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Unifying Systems for Population Health: Infrastructure, Incentives & Evidence for Collective Action

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Unifying Systems for Population Health:
Infrastructure, Incentives & Evidence for Collective Action

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Key Questions

Why is system alignment so needed yet so hard to achieve?

What types of infrastructure and incentives can help to align systems?

How can evidence and community-engaged scholarship help?
Failures in population health

Premature Deaths per 100,000 Residents

U.S. Average = 103 Deaths per 100,000

Commonwealth Fund 2012
Drivers of population health failures

Proportional Contribution to Premature Death

- Genetic predisposition: 30%
- Behavioral patterns: 40%
- Social circumstances: 15%
- Environmental exposure: 5%
- Health care: 10%

Failing to connect

Medical Care
- Fragmentation
- Duplication
- Variability in practice
- Limited accessibility
- Episodic and reactive care
- Insensitivity to consumer values & preferences
- Limited targeting of resources to community needs

Social Supports

Public Health
- Fragmentation
- Variability in practice
- Resource constrained
- Limited reach
- Insufficient scale
- Limited public visibility & understanding
- Limited evidence base
- Slow to innovate & adapt

Inefficient delivery
Inequitable outcomes
Limited population health impact
What are Population Health Strategies?

- Designed to achieve large-scale health improvement: neighborhood, city/county, region
- Target fundamental and often multiple determinants of health
- Mobilize the collective actions of multiple stakeholders in government & private sector
  - Usual and unusual suspects
What Makes Population Health Strategies So Hard?

- Incentive compatibility → public goods
- Concentrated costs & diffuse benefits
- Time lags: costs vs. improvements
- Uncertainties about what works
- Asymmetry in information
- Difficulties measuring progress
- Weak and variable institutions & infrastructure
- Imbalance: resources vs. needs
- Stability & sustainability of funding
Can Public Health Infrastructure Help?

Organized programs, policies, and laws to prevent disease and injury and promote health on a population-wide basis

- Epidemiologic surveillance & investigation
- Community health assessment & planning
- Communicable disease control
- Chronic disease and injury prevention
- Health education and communication
- Environmental health monitoring and assessment
- Enforcement of health laws and regulations
- Inspection and licensing
- Inform, advise, and assist school-based, worksite-based, and community-based health programming

…and roles in assuring access to medical care
Complexity in population health strategies

Health & Social Systems
- Scale of operations
- Scope of activity
- Participation incentives
- Compatibility of missions

Resources & expertise

Needs

Preferences

Population & Environment
- Risks
- Threats
- Resources
- Perceptions

Mays et al 2009

Public Health Agency
- Legal authority
- Governing structure
- Leadership

Decision Support
- Accreditation
- Performance measures
- Practice guidelines
- Quality improvement

Strategic Decisions

Scope of services
- Staffing levels & mix
- Distribution of effort
- Nature & intensity of relationships

Scope of activity
- Division of responsibility

Scope of operations

Breadth of organizations

Scope of activity

Scope of operations

Breadth of organizations

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

Reach

Effectiveness

Timeliness

Adherence to EBPs

Efficiency

Equity
Population health delivery systems

Organizations engaged in local public health delivery

% Change 2006-2012

-50%  -30%  -10%  10%  30%  50%

<table>
<thead>
<tr>
<th>Organization</th>
<th>% Change 2006-2012</th>
<th>Scope of Delivery 2012</th>
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<tr>
<td>Local health agency</td>
<td></td>
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<tr>
<td>Other local government</td>
<td>-50%</td>
<td>10% 30% 50%</td>
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<tr>
<td>State health agency</td>
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<td>Other state government</td>
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Seven types of population health delivery systems

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<tr>
<th>Scope</th>
<th>Centralization</th>
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% of communities

Comprehensive

Conventional

Limited

Source: Mays et al. 2010; 2012
Changes in health associated with delivery system

Fixed-effects models control for population size, density, age composition, poverty status, racial composition, and physician supply
Variation in Scope of Public Health Delivery

Delivery of recommended public health activities, 2012

Mortality reductions attributable to investments in public health delivery, 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 delivery, 1993-2008

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

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

New incentives & infrastructure are in play

Next Generation Population Health Improvement

- Value-based payment
- Hospital community benefit regs
- Innovation Center Funding
- Funding constraints
- ACOs and PCMHs
- Employer wellness incentives
- Public health Accreditation
- Health information exchange
- Community Transformation Grants
- Health insurance expansions
Some Promising Examples

Hennepin Health ACO

- Partnership of county health department, community hospital, and FQHC
- Accepts full risk payment for all medical care, public health, and social service needs for Medicaid enrollees
- Fully integrated electronic health information exchange
- Heavy investment in care coordinators and community health workers
- Savings from avoided medical care reinvested in public health initiatives
  - Nutrition/food environment
  - Physical activity
Some Promising Examples
Massachusetts Prevention & Wellness Trust Fund

- $60 million invested from nonprofit insurers and hospital systems
- Funds community coalitions of health systems, municipalities, businesses and schools
- Invests in community-wide, evidence-based prevention strategies with a focus on reducing health disparities
- Savings from avoided medical care are expected to be reinvested in the Trust Fund activities
Arkansas Community Connector Program

- Use community health workers & public health infrastructure to identify people with unmet social support needs
- Connect people to home and community-based services & supports
- Link to hospitals and nursing homes for transition planning
- Use Medicaid and SIM financing, savings reinvestment
- ROI $2.92

Source: Felix, Mays et al. *Health Affairs* 2011

www.visionproject.org
How Can Evidence & Community-Engaged Research Help?

- Identify common interests, incentives & problems
- Mitigate asymmetries in power & information
- Use theory, evidence & experience to design strategies with high probability of success
- Measure progress & provide feedback
  - Fail fast
  - Continuously improve
- Evaluate health & economic impact
PBRNs as Mechanisms for Community-Engaged Scholarship & Learning

Identify Common questions of interest

Translation & application

Data exchange

Analysis & interpretation

Engaged practice settings

Research partner

Apply Rigorous research methods
Finding the connections

- Act on aligned incentives
- Exploit the disruptive policy environment
- Innovate, prototype, study – then scale
- Pay careful attention to shared governance, decision-making, and financing structures
- Demonstrate value and accountability to the public
Toward a “rapid-learning system” in population health

In a learning health care system, research influences practice and practice influences research.

- **Design**: Design care and evaluation based on evidence generated here and elsewhere.
- **Implement**: Apply the plan in pilot and control settings.
- **Evaluate**: Collect data and analyze results to show what does and does not work.
- **Adjust**: Use evidence to influence continual improvement.
- **Disseminate**: Share results to improve care for everyone.

**Internal and External Scan**
- Identify problems and potentially innovative solutions.

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