</td>
<td>47.2%</td>
<td>36.6%</td>
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<td><strong>Conventional systems</strong></td>
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<tr>
<td>% of communities</td>
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<td>57.6%</td>
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<td>25.8%</td>
<td>36.3%</td>
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<td><strong>Limited systems</strong></td>
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<tr>
<td>% of communities</td>
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<td>29.2%</td>
<td>19.9%</td>
<td>20.6%</td>
<td>16.7%</td>
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<tr>
<td>% of population</td>
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<td>23.4%</td>
<td>16.0%</td>
<td>19.6%</td>
<td>16.1%</td>
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Estimating Resource Requirements for Foundational Services
Pilot Results from a National Costing Study

Projected

Current

Mean = 101.82
95% = 127.46
5% = 76.75

Mean = 65.036
95% = 78.323
5% = 52.750

Projected

Current

0
1
2
3
4
5
6
7
8
9
10

0
1
2
3
4
5
6
7
8
9
10

Pilot Results from a National Costing Study
Foundational Services: the bottom line

- Business as usual is increasingly not an option in public health.

- Foundational Services are catalytic functions that can improve public health’s reach, influence, engagement, & coordination.

- Expanded implementation of Foundational Services may improve public health impact, equity & efficiency – but only with adequate financing.

- If not governmental public health, then who will perform these vital functions for the health system?
For More Information

Supported by The Robert Wood Johnson Foundation

Glen P. Mays, Ph.D., M.P.H.
glen.mays@uky.edu

Email: publichealthPBRN@uky.edu
Web: www.publichealthsystems.org
Journal: www.FrontiersinPHSSR.org
Archive: works.bepress.com/glen_mays
Blog: publichealtheconomics.org