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Population Health Management: Building System Capital for Impact

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Population Health Management:
Building "System Capital" for Impact

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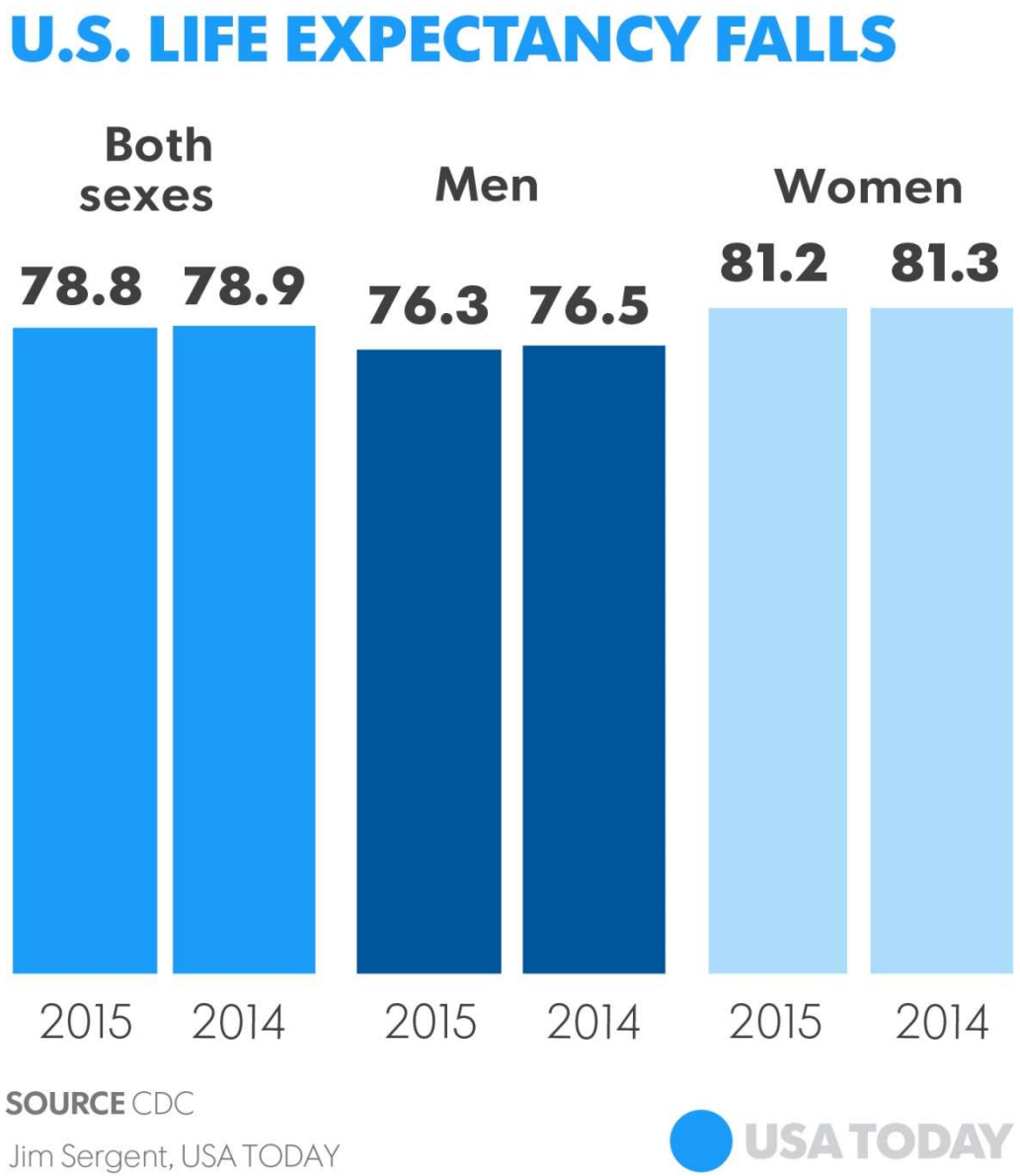
UNIVERSITY OF KENTUCKY
Center for Public Health Systems and Services Research

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

Q: How do we build robust, coordinated systems that support population-wide improvements in health status?

Losing ground in population health



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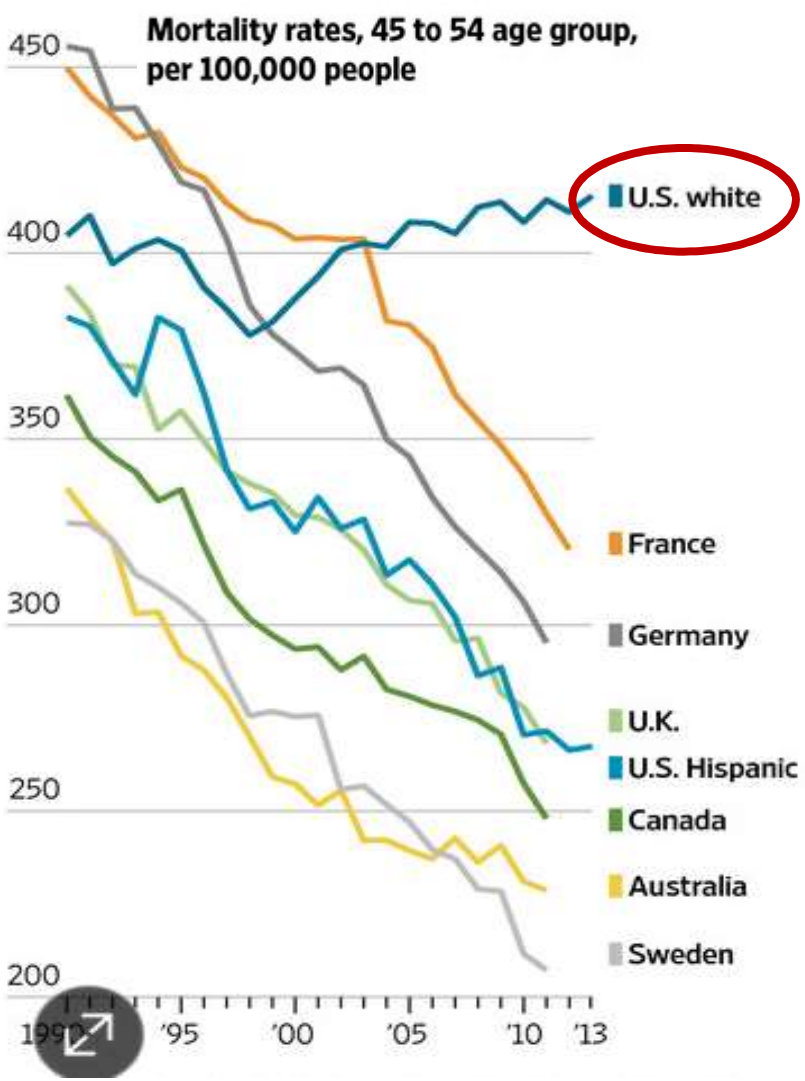
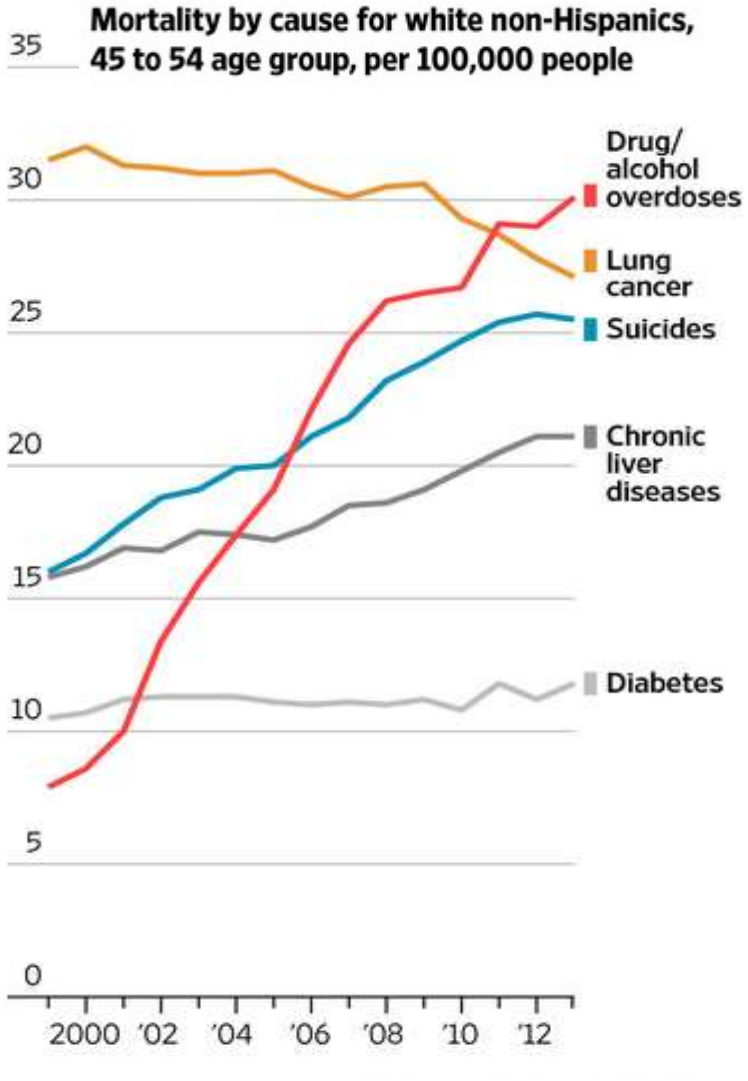
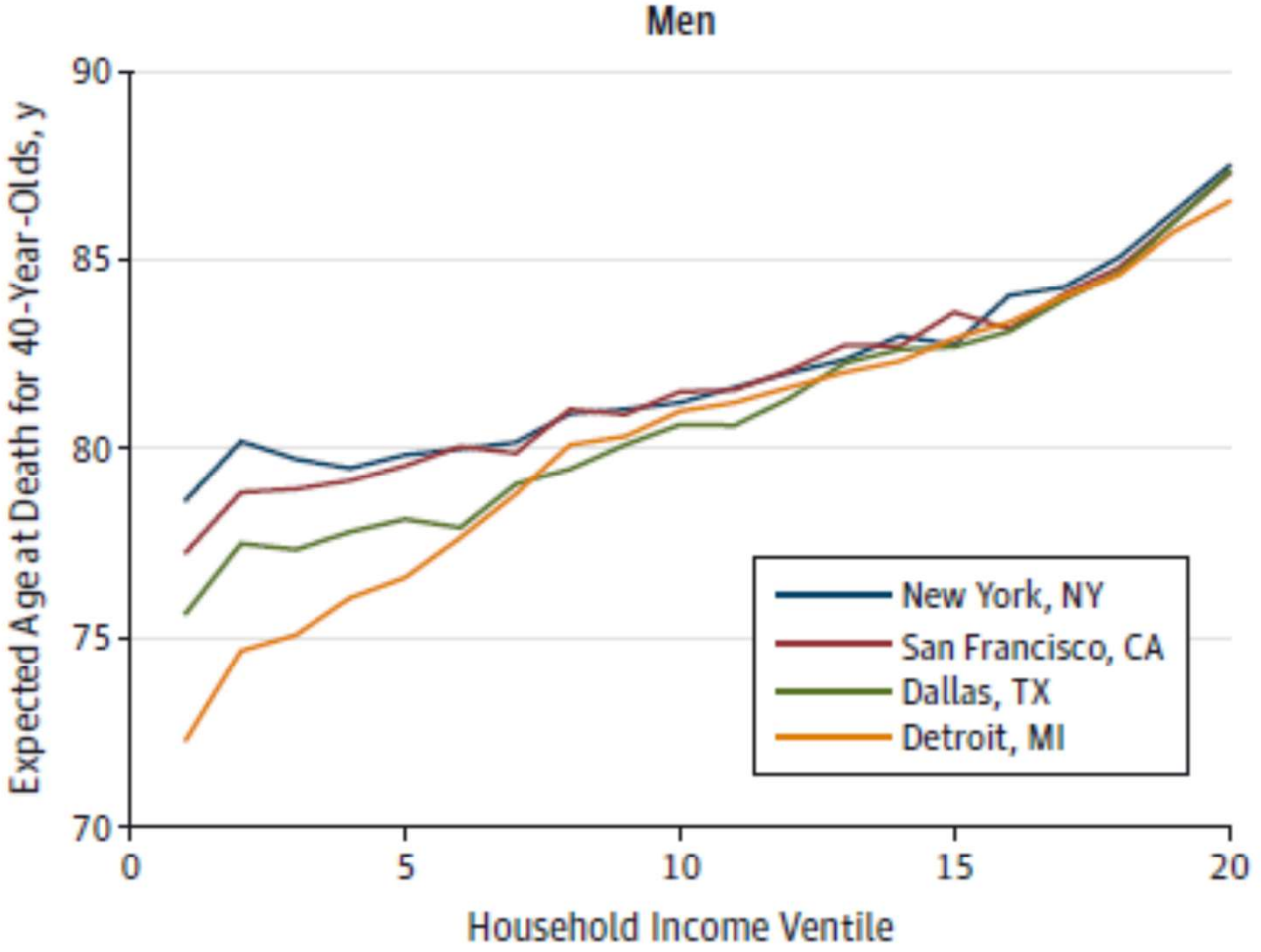
Losing ground in population health





Case A, Deaton A. Proceedings of the National Academy of Sciences 2015

But poor health is not simply a function of socioeconomic status



Chetty et al. JAMA 2016

Costly failures in population health

EXHIBIT 1

Estimates of Waste in US Health Care Spending in 2011, by Category

	Cost to Medicare and Medicaid[a]			Total cost to US health care[b]		
	Low	Midpoint	High	Low	Midpoint	High
Failures of care delivery	$26	$36	$45	$102	$128	$154
Failures of care coordination	21	30	39	25	35	45
Overtreatment	67	77	87	158	192	226
Administrative complexity	16	36	56	107	248	389
Pricing failures	36	56	77	84	131	178
Subtotal (excluding fraud and abuse)	166	235	304	476	734	992
Percentage of total health care spending	6%	9%	11%	18%	27%	37%

""Health Policy Brief: Reducing Waste in Health Care," *Health Affairs*, December 13, 2012.
http://www.healthaffairs.org/healthpolicybriefs/

Drivers of population health failures

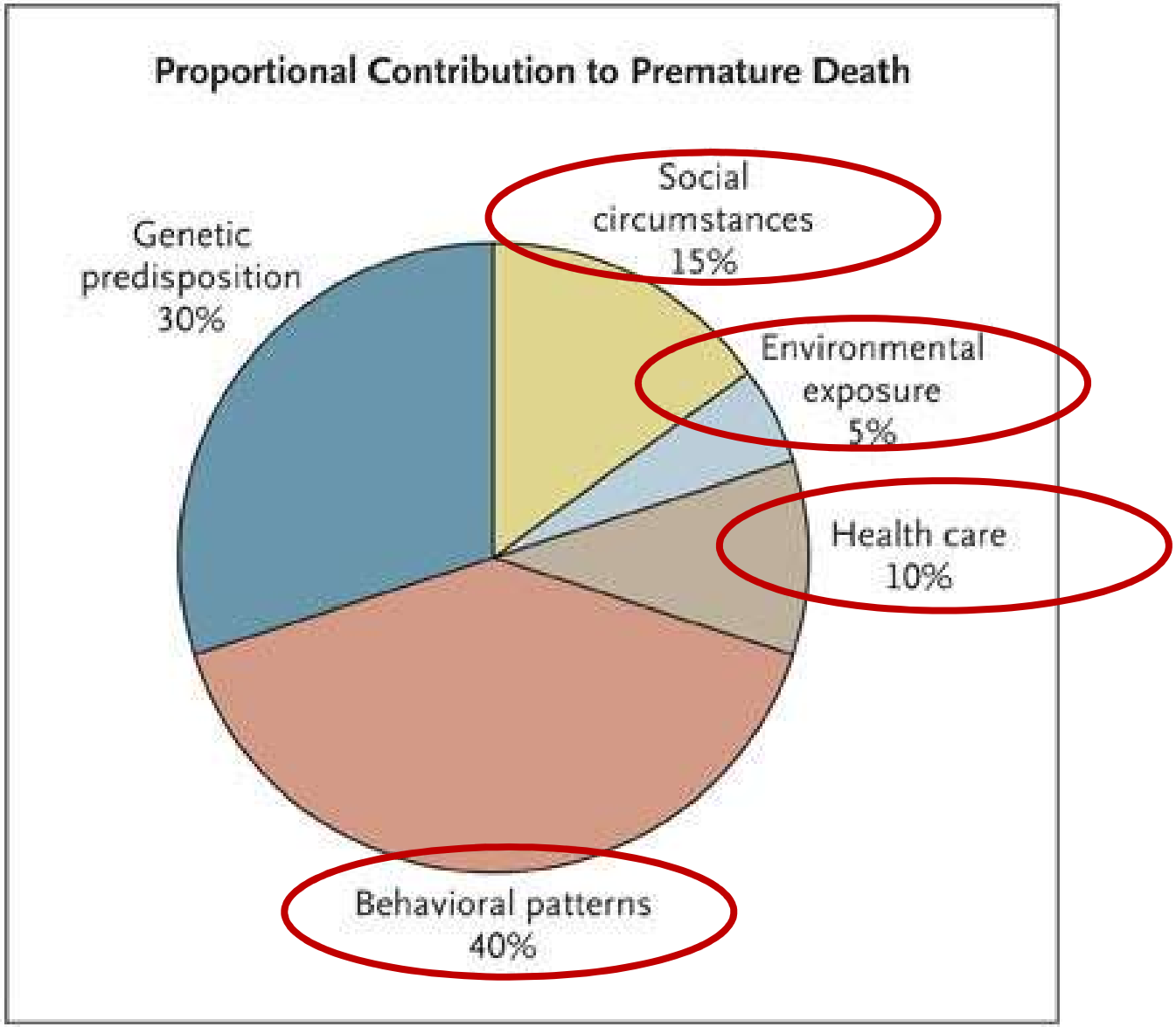
>75% of US health spending is attributable to conditions that are largely preventable

- Cardiovascular disease
- Diabetes
- Lung diseases
- Cancer
- Injuries
- Vaccine-preventable diseases and sexually transmitted infections

<5% of US health spending is allocated to prevention and public health

CDC 2008 and CMS 2011

Multiple systems & sectors drive health…



Schroeder SA. N Engl J Med 2007;357:1221-1228

…But existing systems often fail to connect

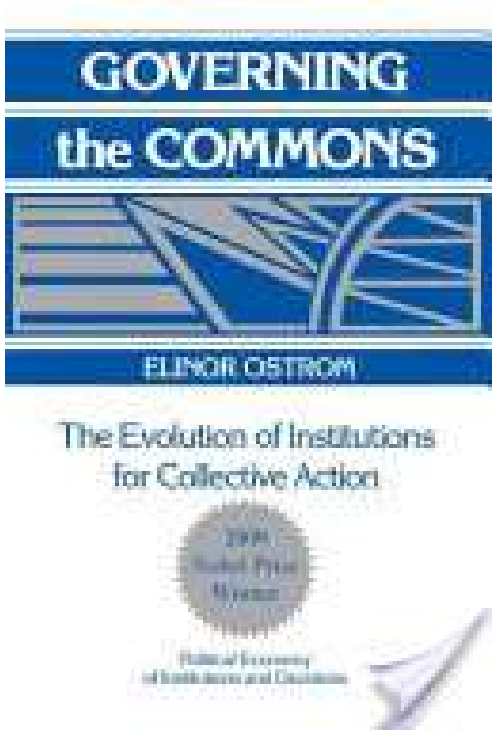
Medical Care ⟷ **Social Services & Supports** ⟷ **Public Health**

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

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

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

What is population health management?

- Designed to achieve large-scale health improvement for groups of people
- Target fundamental and often multiple determinants of health
- Use a longitudinal & life-course perspective
- Mobilize the collective actions of multiple stakeholders and sectors
  - Information
  - Infrastructure
  - Incentives

How are populations defined?

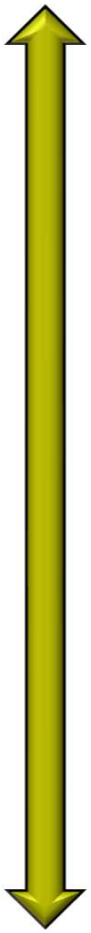
Perspective

Provider

Payor

Sponsor

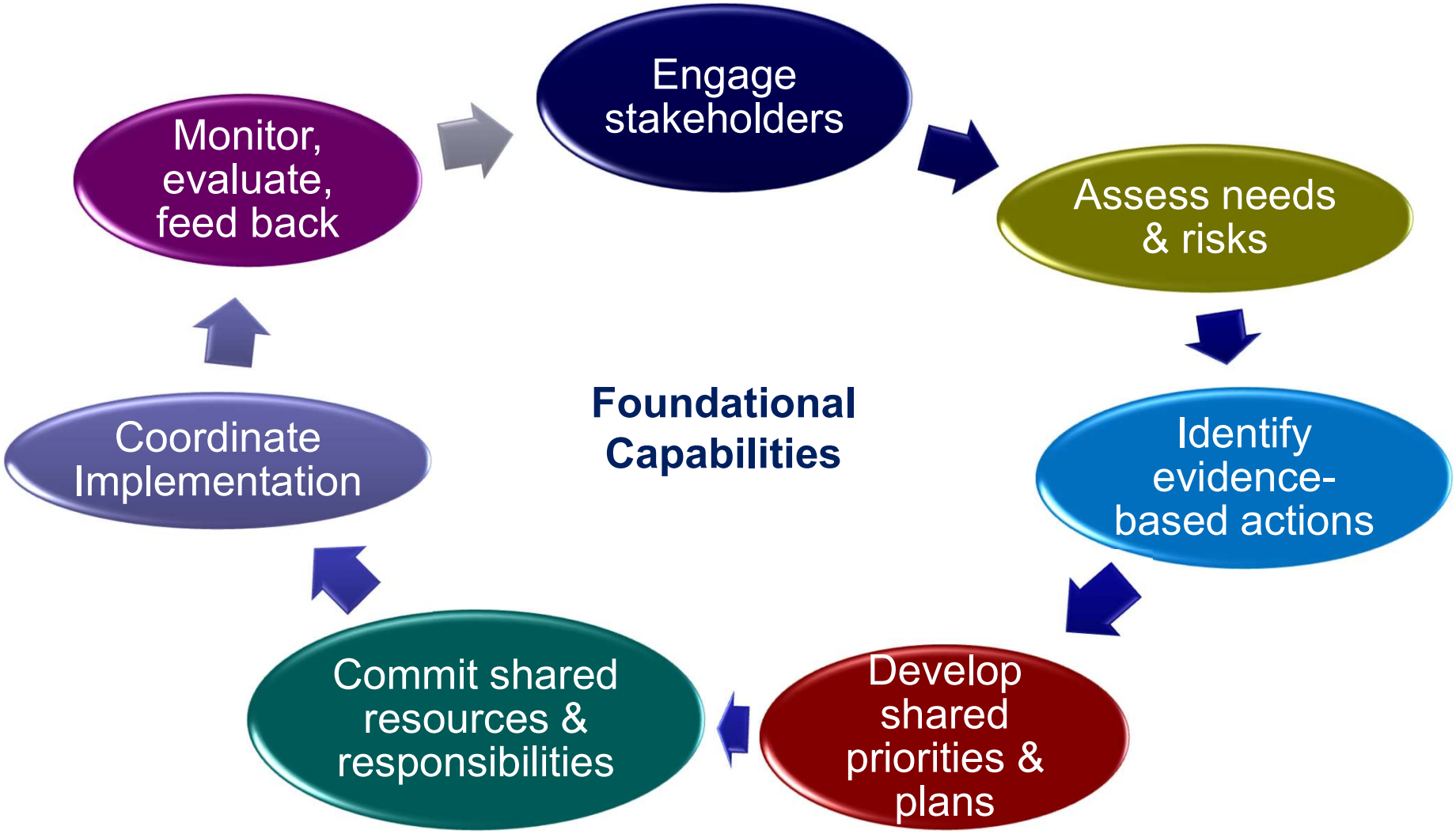
Societal



Method

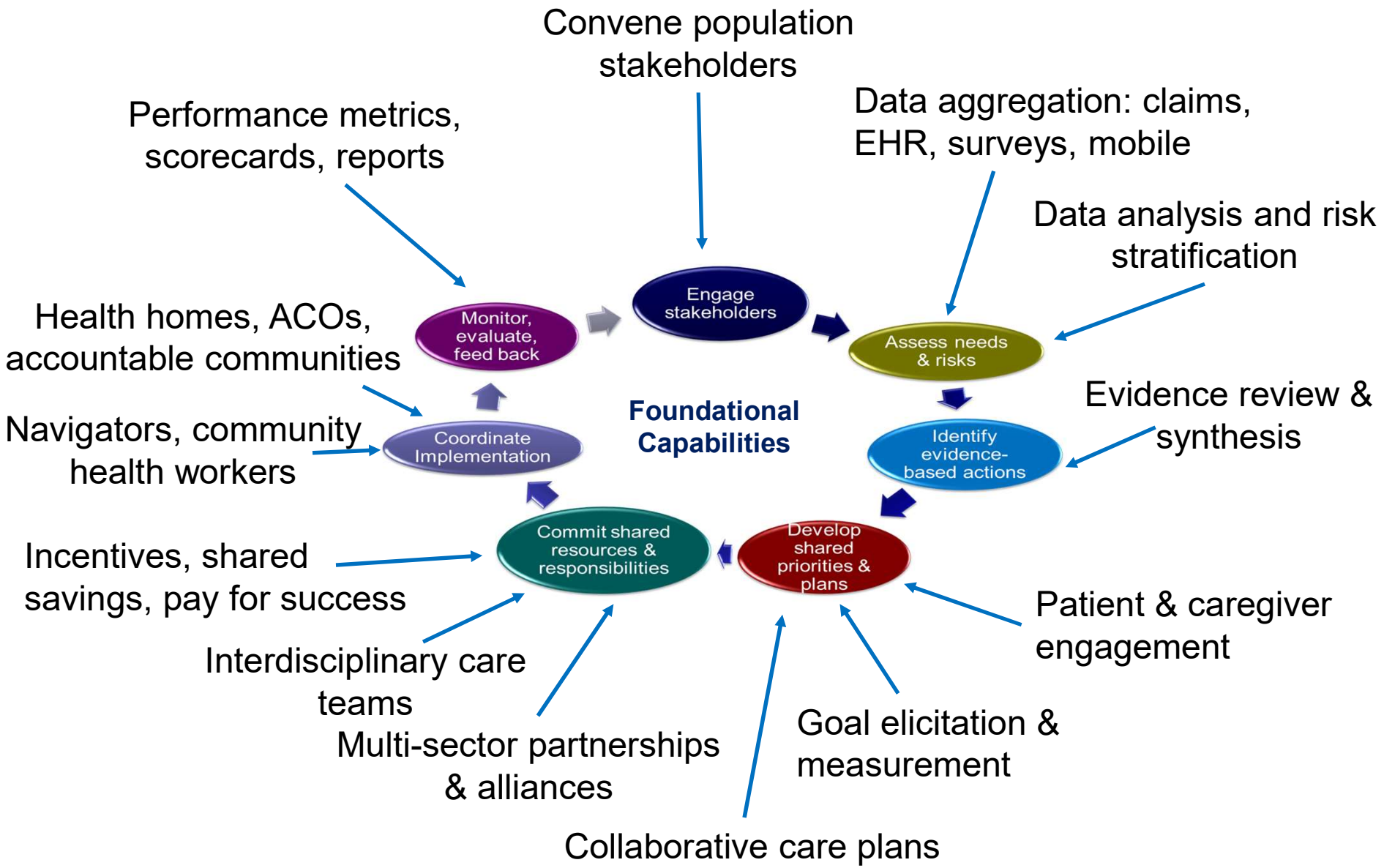
- Assignment: patients assigned to a source of care
- Attribution: patients receiving services at a source of care
- Enrollment: persons enrolled in a source of coverage
- Contract or affiliation: employer, worksite, school, church, association, etc.
- Total population: residence within a neighborhood, community, or region

Foundational Capabilities for Population Health



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

Core Components of Population Health Capabilities



Key components of leading pop health models

	VBH	SCO	COP	Mercy	GRACE	CMP	EDPP
INTERVENTION PROCESS							
Baseline health assessment	•	•	•	•	•	•	•
Social assessment	•	•	•	•	•	•	•
Individualized care plan	•	•	•	•	•	•	•
Interdisciplinary care team	•	•	•	•	•	•	•
Specialized intervention protocols	•				•	•	•
Specialized training for service providers	•	•	•	•	•		
Ongoing monitoring	•	•	•	•	•	•	
Coaching in self-management	•		•	•	•	•	•
Link to or communication with primary care physician or practice	•	•	•	•	•	•	•
Use of electronic health records	•	•	•	•	•	•	•

Shier et al. *Health Affairs* 2013

Key components of leading pop health models

	VBH	SCO	COP	Mercy	GRACE	CMP	EDPP
SERVICE							
Case management	•	•	•	•	•	•	•
Medication management	•	•	•	•	•	•	•
Mental health services	•	•			•		•
Referral to or arrangement for social or supportive services	•	•	•	•	•	•	•
Referral to or arrangement for medical services	•	•	•	•	•	•	•
Caregiver support					•		•

Shier et al. *Health Affairs* 2013

Using community health workers for population health

- ***Targeting***: identifying individuals with unmet health and social needs
  - Reaching hard to reach (urban & rural settings)
  - Mitigating “woodwork” effects
- ***Tailoring***: matching services and supports to consumer needs, preferences, values
  - Education & self-management support
  - Direct service provision
  - Referral
  - Care coordination & navigation

System Capital for Population Health

One of RWJF's Culture of Health National Metrics

- Implement a ***broad scope*** of population health activities
- Through ***dense networks*** of multi-sector relationships
- Including ***central actors*** to coordinate actions

Access to Population 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

What do we know about multi-sector work in population health?

National Longitudinal Survey of Public Health Systems

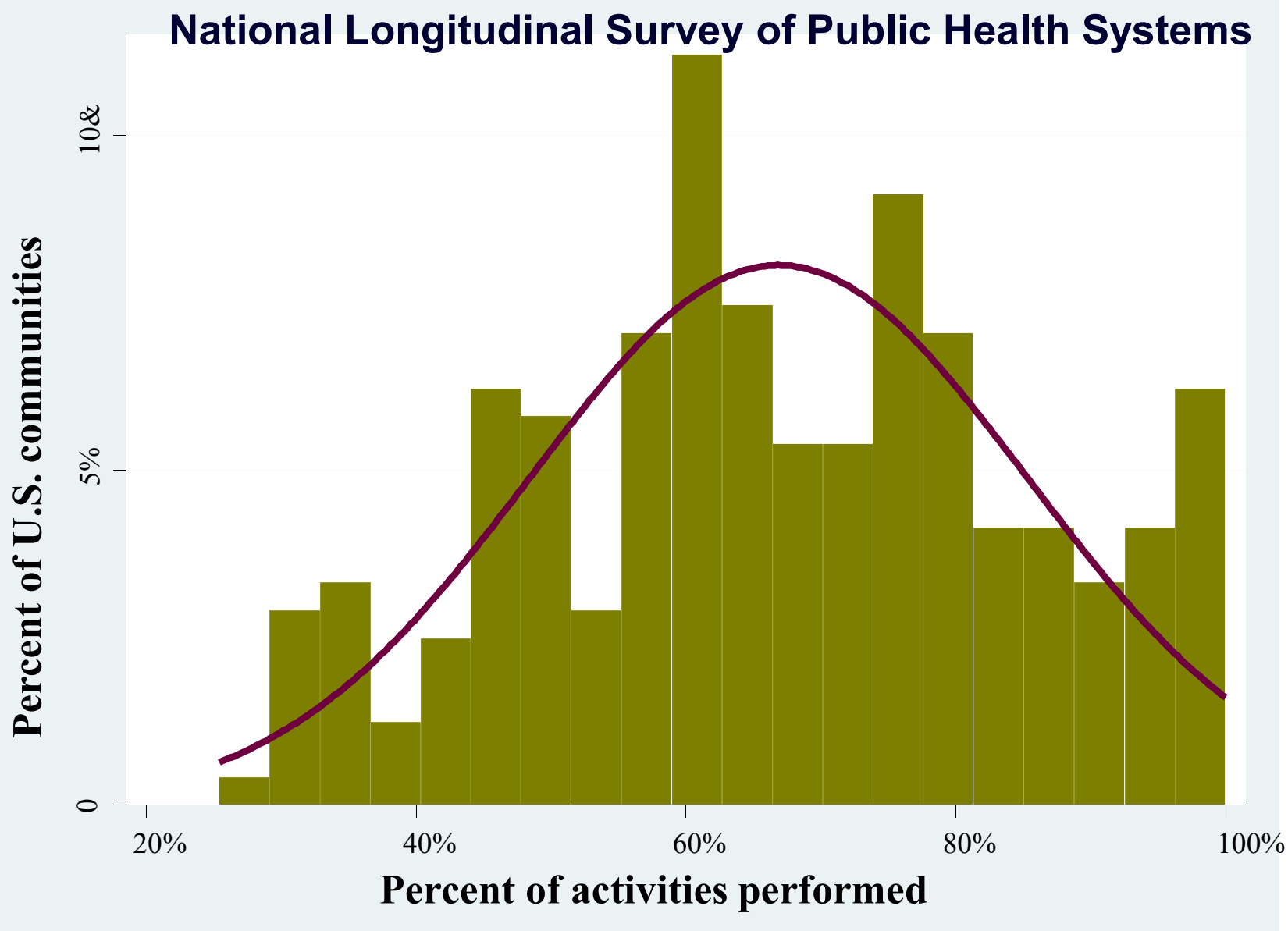
- Cohort of 360 communities with at least 100,000 residents
- Followed over time: 1998-2018
- Local public health officials report:
  - ***Scope***: availability of 20 recommended population health activities
  - ***Network***: organizations contributing to each activity
  - ***Centrality of effort***: 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

- **Area Health Resource File**: health resources, demographics, socioeconomic status, insurance coverage
- **NACCHO Profile data**: public health agency institutional and financial characteristics
- **PHAB:** public health agency accreditation status
- **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
- **Federal health surveys:** National Health Interview Survey, Medical Expenditure Panel Survey

Variation in implementing population health activities



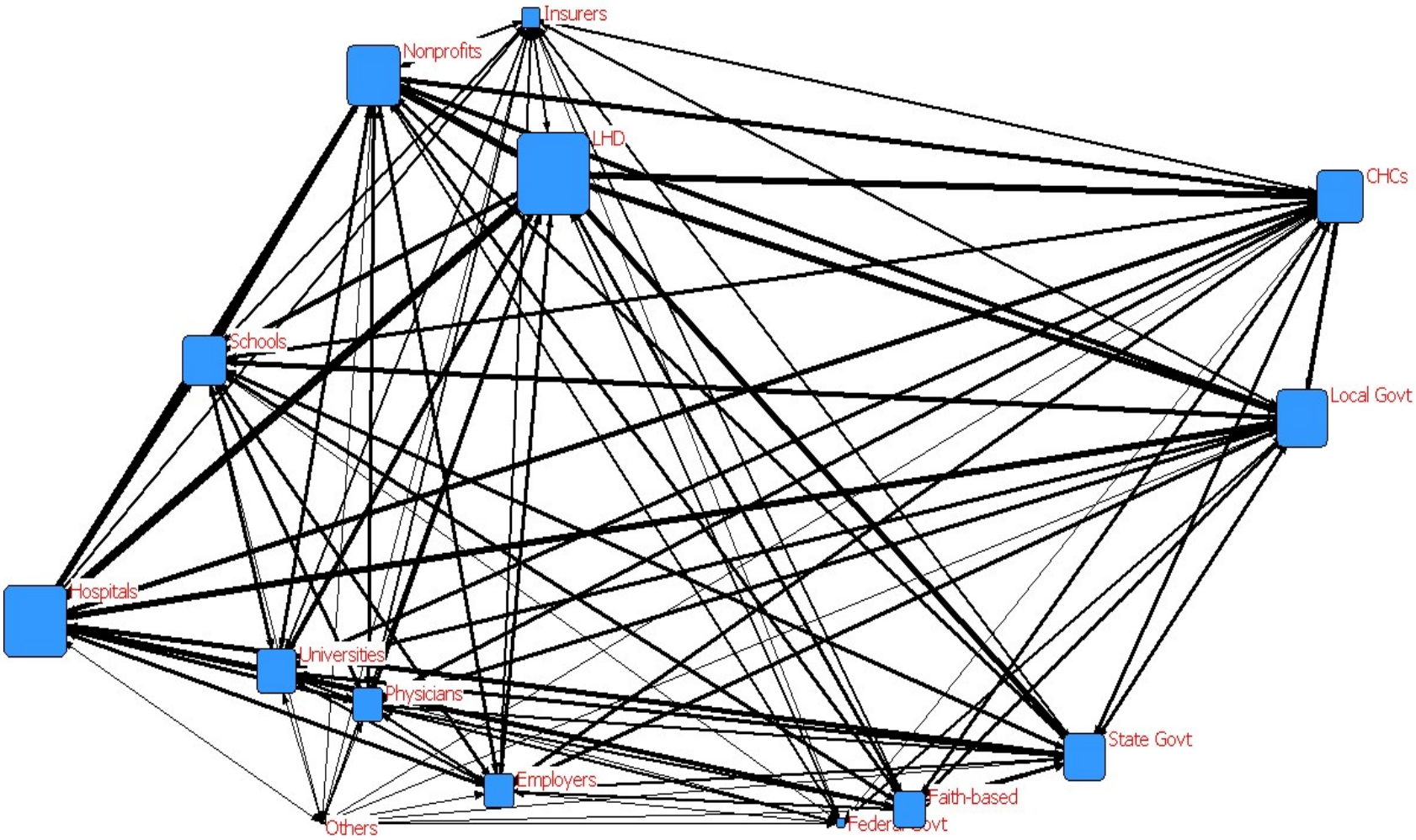
Implementation of population health activities, 1998-2016

	Activity	1998	2016	% Change
Assessment	1. Conduct periodic assessment of community health status and needs	71.5%	87.1%	21.8%
	2. Survey community for behavioral risk factors	45.8%	71.1%	55.2%
	3. Investigate adverse health events, outbreaks and hazards	98.6%	100.0%	1.4%
	4. Conduct laboratory testing to identify health hazards and risks	96.3%	96.1%	-0.2%
	5. Analyze data on community health status and health determinants	61.3%	72.7%	18.6%
	6. Analyze data on preventive services use	28.4%	39.0%	37.3%
Policy/Planning	7. Routinely provide community health information to elected officials	80.9%	84.0%	3.8%
	8. Routinely provide community health information to the public	75.4%	82.3%	9.1%
	9. Routinely provide community health information to the media	75.2%	89.0%	18.3%
	10. Prioritize community health needs	66.1%	83.6%	26.5%
	11. Engage community stakeholders in health improvement planning	41.5%	68.8%	65.7%
	12. Develop a community-wide health improvement plan	81.9%	87.9%	7.3%
	13. Identify and allocate resources based on community health plan	26.2%	41.9%	59.9%
	14. Develop policies to address priorities in community health plan	48.6%	56.8%	16.9%
	15. Maintain a communication network among health-related organizations	78.8%	85.3%	8.2%
Assurance	16. Link people to needed health and social services	75.6%	50.0%	-33.8%
	17. Implement legally mandated public health activities	91.4%	92.4%	1.1%
	18. Evaluate health programs and services in the community	34.7%	37.9%	9.4%
	19. Evaluate local public health agency capacity and performance	56.3%	56.1%	-0.3%
	20. Monitor and improve implementation of health programs and policies	47.3%	46.4%	-1.9%
	Mean performance of assessment activities (#1-6)	67.0%	77.7%	15.9%
	Mean performance of policy and planning activities (#7-15)	63.9%	75.5%	18.3%
	Mean performance of implementation and assurance activities (#16-20)	61.1%	56.6%	-7.3%
	Mean performance of all activities	63.8%	67.6%	6.0%

Organizational contributions to population health activities, 1998-2016

Type of Organization	% of Recommended Activities Implemented 1998	2016	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%

Mapping who contributes to population health

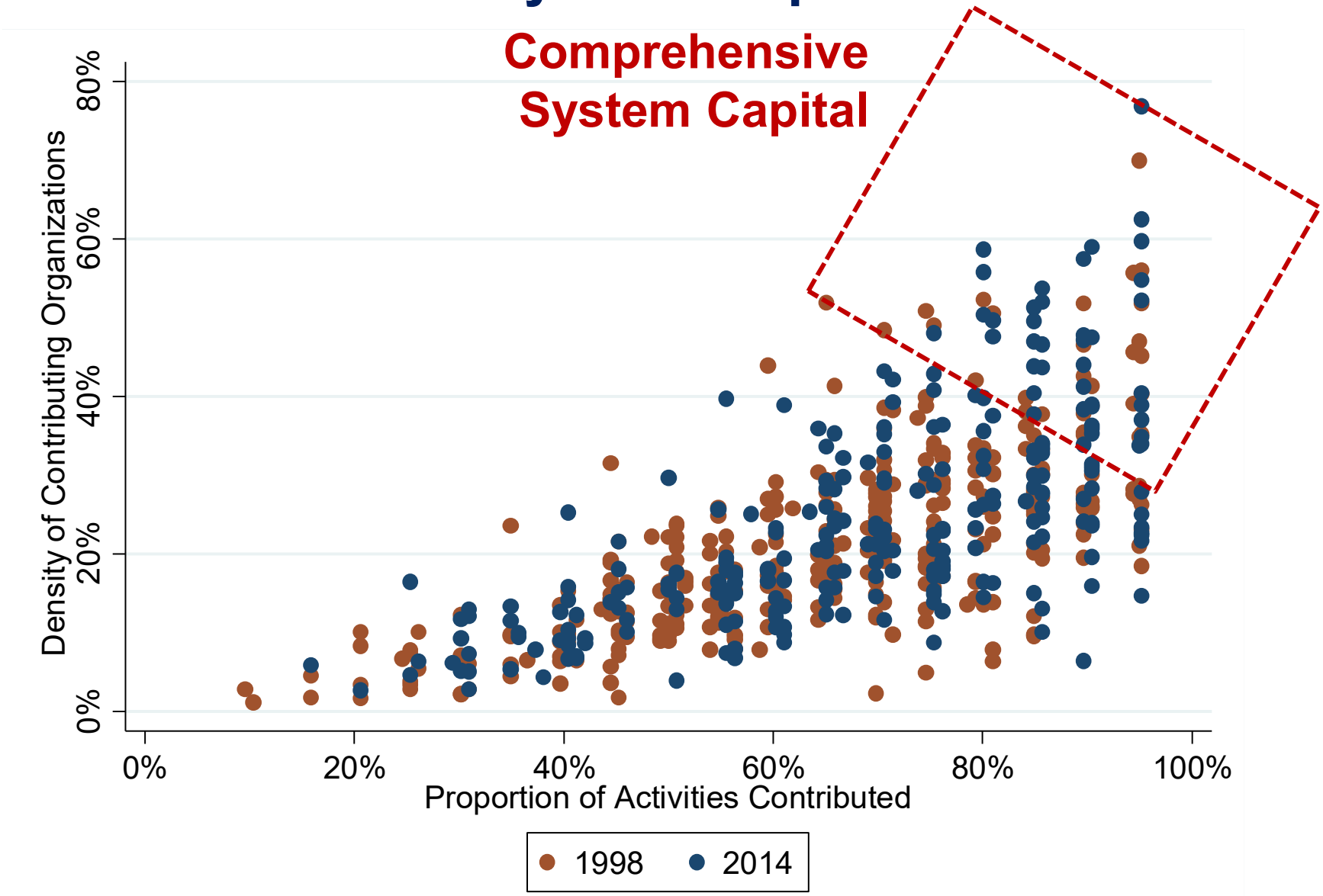


Node size = degree centrality

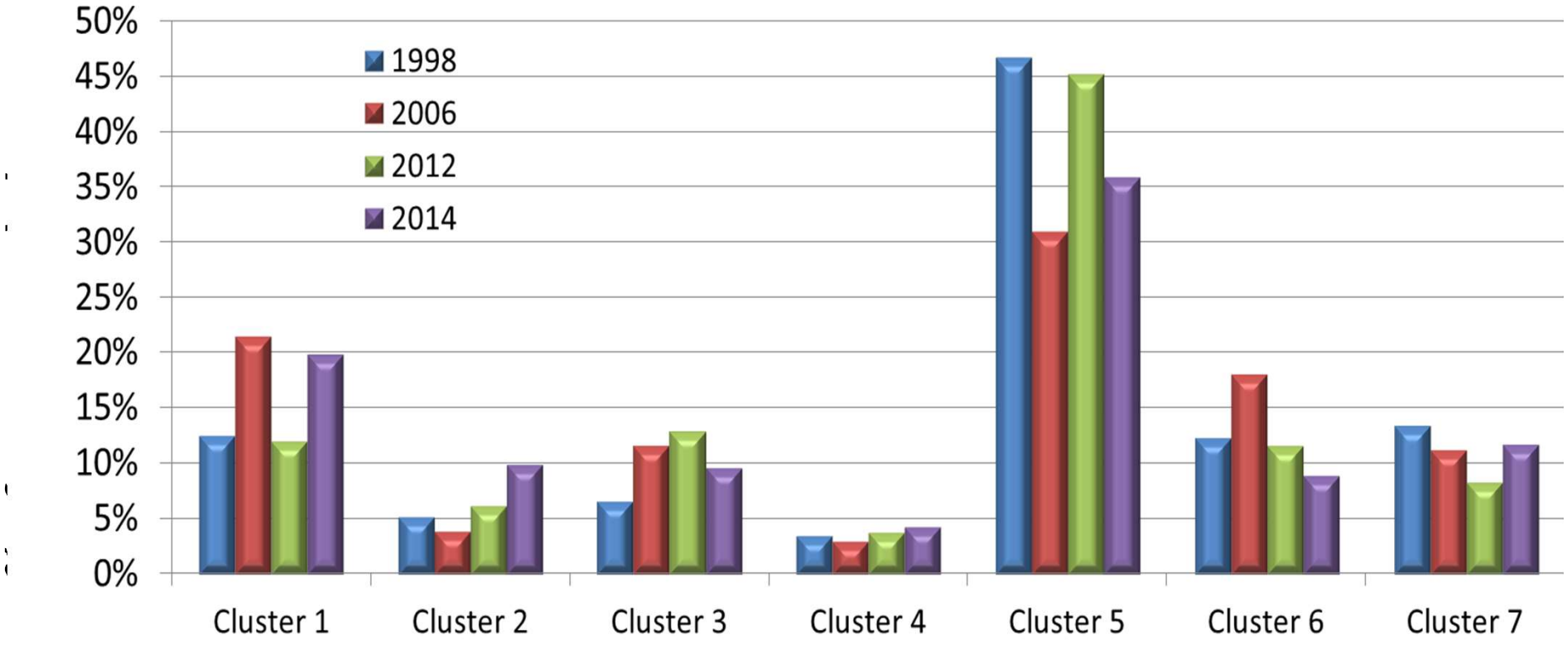
Line size = % activities jointly contributed (tie strength)

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

Network density and scope of activities



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



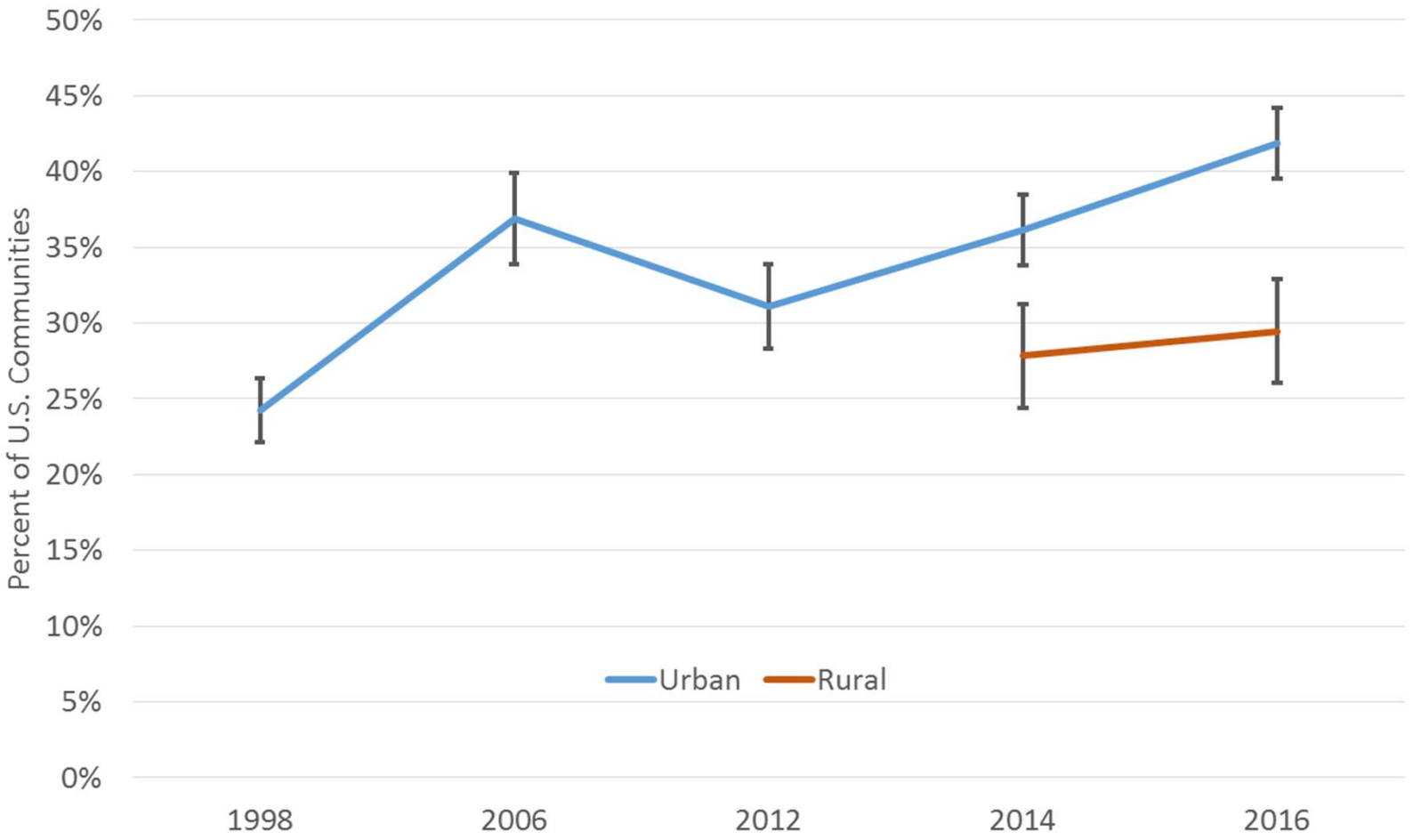
	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7
Scope	High	High	High	Mod	Mod	Low	Low
Centrality	Mod	Low	High	High	Low	High	Low
Density	High	High	Mod	Mod	Mod	Low	Mod

Comprehensive (High System Capital)

Conventional

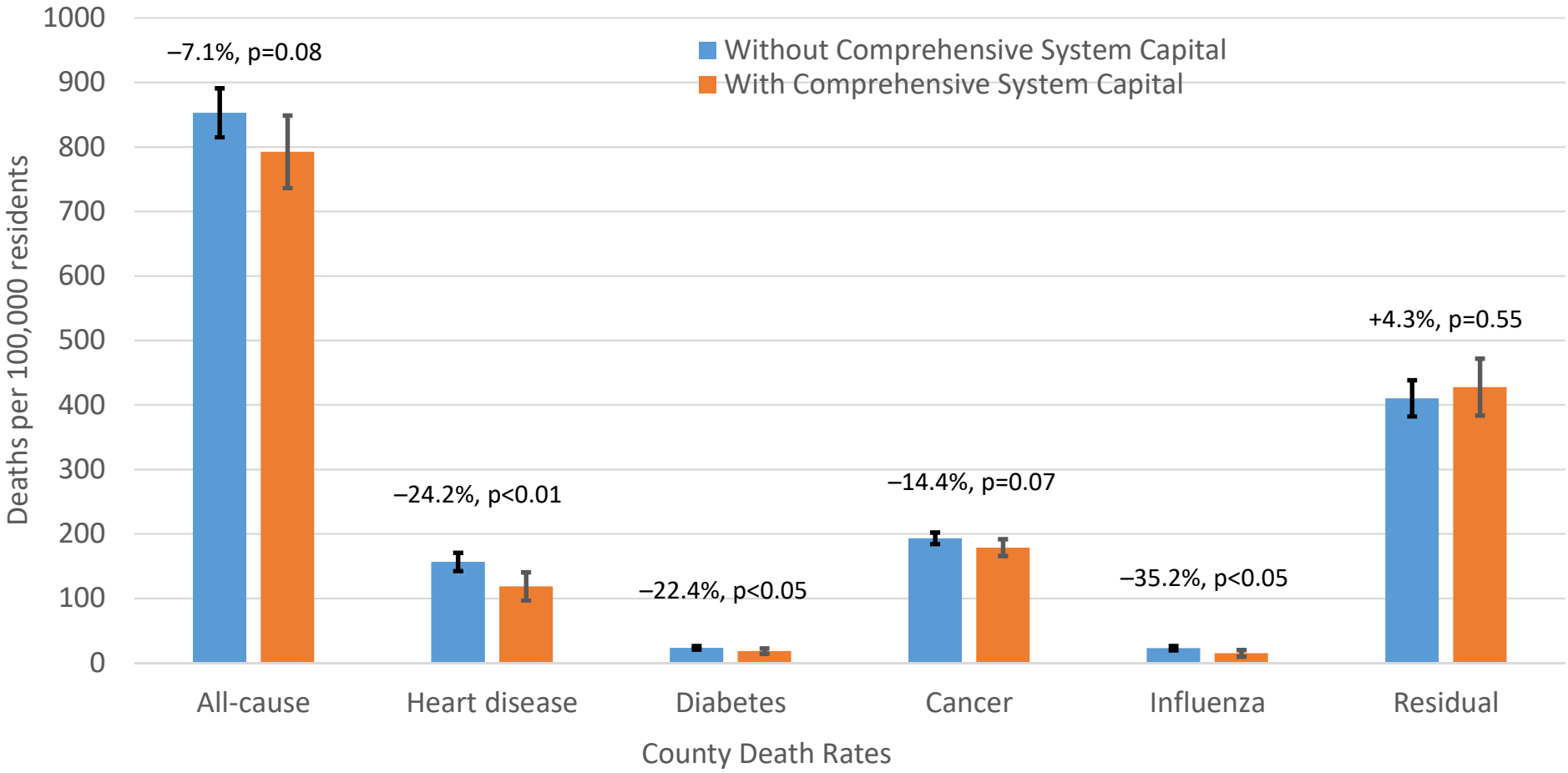
Limited

Variation and change in comprehensive delivery systems



Health effects attributable to population health work

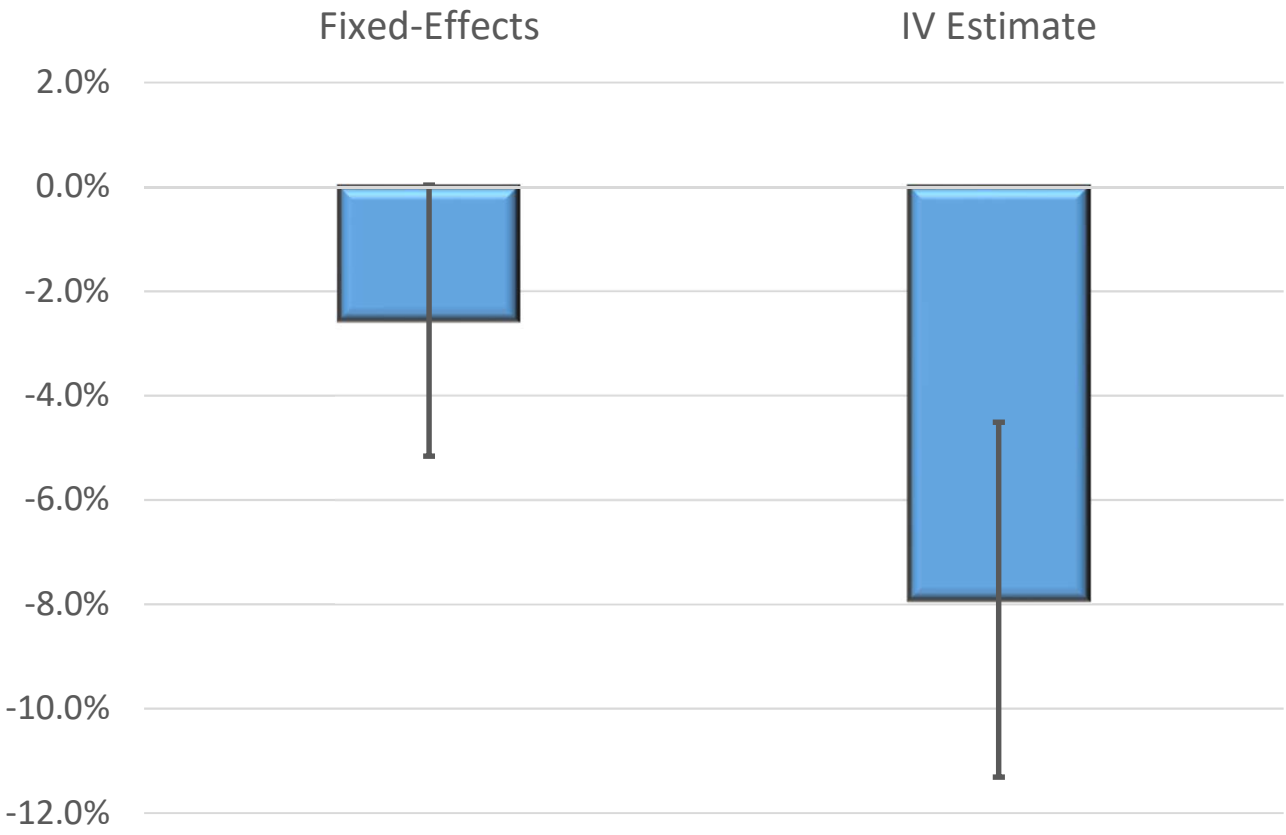
Impact of Comprehensive Systems on Mortality, 1998-2014



Fixed-effects instrumental variables estimates controlling 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 population health

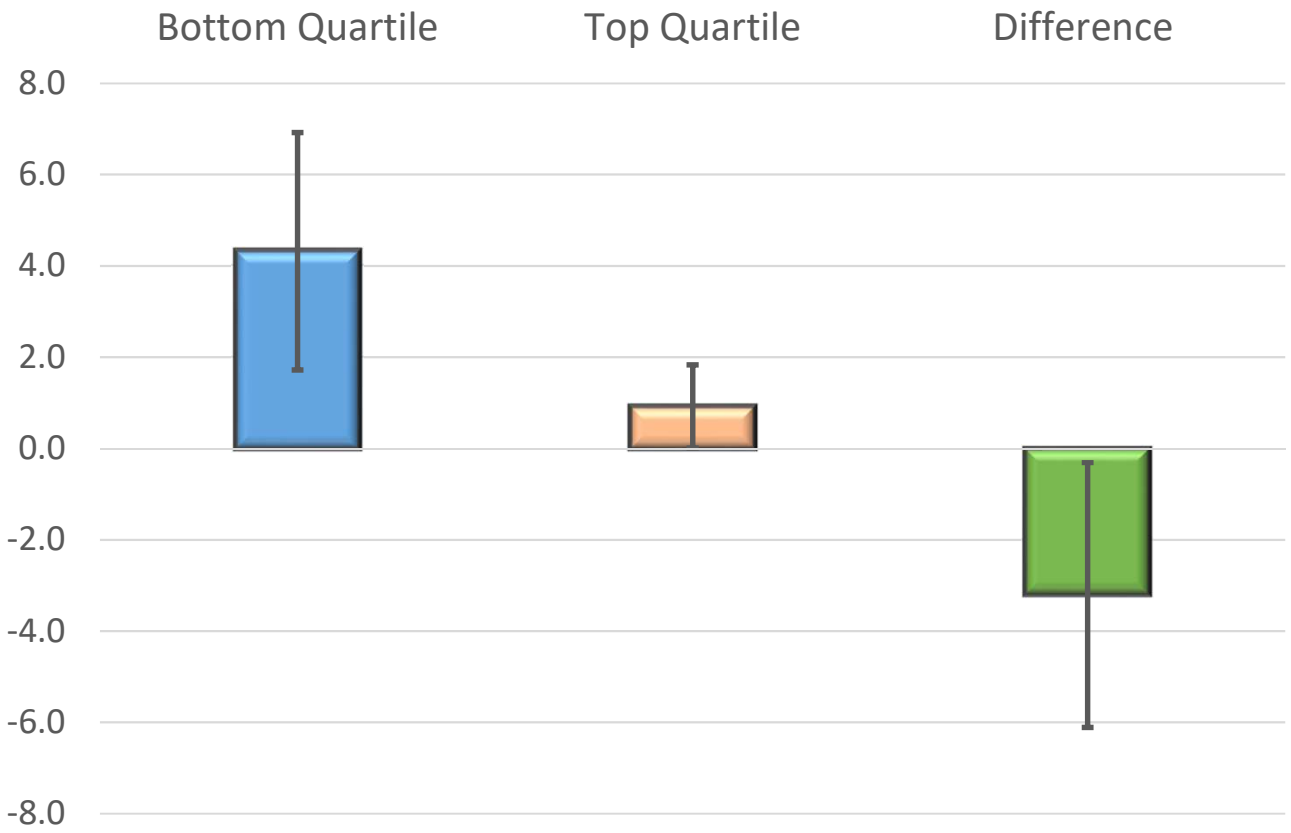
Impact of Comprehensive Systems on Medical Spending (Medicare) 1998-2014



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

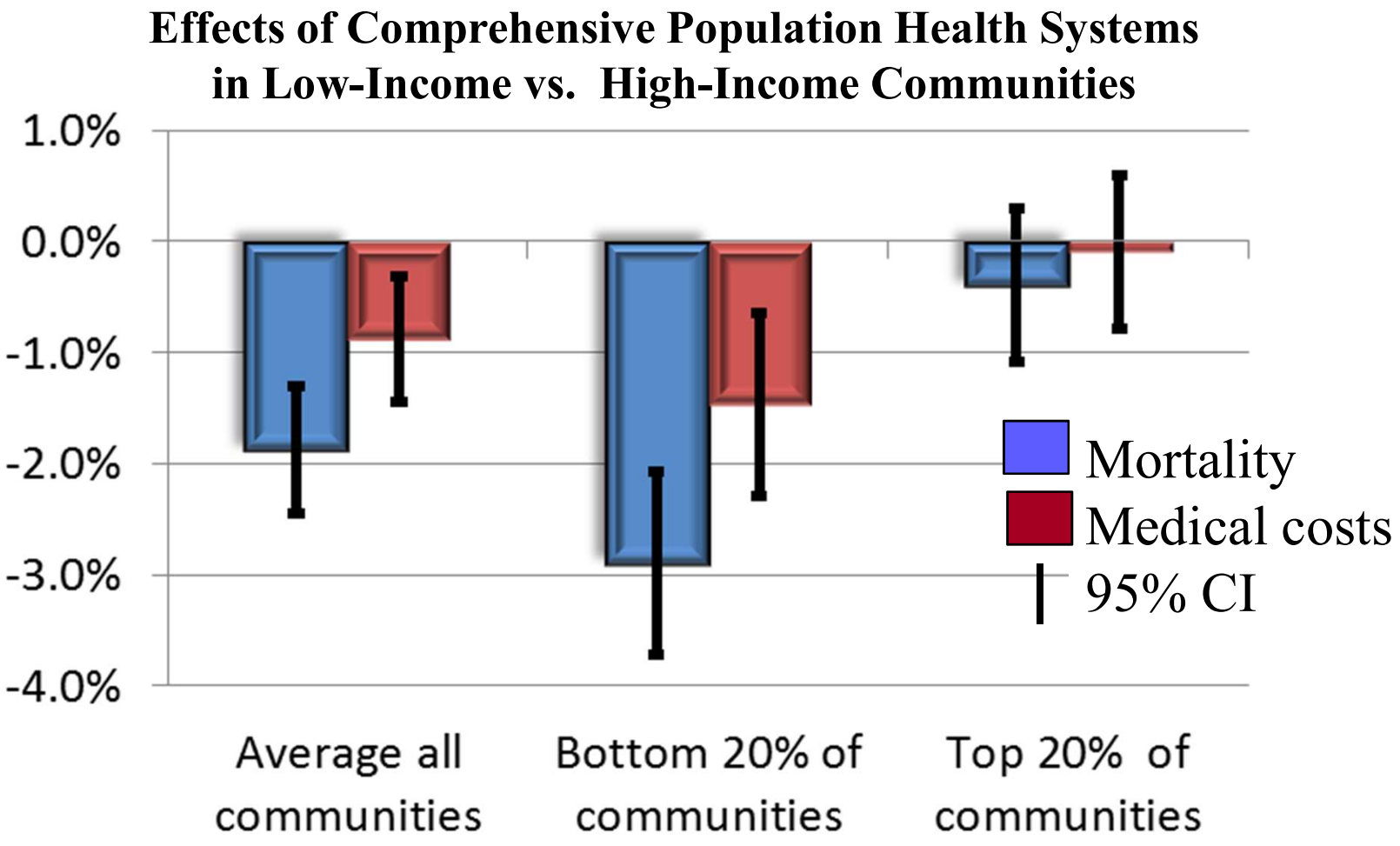
Economic effects attributable to population health

Impact of Comprehensive Systems 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

Making the case for equity: larger gains in low-resource communities



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

Getting to sustainable financing

Structural element	Function
1. Strong multi-sector governance model	Do I have a seat at the table?
2. Clear goals, activities, division of responsibility	What are we buying?
3. Clarity on implementation costs	What is the investment?
4. Credible estimates of health & economic outcomes	What are the returns?
5. Robust evaluation and monitoring systems	How will we know success?

Public & Private Willingness to Pay

Financing sources & models

- Dedicated state and local government allocations
- Medicaid administrative match/claiming
- Hospital community benefit allocations
- AHC/ACO shared savings models
- Community health trusts
- Public/private joint ventures

Some Promising Examples

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

www.visionproject.org

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

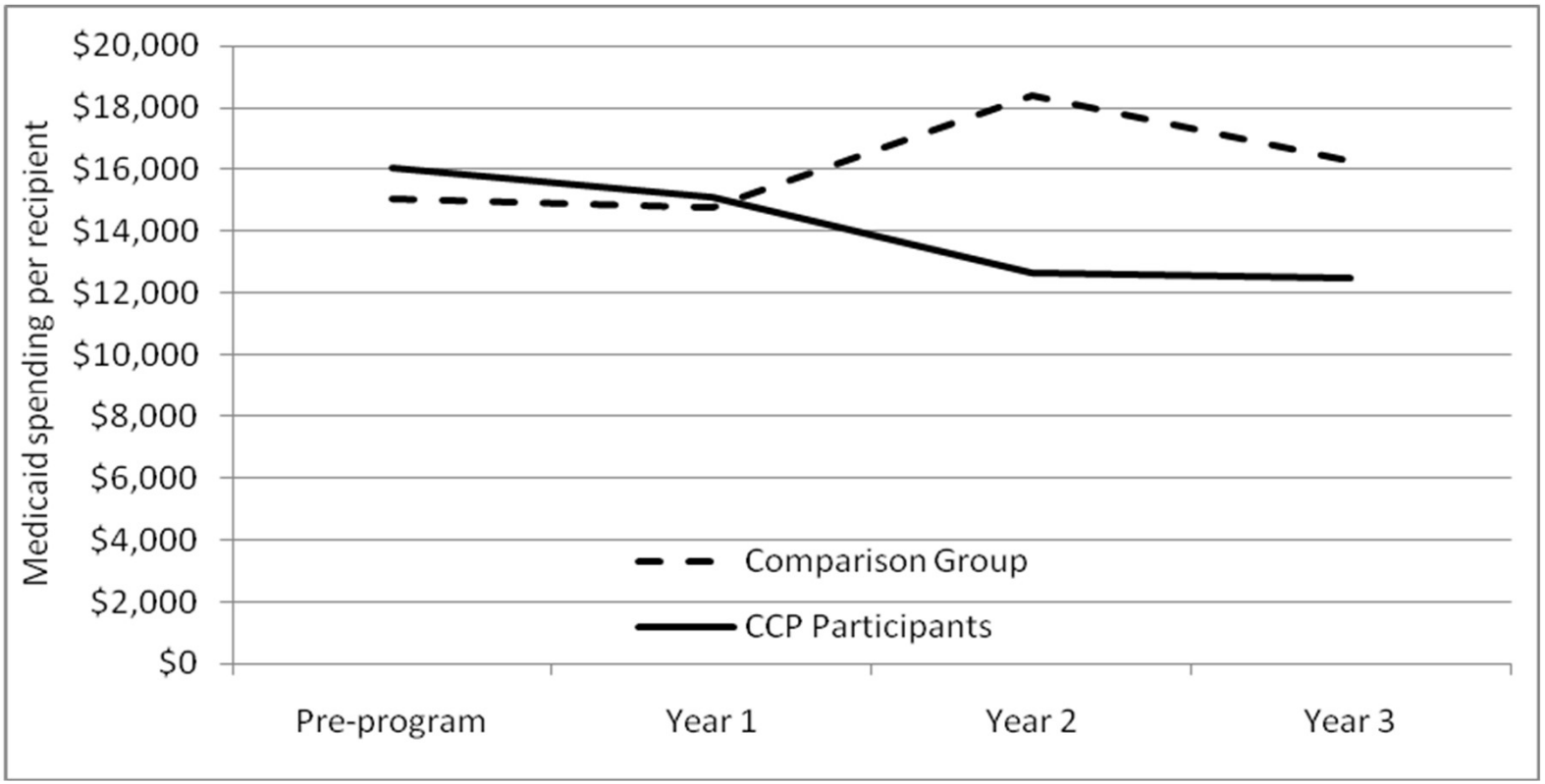
Economic impact of Arkansas CCP

By Holly C. Felix, Glen P. Mays, M. Kathryn Stewart, Naomi Cottoms, and Mary Olson

THE CARE SPAN

Medicaid Savings Resulted When Community Health Workers Matched Those With Needs To Home And Community Care

HealthAffairs



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 prevention initiatives
  - Nutrition/food environment
  - Physical activity

Promising Examples – Private Sector

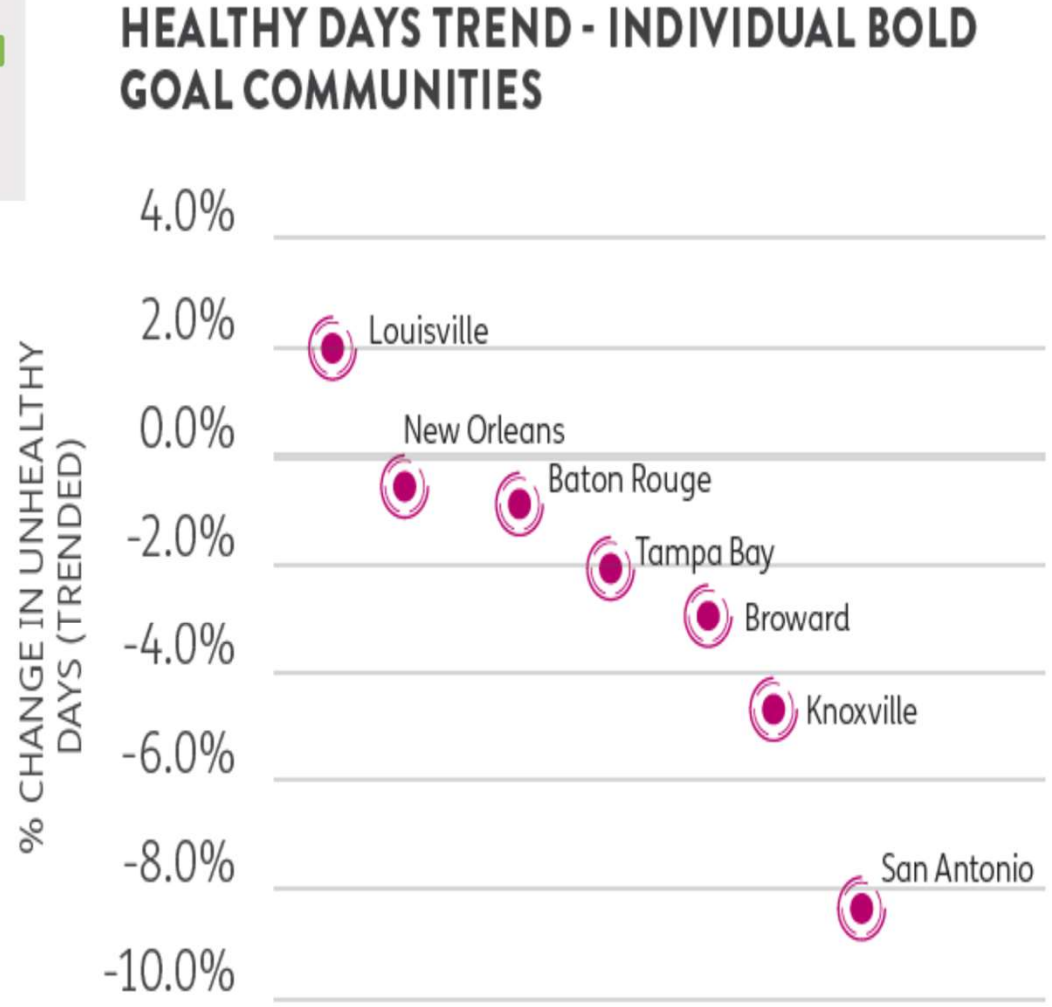
2017 PROGRESS REPORT

BOLD GOAL

#MOREHEALTHYDAYS

HUMANA.COM/BOLDGOAL

20% Healthier by 2020



Conclusions: What we know and still need to learn

- Large potential benefits of system coordination for population health
- Integration requires support
  - Infrastructure
  - Institutions
  - Incentives
- Sustainability and resiliency are not automatic

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

New research program focuses on delivery and financing system alignment

http://www.systemsforaction.org

For More Information

Systems for Action

National Coordinating Center

Systems and Services Research to Build a Culture of Health

Supported by The Robert Wood Johnson Foundation

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