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Integrating Delivery and Financing Systems Across Sectors to Build a Culture of Health

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AcademyHealth Annual Research Meeting • Boston, MA • 26 June 2015

UNIVERSITY OF KENTUCKY
Center for Public Health Systems and Services Research

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

A Framework for Building a Culture of Health

Robert Wood Johnson Foundation

http://www.rwjf.org/en/culture-of-health/2015/11/measuring_what_matte.html

Mission: Widen the lens beyond health care & public health systems

Rigorous research to identify novel mechanisms for aligning delivery and financing systems in ***medical care***, ***public health***, *and* ***social & community services*** in ways that improve ***health*** and ***wellbeing,*** achieve ***efficiencies*** in resource use, and reduce ***inequities***.

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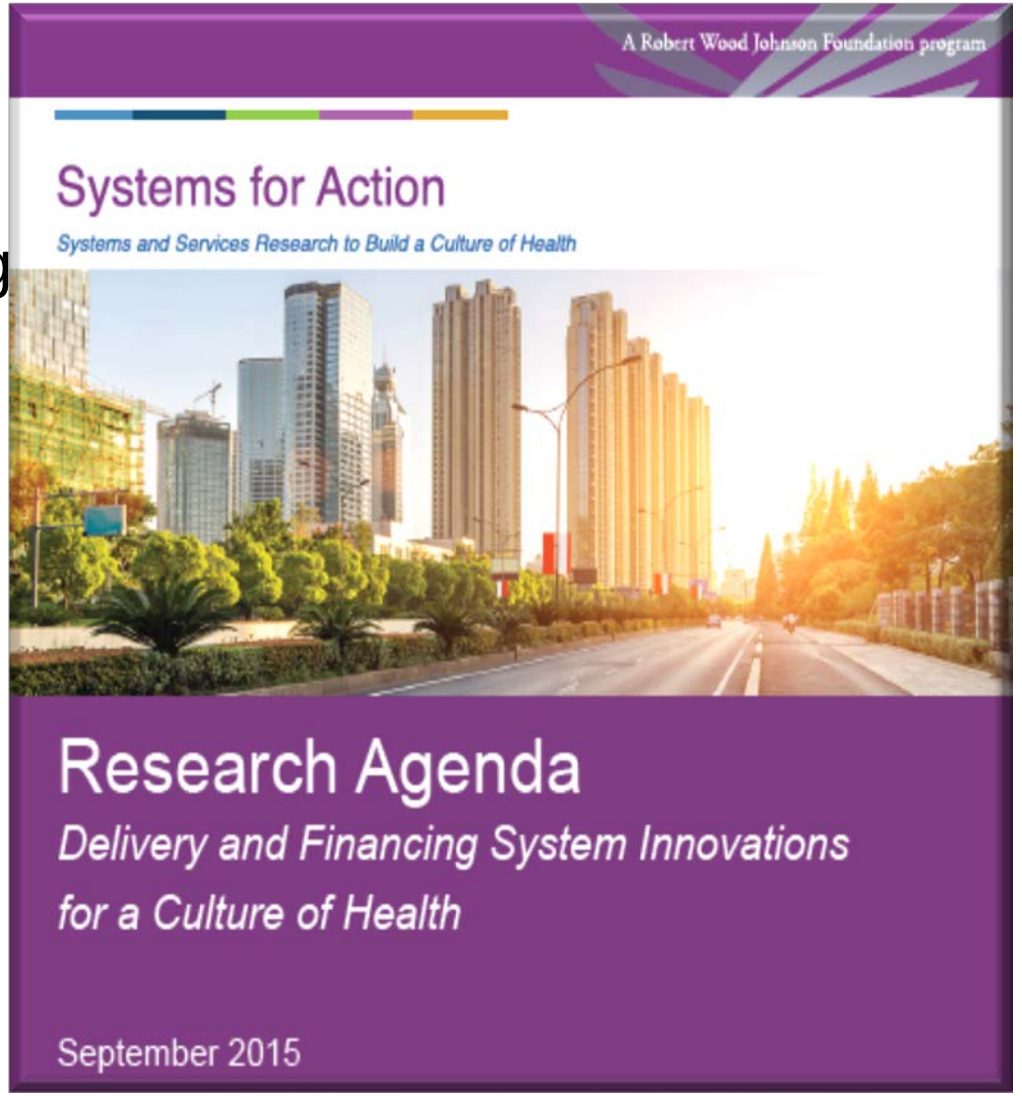


Wide lens: implicated sectors

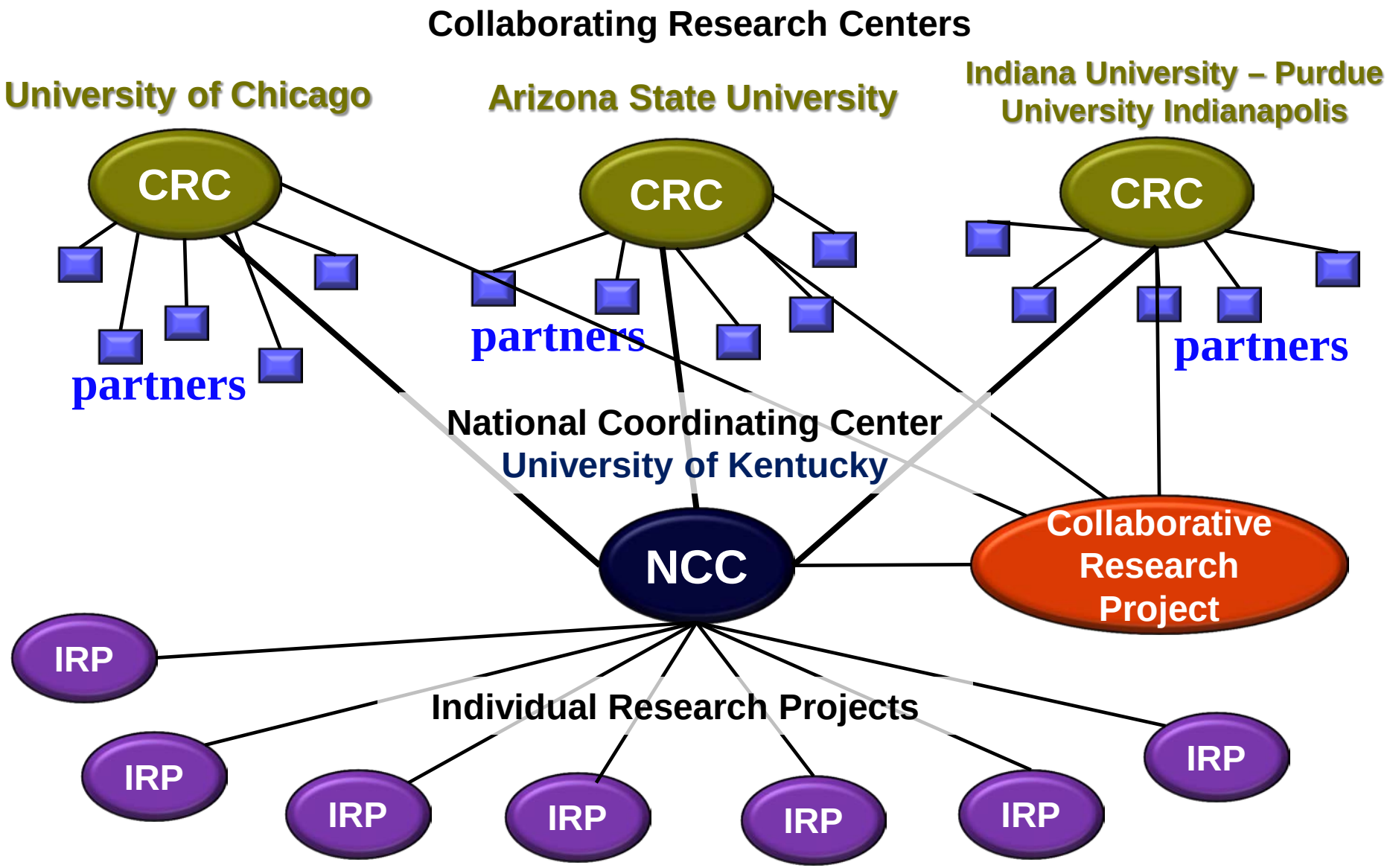
- Public health
- Medical care: ACOs, PCMCs, AHCs
- Income support
- Nutrition and food security
- Education and workforce development
- Housing
- Transportation
- Criminal justice
- Child and family services
- Community development and finance

SNAP
Putting Healthy Food Within Reach
USDA Supplemental Nutrition Assistance Program

Study novel mechanisms for aligning systems and services across sectors

- Innovative alliances and partnerships
- Inter-governmental and public-private ventures
- New financing and payment arrangements
- Incentives for individuals, organizations & communities
- Governance and decision-making structures
- Information exchange and decision support
- New technology: m-health, tele-health
- Community engagement, public values and preferences
- Innovative workforce and staffing models
- Cross-sector planning and priority-setting

S4A Program Structure



Signature research projects

- ***University of Chicago:*** Randomized trial of a Comprehensive Care, Community and Culture program
- ***Arizona State University:*** Analysis of medical, mental health, and criminal justice system interactions for persons with behavioral health disorders
- ***IUPUI:*** Evaluating integration and decision support strategies for a community-based safety net health care and public health system
- ***University of Kentucky:*** Measuring multi-sector contributions to public health services and impact on population health.

Understanding the Value of Multi-Sector Work to Improve Population Health

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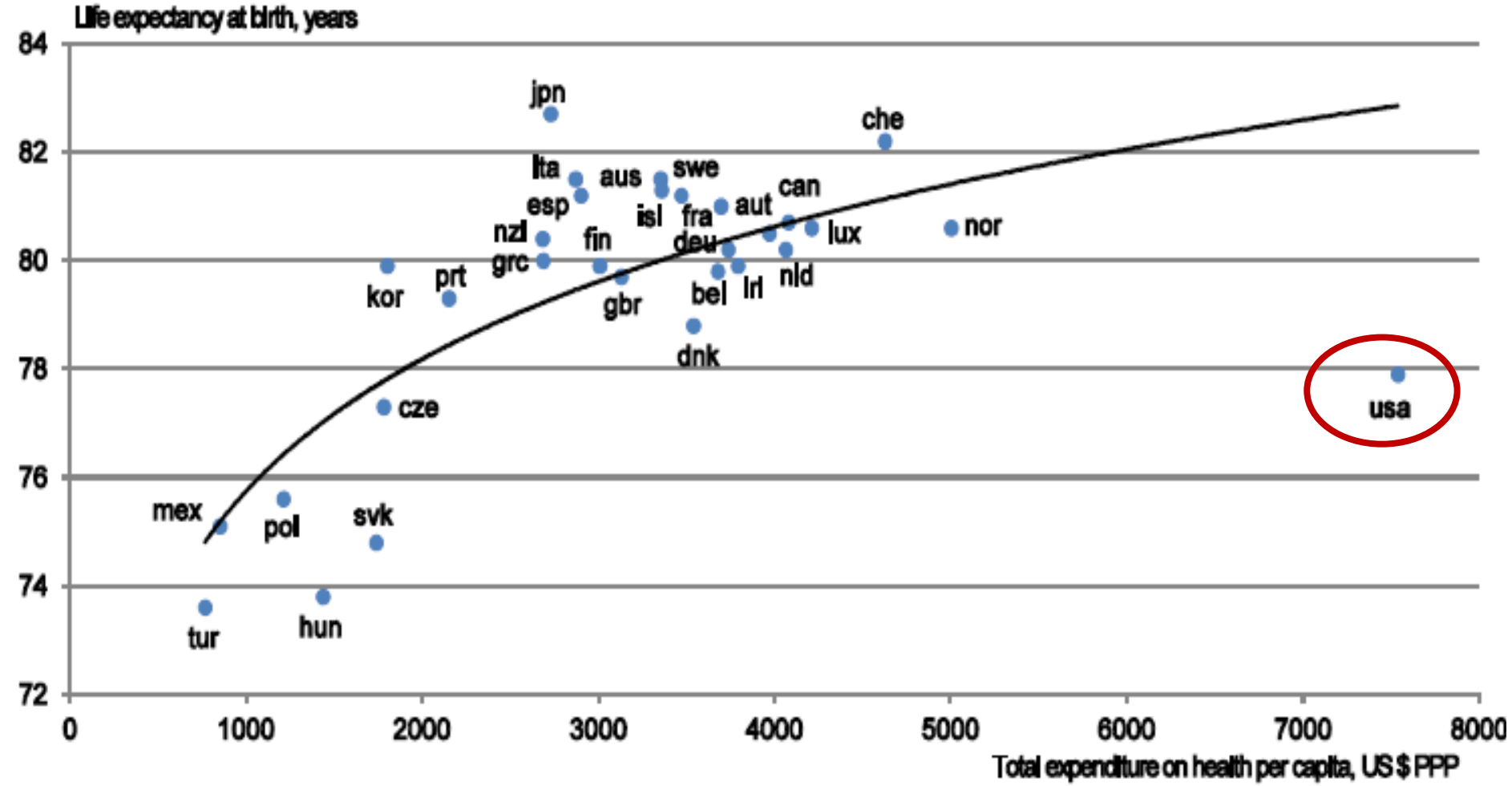
Losing ground in population health



1. Or latest year available.

Source: OECD Health Data 2010.

WHO 2010

How do we support effective population health improvement strategies?

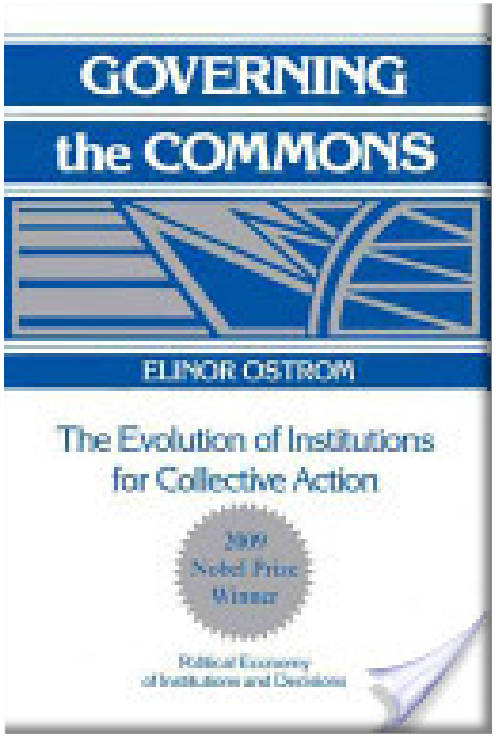
- Designed to achieve large-scale health improvement: neighborhood, city/county, region
- Target fundamental and often multiple determinants of health
- Mobilize the collective actions of multiple stakeholders in government & private sector

  - Infrastructure
  - Information
  - Incentives

Mays GP. Governmental public health and the economics of adaptation to population health strategies. ***National Academy of Medicine Discussion Paper.*** 2014. http://nam.edu/wp-content/uploads/2015/06/EconomicsOfAdaptation.pdf

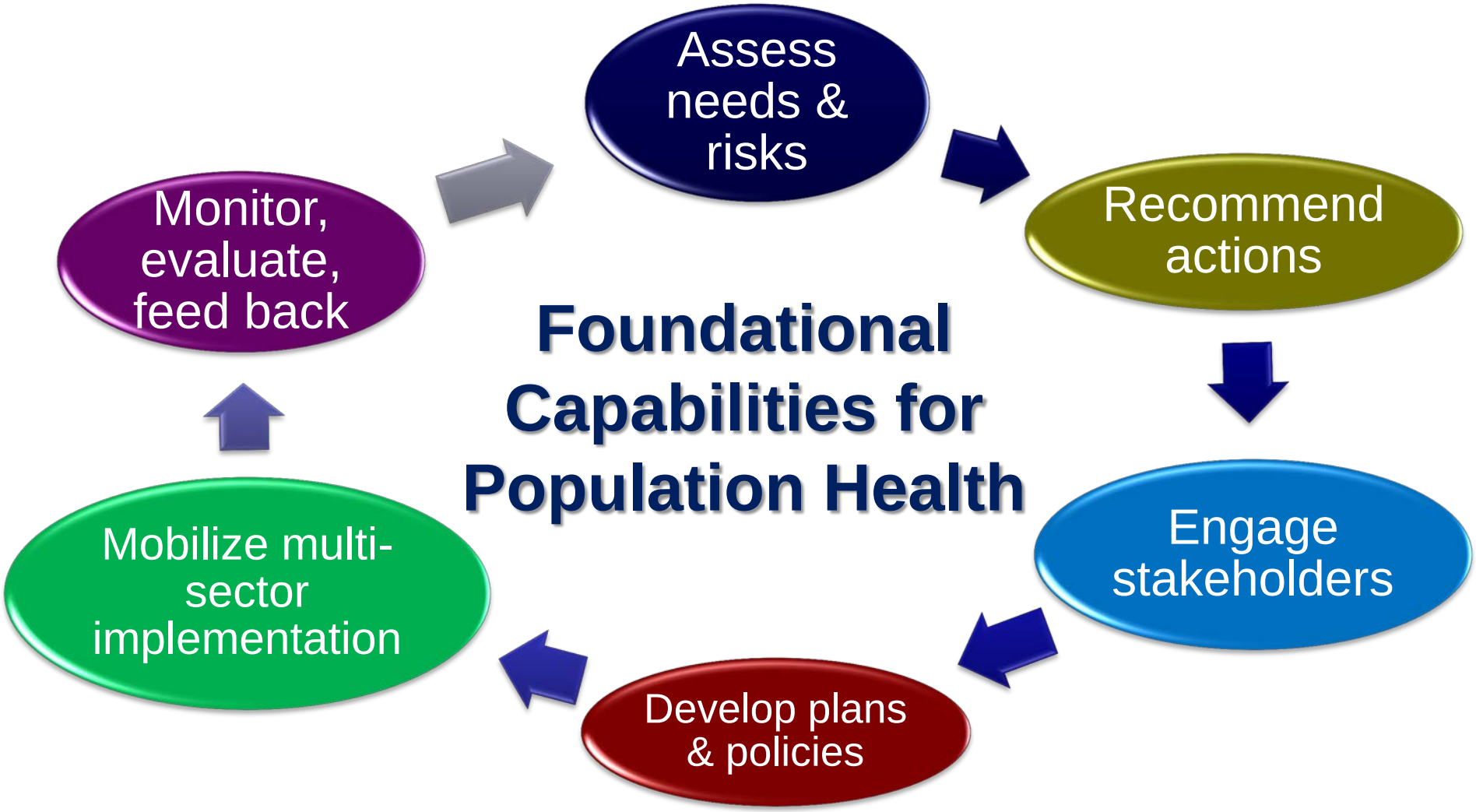
Challenge: overcoming collective action problems across systems & sectors

- 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



Ostrom E. 1994

Catalytic functions to support multi-sector actions in health



National Academy of Sciences Institute of Medicine: ***For the Public's Health: Investing in a Healthier Future.*** Washington, DC: National Academies Press; 2012.

Questions of interest

- Which organizations contribute to the implementation of population health activities in local communities?
- How do these contributions change over time?

  Recession | Recovery | ACA implementation

- What are the health and economic effects attributable to these multi-sector activities?

Guided by Culture of Health Action Framework

Robert Wood Johnson Foundation

http://www.rwjf.org/en/culture-of-health/2015/11/measuring_what_matte.html

A useful lens for studying multi-sector work

National Longitudinal Survey of Public Health Systems

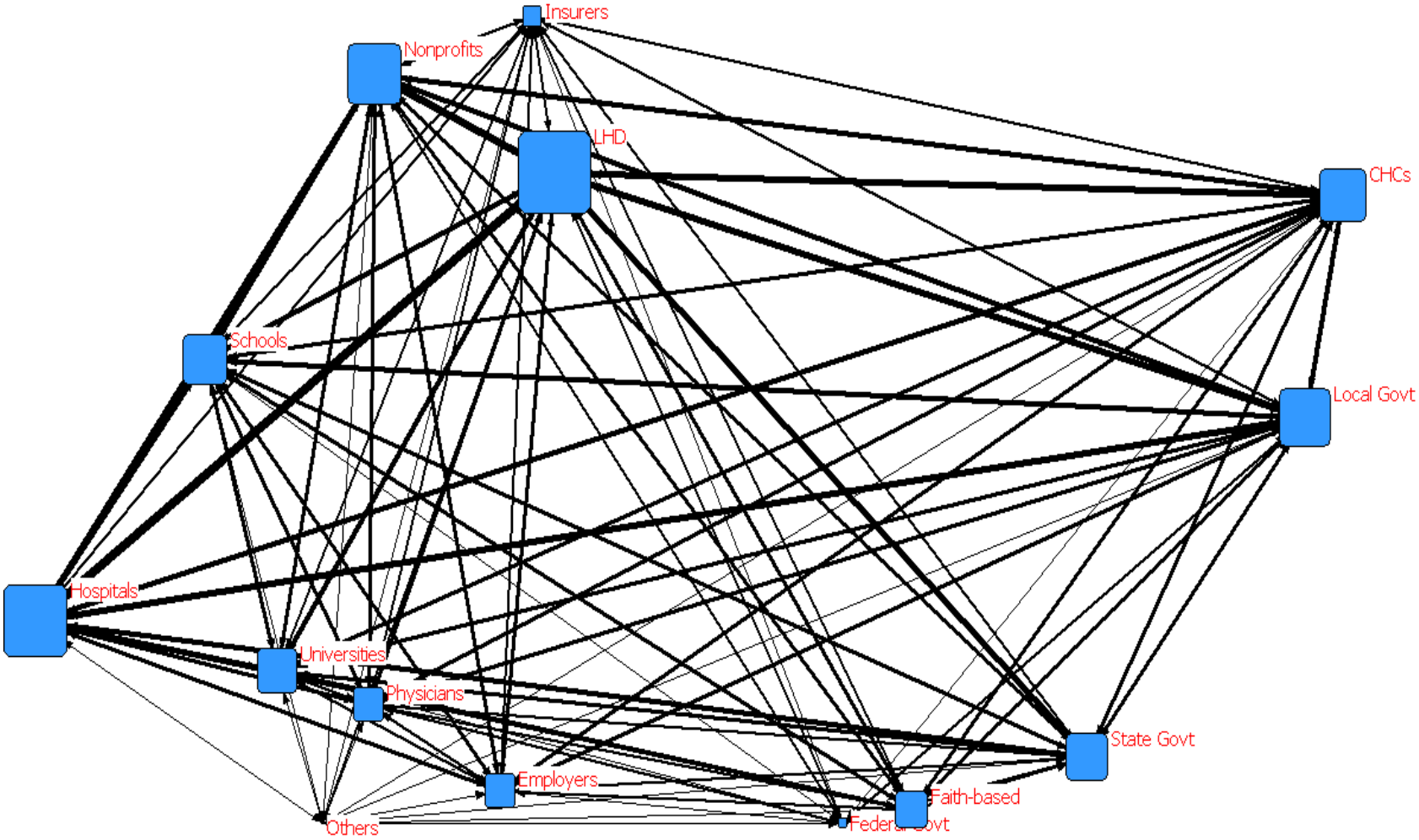
- Cohort of 360 communities with at least 100,000 residents
- Followed over time: 1998, 2006, 2012, 2014**, 2016
- Local public health officials report:
  - ***Scope***: availability of 20 recommended population health activities
  - ***Network***: organizations contributing to each activity
  - ***Centrality of effort***: contributed by governmental public health agency
  - ***Quality***: perceived effectiveness of each activity

** Expanded sample of 500 communities<100,000 added in 2014 wave

Data linkages expand analytic possibilities

- **Area Health Resource File**: health resources, demographics, socioeconomic status, insurance coverage
- **NACCHO Profile data**: public health agency institutional and financial characteristics
- **CMS Impact File & Cost Report**: hospital ownership, market share, uncompensated care
- **Dartmouth Atlas**: Area-level medical spending (Medicare)
- **CDC Compressed Mortality File**: Cause-specific death rates by county
- **Equality of Opportunity Project (Chetty)**: local estimates of life expectancy by income
- **National Health Interview Survey**: individual-level health
- **HCUP**: area-level hospital and ED use, readmissions

Mapping who contributes to population health

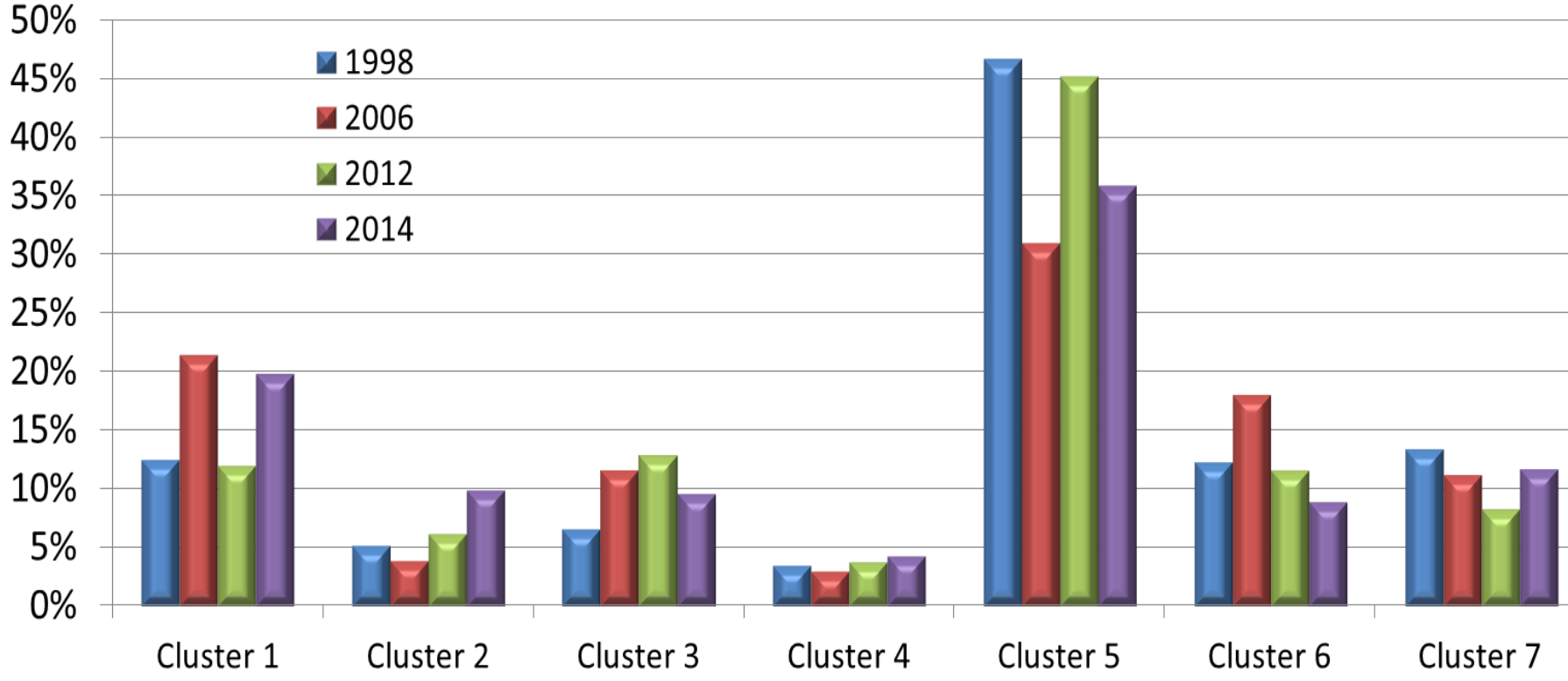


Node size = degree centrality

Line size = % activities jointly contributed (tie strength)

Mays GP et al. Understanding the organization of public health delivery systems: an empirical typology. *Milbank Q.* 2010;88(1):81–111.

Classifying multi-sector delivery systems for population health 1998-2014



	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7
Scope	High	High	High	Mod	Mod	Low	Low
Centrality	Mod	Low	High	High	Low	High	Low
Density	High	High	Mod	Mod	Mod	Low	Mod
	Comprehensive (High System Capital)			**Conventional**		**Limited**	

Comprehensive Public Health Systems

One of RWJF's Culture of Health National Metrics

- ***Broad scope*** of population health activities
- ***Dense network*** of multi-sector relationships
- ***Central actors*** to coordinate actions

Access to public health

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).

47.2%

of population served by a comprehensive public health system

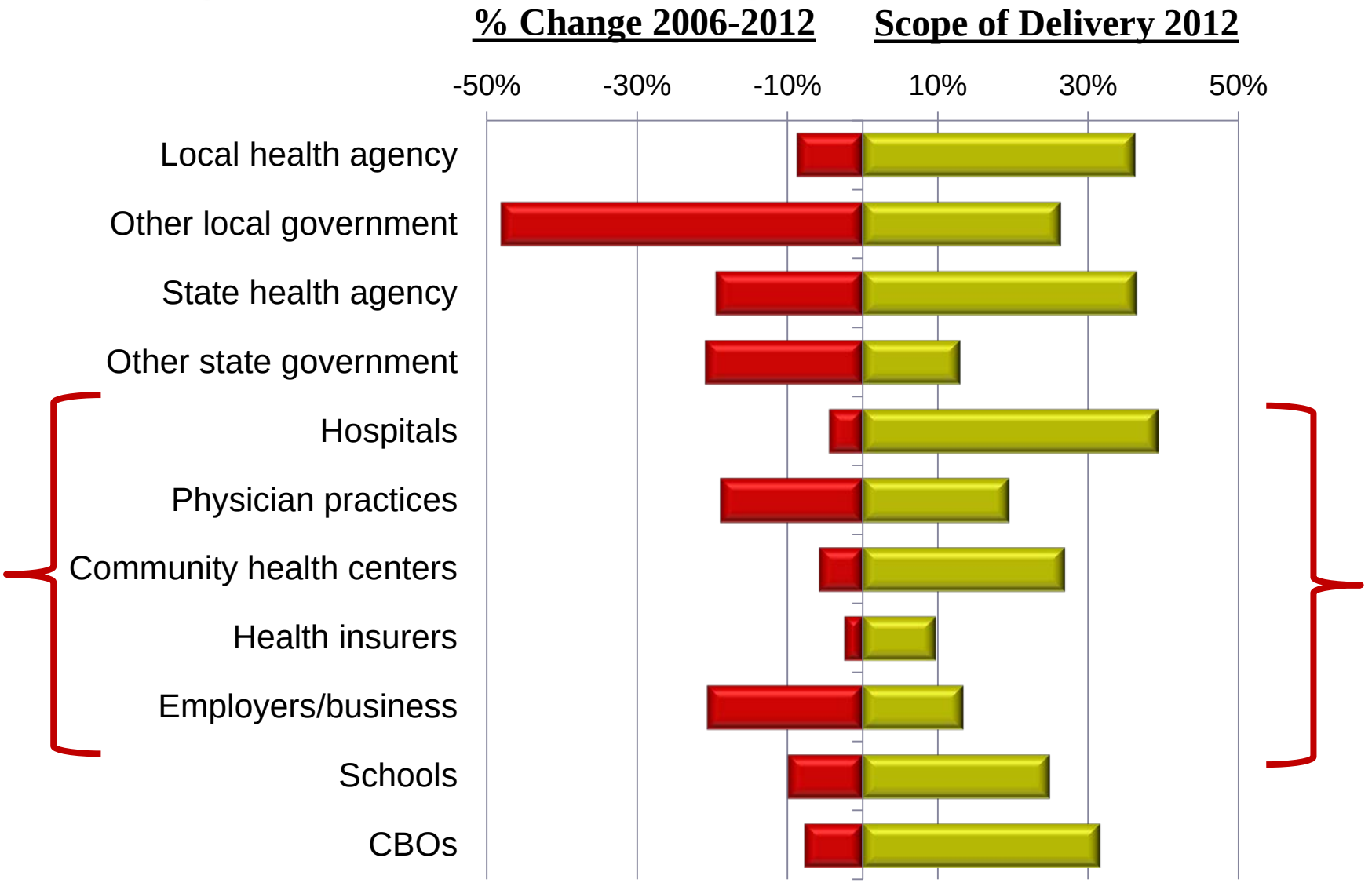
http://www.cultureofhealth.org/en/integrated-systems/access.html

Changes in system prevalence and coverage

System Capital Measures	1998	2006	2012	2014	2014 (<100k)
Comprehensive systems					
% of communities	**24.2%**	**36.9%**	**31.1%**	**32.7%**	**25.7%**
% of population	**25.0%**	**50.8%**	**47.7%**	**47.2%**	**36.6%**
Conventional systems					
% of communities	50.1%	33.9%	49.0%	40.1%	57.6%
% of population	46.9%	25.8%	36.3%	32.5%	47.3%
Limited systems					
% of communities	25.6%	29.2%	19.9%	20.6%	16.7%
% of population	28.1%	23.4%	16.0%	19.6%	16.1%

Mays GP, Hogg RA. Economic shocks and public health protections in US metropolitan areas. Am J Public Health. 2015;105 Suppl 2:S280-7.

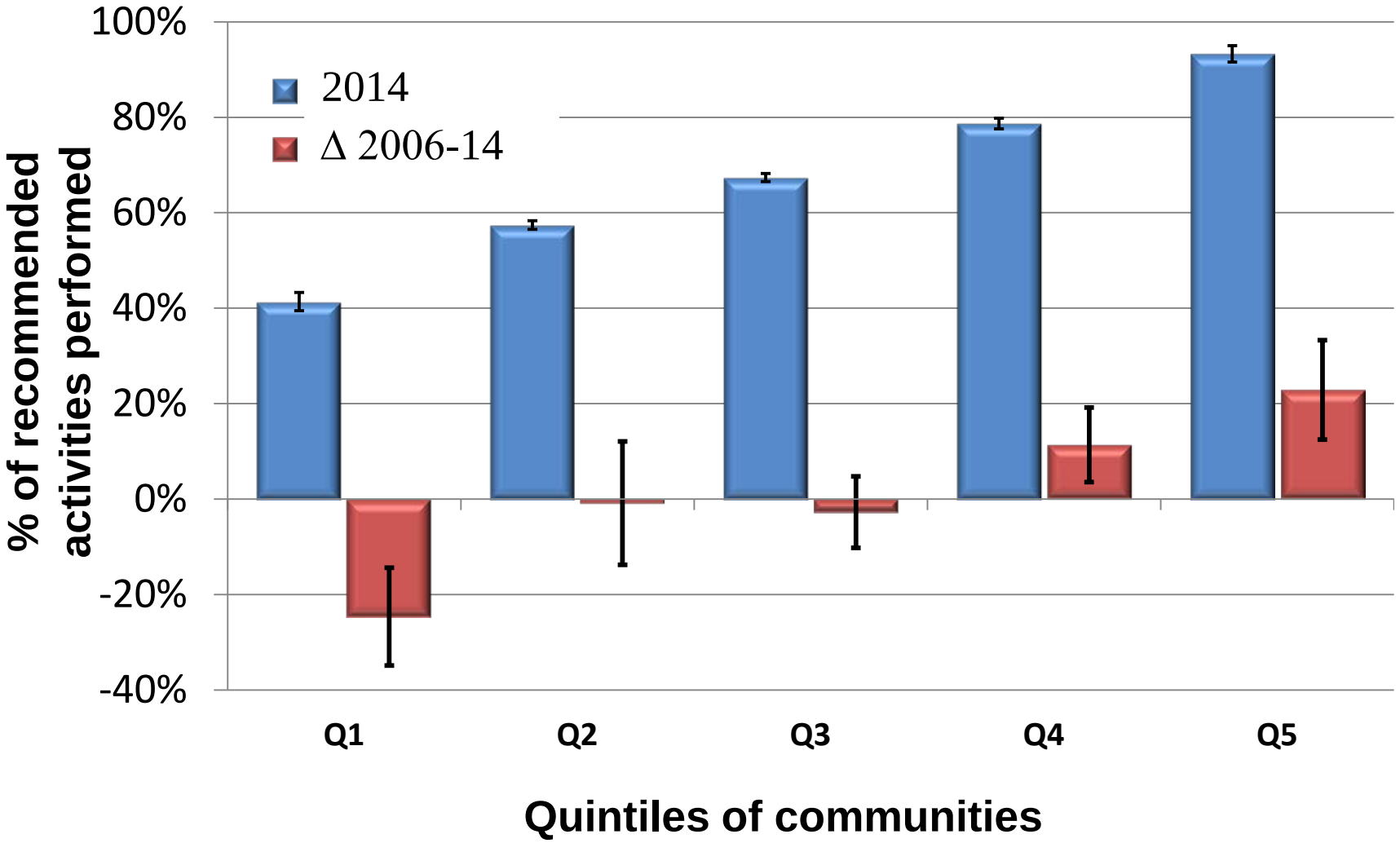
Changes in intensive and extensive margins of system capital during the Great Recession



Mays GP, Hogg RA. Economic shocks and public health protections in US metropolitan areas. Am J Public Health. 2015;105 Suppl 2:S280-7.

Equity in population health delivery systems

Implementation of recommended population health activities



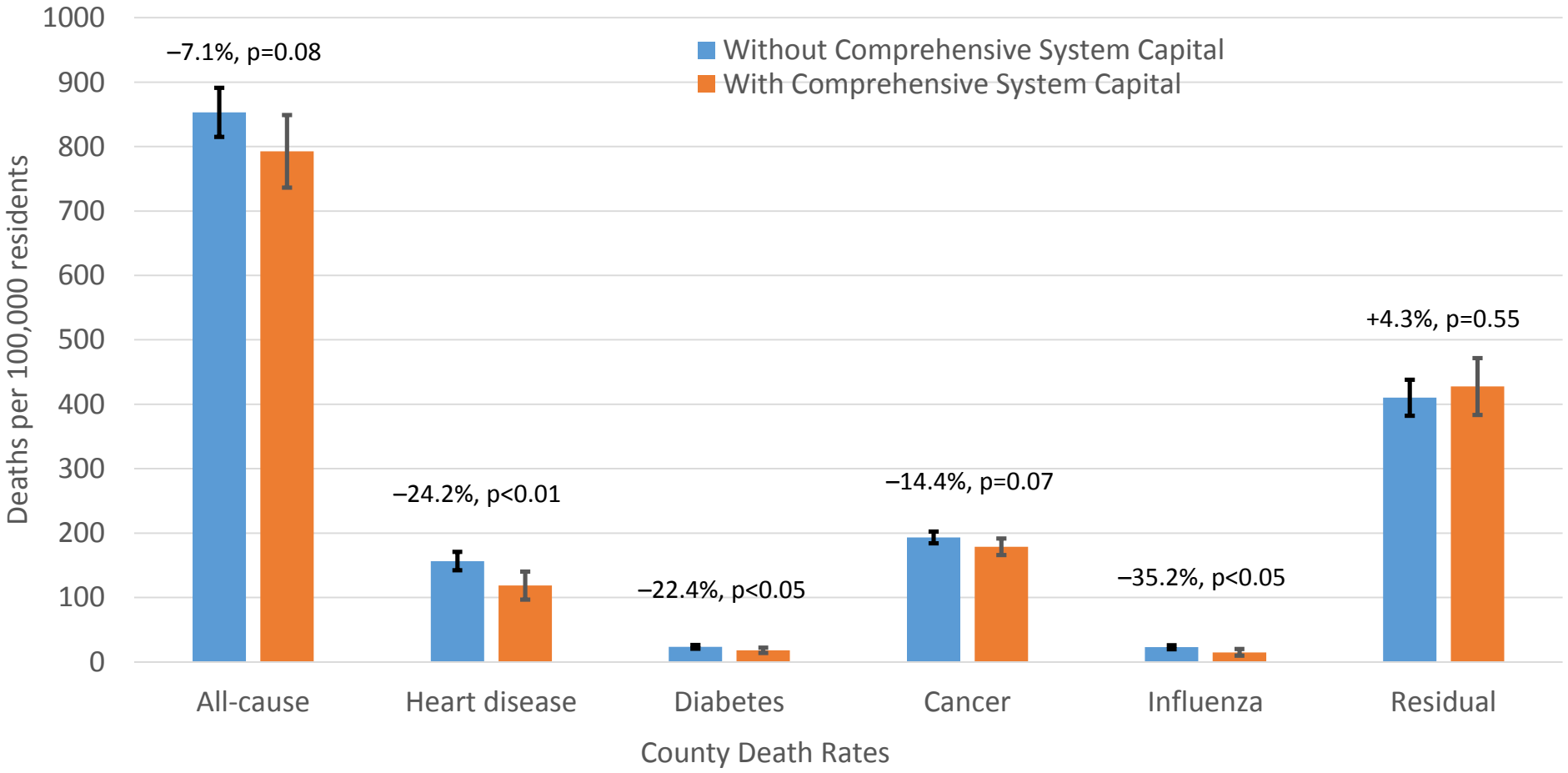
Mays GP, Hogg RA. Economic shocks and public health protections in US metropolitan areas. Am J Public Health. 2015;105 Suppl 2:S280-7.

Organizational contributions to population health activities, 1998-2014

Type of Organization	% of Recommended Activities Implemented 1998	2014	Percent Change
Local public health agencies	60.7%	67.5%	11.1%
Other local government agencies	31.8%	33.2%	4.4%
State public health agencies	46.0%	34.3%	-25.4%
Other state government agencies	17.2%	12.3%	-28.8%
Federal government agencies	7.0%	7.2%	3.7%
Hospitals	37.3%	46.6%	24.7%
Physician practices	20.2%	18.0%	-10.6%
Community health centers	12.4%	29.0%	134.6%
Health insurers	8.6%	10.6%	23.0%
Employers/businesses	16.9%	15.3%	-9.6%
Schools	30.7%	25.2%	-17.9%
Universities/colleges	15.6%	22.6%	44.7%
Faith-based organizations	19.2%	17.5%	-9.1%
Other nonprofit organizations	31.9%	32.5%	2.0%
Other	8.5%	5.2%	-38.4%

Health effects attributable to multi-sector work

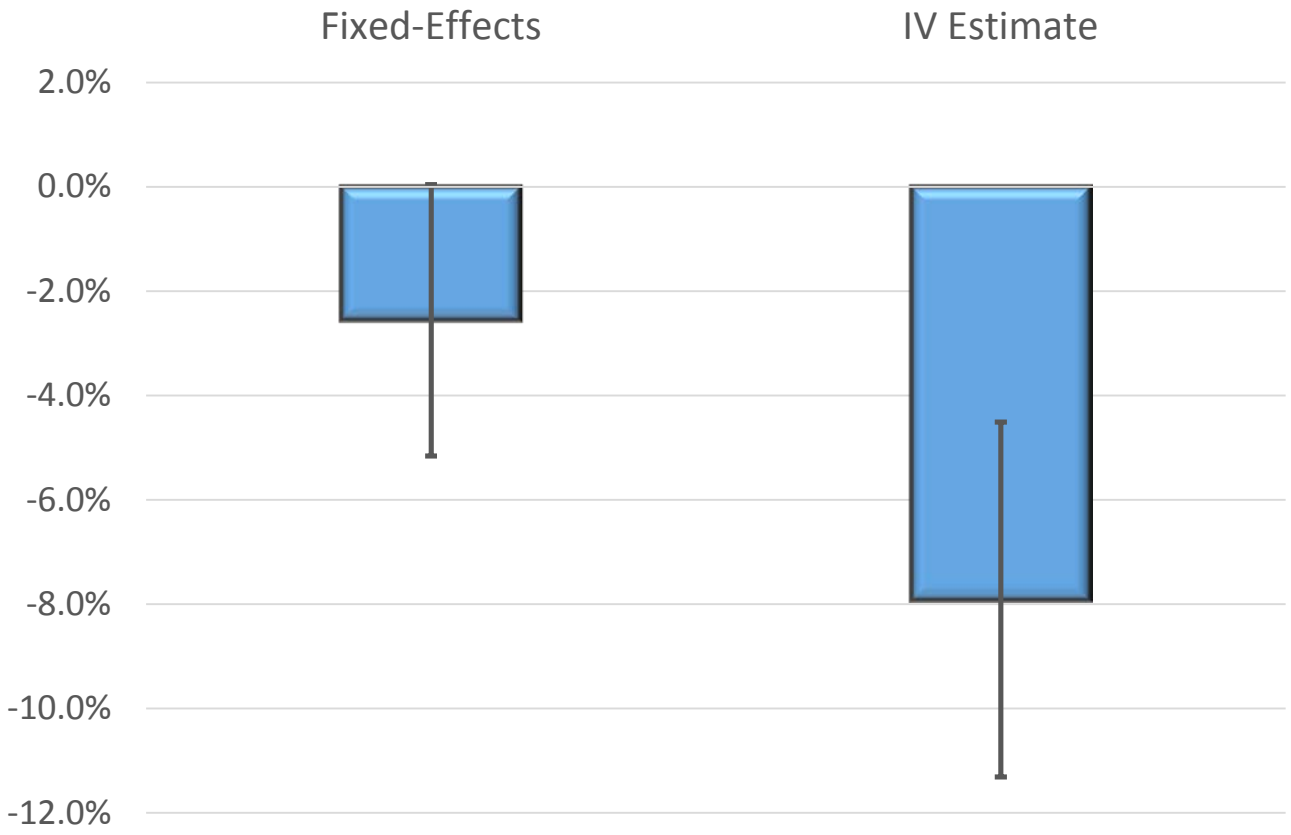
Fixed effects IV Estimates on Mortality, 1998-2014



Models also control for racial composition, unemployment, health insurance coverage, educational attainment, age composition, and state and year fixed effects. N=1019 community-years

Economic effects attributable to multi-sector work

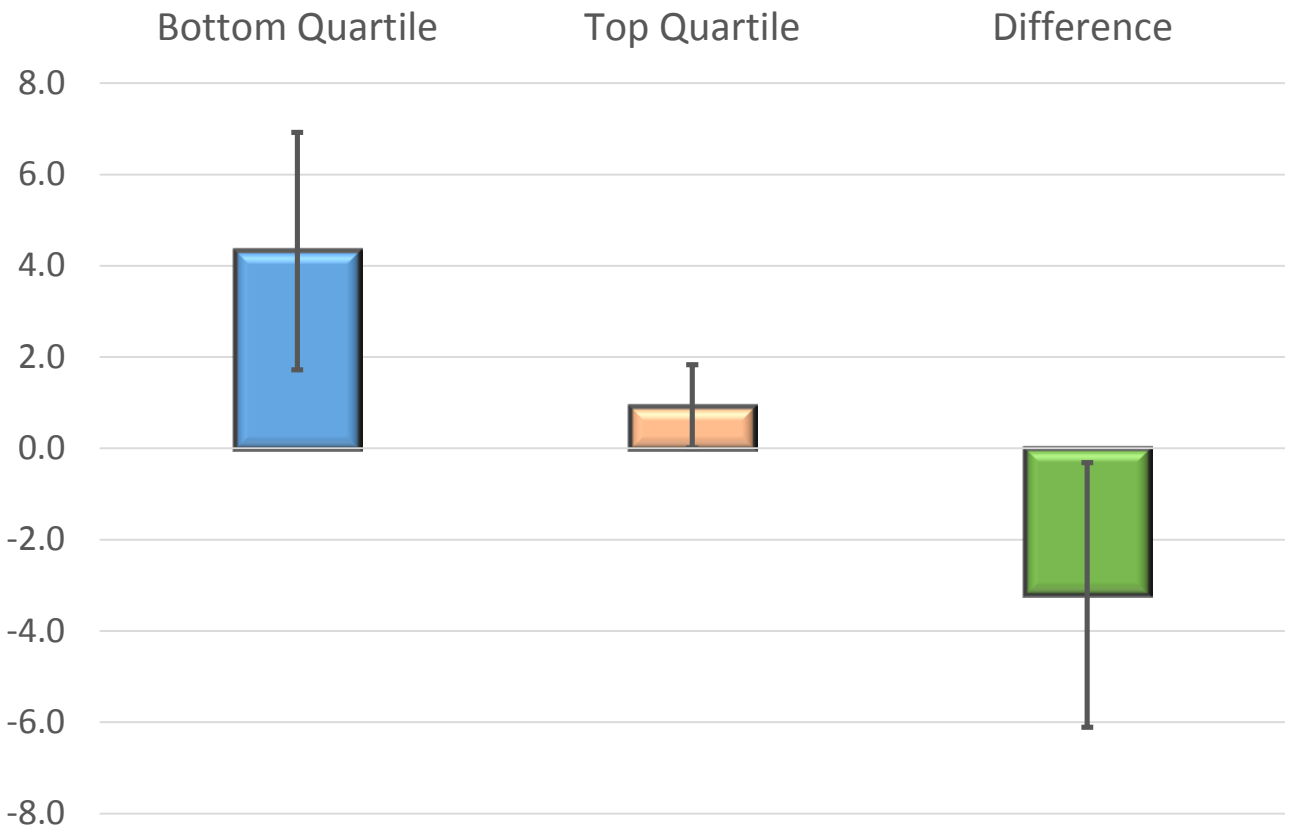
Fixed effects and IV Estimates of Comprehensive System Capital Effects on Medical Spending (Medicare), 1998-2014



Models also control for racial composition, unemployment, health insurance coverage, educational attainment, age composition, and state and year fixed effects. N=1019 community-years. Vertical lines are 95% confidence intervals

Economic effects attributable to multi-sector work

Fixed effects Estimates of Comprehensive System Capital Effects on Life Expectancy by Income (Chetty), 2001-2014



Models also control for racial composition, unemployment, health insurance coverage, educational attainment, age composition, and state and year fixed effects. N=1019 community-years. Vertical lines are 95% confidence intervals

Conclusions: What we know and still need to learn

- Large potential benefits of integrated multi-sector work on population health
- Inequities in population health activities are large
- Integration requires support
  - Infrastructure
  - Institutions
  - Incentives
- Sustainability and resiliency are not automatic

For More Information

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Blog: publichealtheconomics.org

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