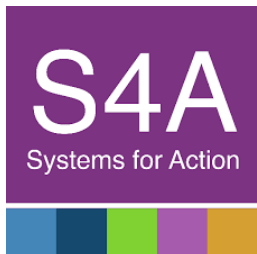# Law Enforcement and Public Health: Patterns of Interaction and Inaction Across the U.S.

Strategies to Achieve Alignment, Collaboration, and Synergy Across Delivery and Financing Systems

Research-In-Progress Webinar
June 24, 2020
12-1pm ET

S4A
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colorado school of
public health

Agenda

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Welcome: Chris Lyttle, JD

Deputy Director for Systems for Action

Presenters: Glen Mays, PhD

*Department of Health Systems,
Management & Policy
Colorado School of Public Health*

Q&A: Moderated by Glen Mays, PhD & Chris Lyttle, JD

Collaborators

- University of Colorado intramural research team: Mika Hamer, MPH; Kelsey Owsley, MPH; Deena Brosi, MPH; Taryn Quinlan, MPH.

- University of Kansas: Sharla Smith, PhD, MPH

- Virginia Commonwealth University: Michael Preston, PhD, MPH

- Preliminary findings, errors and omissions in today's talk are solely the responsibility of GP Mays

Motivation

- Persistent examples of unequal treatment, racism and violence in the criminal justice sector

- Even in communities with relatively strong health and social service sectors

- Interorganizational relationships can shape institutional cultures, policies & behaviors

- Stronger connections between law enforcement and local health and social service organizations may help to build cultures and practices that promote health, safety and social justice

S4A Studies Involving the Criminal Justice Sector

- Arizona: Aligning emergency response systems to improve services for persons with serious mental illness http://systemsforaction.org/projects/financing-and-service-delivery-integration-mental-illness-and-substance-abuse

- Michigan: Complex care response teams to prevent elder abuse http://systemsforaction.org/projects/testing-community-complex-care-response-team-improve-geriatric-public-health-outcomes

- Delaware: Multi-sector support teams imbedded in county probation offices http://systemsforaction.org/projects/implementing-culture-health-among-delawares-probation-population

- Texas: Transformative justice program to reduce recidivism among young adults with felony arrests http://systemsforaction.org/projects/addressing-health-and-social-needs-justice-involved-young-adults

- Ohio: Regional governing boards to align services for children in families affected by opioid addition http://systemsforaction.org/projects/using-regional-governing-boards-align-services-rural-children-opioid-crisis

How to build delivery & financing systems that improve population health?

- Designed to achieve large-scale health improvement: neighborhoods, communities, regions

- Improve means AND reduce variances (health equity)

- Target fundamental and multiple determinants of health

- Mobilize the collective actions of multiple sectors and stakeholders in government & private sector

    - Infrastructure

    - Information

    - Incentives

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

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

Questions of interest

- To what extent are law enforcement agencies engaged in community-based networks working to improve health

- How does this engagement vary across communities?

- - Types of organizations
  - Types of activities

- How has this engagement changed over time, e.g. in response to protests, reforms

- Does this engagement influence law enforcement behavior, e.g. incarceration, police-involved deaths

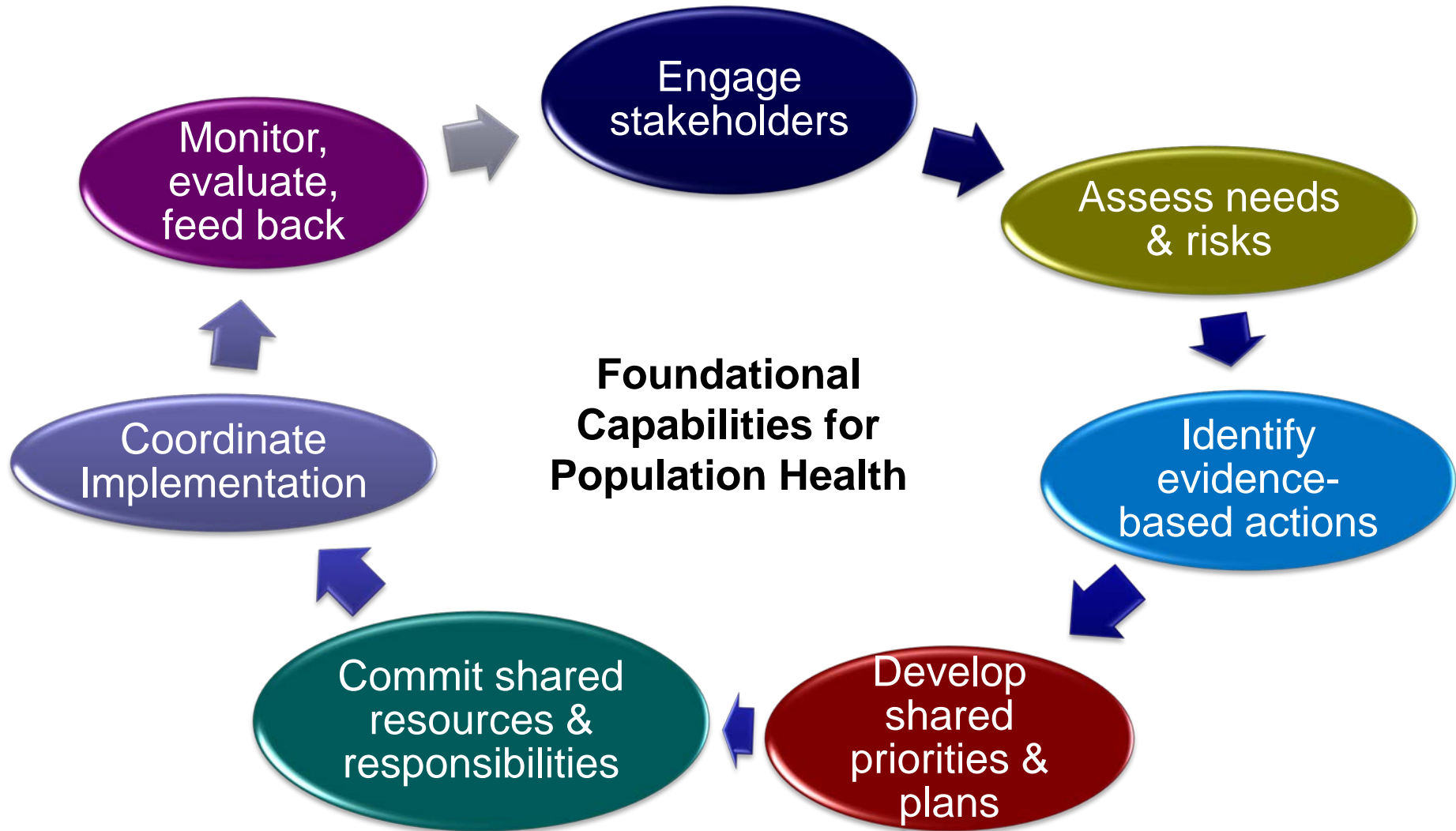# A useful lens for studying multi-sector work

National Longitudinal Survey of Public Health Systems

- Nationally representative cohort of 600 U.S. communities

- Followed over time: 1998-2018, 2020

- Local public health officials report:
  - *Scope*: availability of 20 recommended population health activities
  - *Network density*: organizations contributing to each activity
  - *Network centrality*: strongest central actor
  - *Quality*: perceived effectiveness of each activity

  Law enforcement questions added in 2018

Widely recommended activities to support multi-sector initiatives in population health

Engage stakeholders → **Assess needs & risks** → **Identify evidence-based actions** → **Develop shared priorities & plans** → **Commit shared resources & responsibilities** → **Coordinate Implementation** → **Monitor, evaluate, feed back**

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.

Motivation | **Approach** | Results | Discussion

# Data linkages expand analytic possibilities

- **Area Health Resource File**: health resources, demographics, socioeconomic status, insurance coverage

- **Association 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

- **Incarceration rates**: Vera Institute of Justice

- **Police-involved deaths**: NVDRS, Mapping Police Violence

Measuring system structure

- Two-mode networks (organization types X activities) transformed to one-mode networks with tie strength indicated by number of activities jointly produced

Organization Type/Sector	Activities							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**...20**
Local public health agency	X	X		X		X		
State public health agency		X	X		X			X
Hospitals		X	X	X			X	
Physician practices					X		X	
CHCs	X		X		X			
Insurers					X	X		X
Employers								
Social service organizations		X		X			X	
Schools			X		X	X		
…..								

Mapping delivery systems for public health
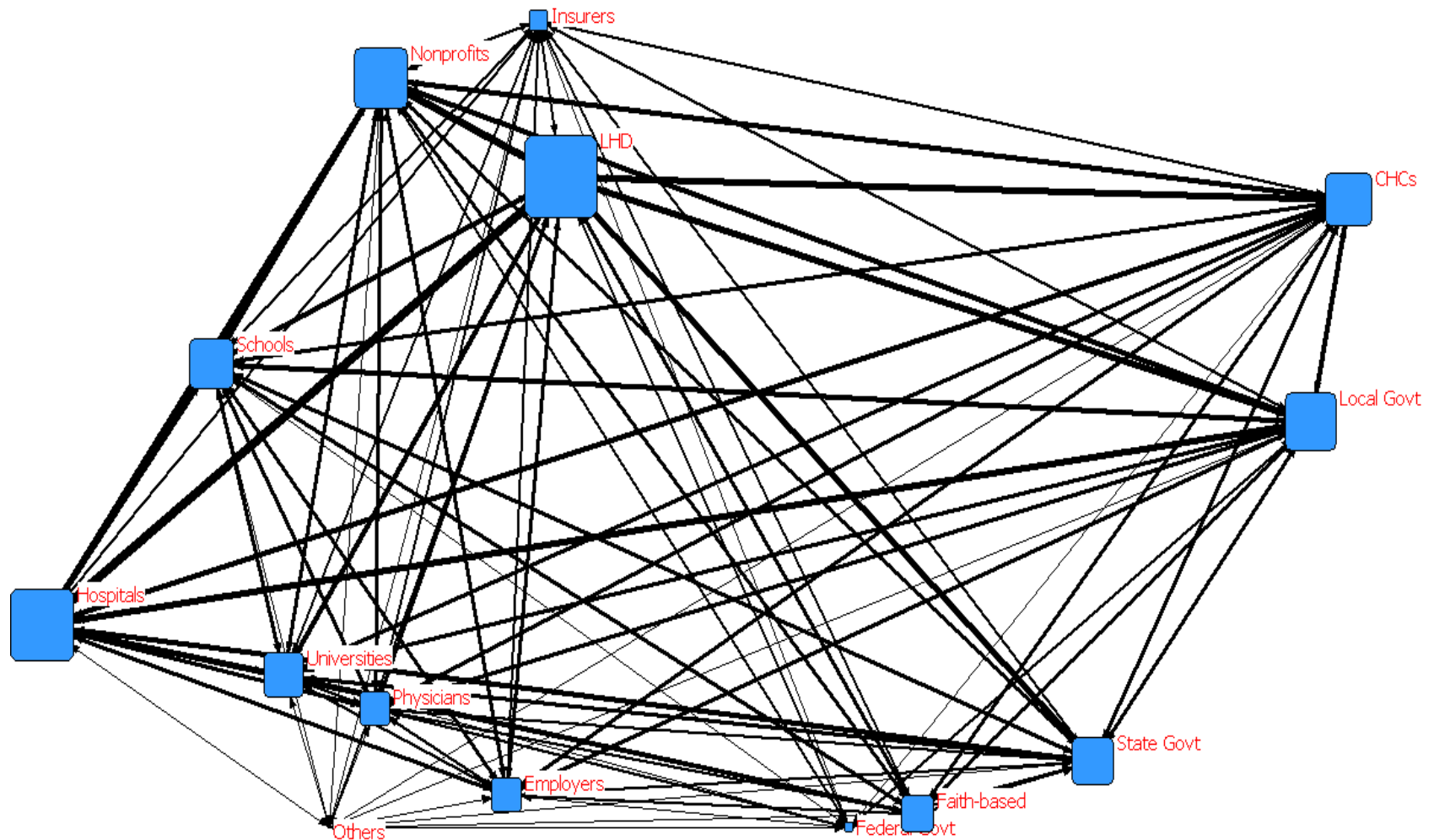
Node size = degree centrality
Line size = % activities jointly contributed (tie strength)

Mays GP et al. Understanding the organization of public health delivery systems: an empirical typology. *Milbank Q.* 2010;88(1):81–111.
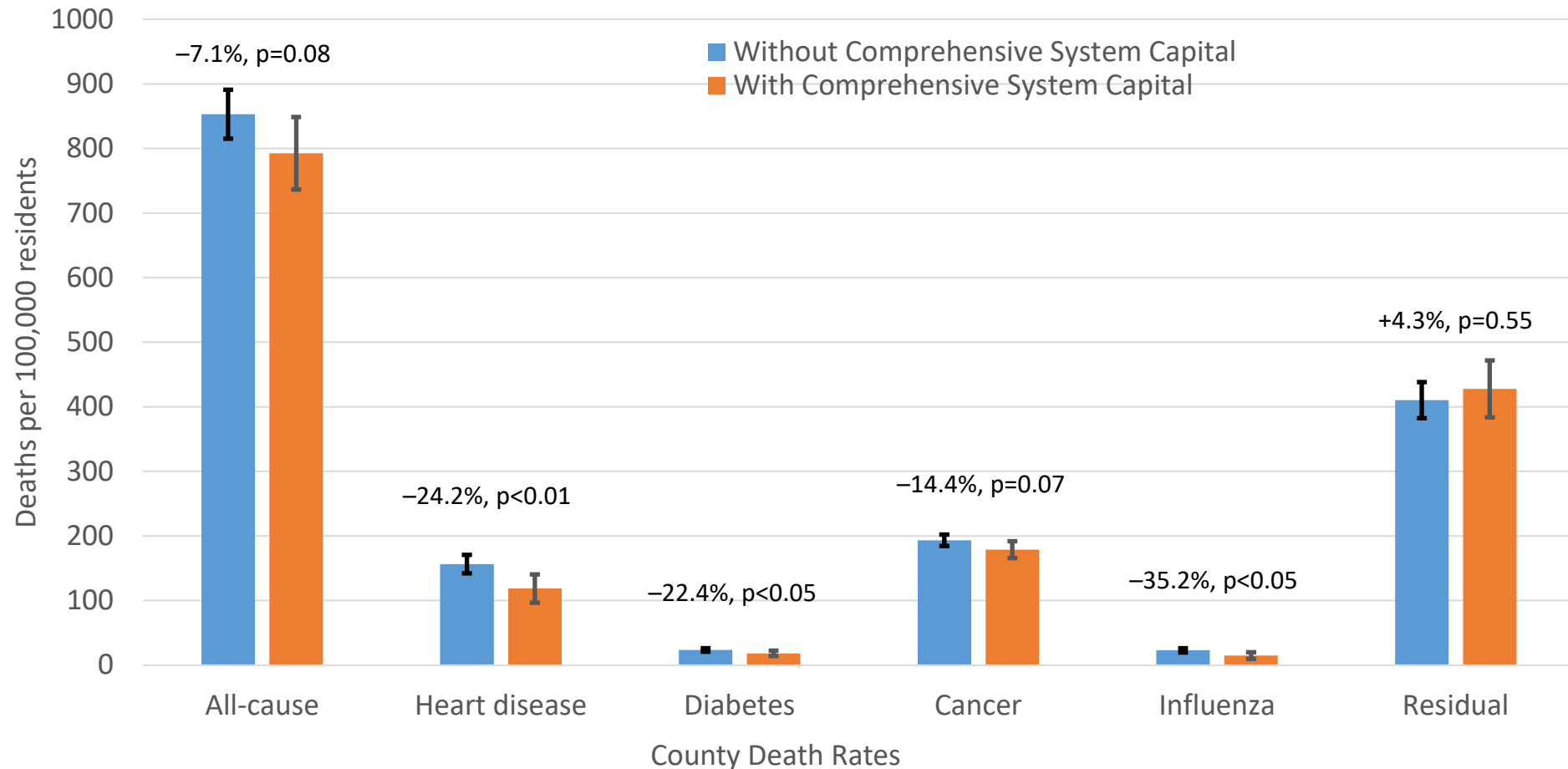
Prior research: Health effects attributable to networks
Impact of Comprehensive Systems on Mortality, 1998-2014

Fixed-effects instrumental variables estimates controlling for racial composition, unemployment, health insurance coverage, educational attainment, age composition, and state and year fixed effects.

Mays GP et al. *Health Affairs* 2016

Prior research: policy effects attributable to networks

Impact of Comprehensive Systems on Policy & Behavior
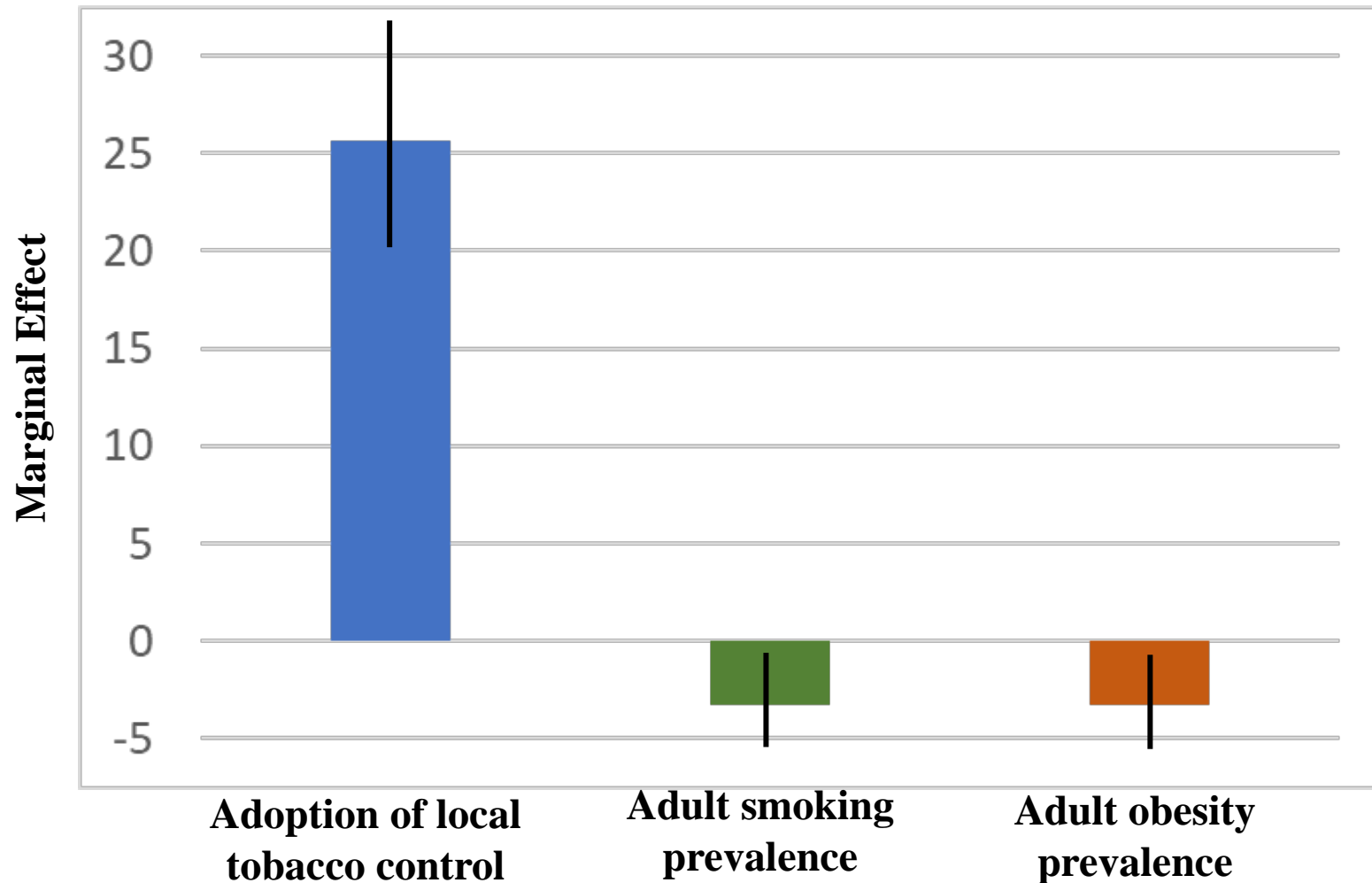
Models also control for racial composition, unemployment, health insurance coverage, educational attainment, age composition, and state and year fixed effects. Vertical lines are 95% confidence intervals
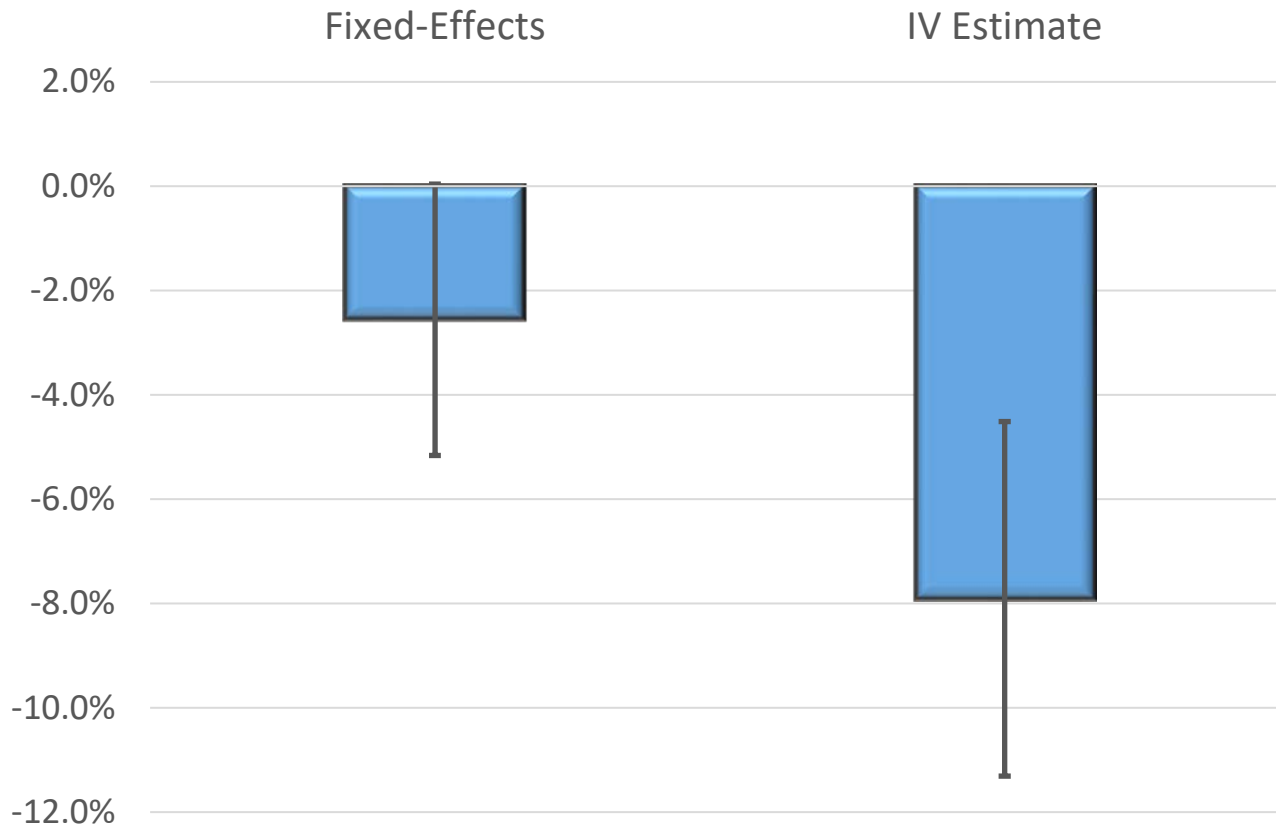
Mays GP et al. *Health Affairs* 2016

Prior research: economic effects attributable networks

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. Vertical lines are 95% confidence intervals

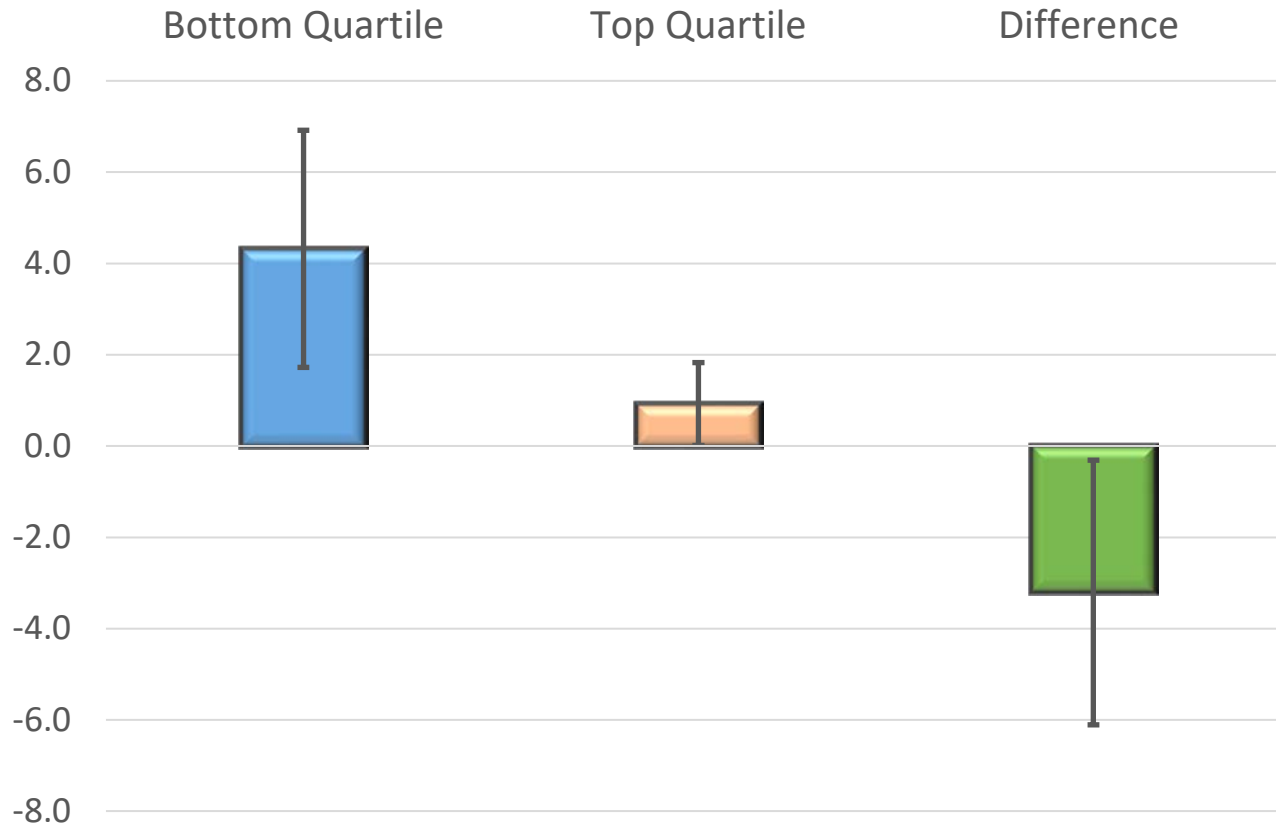Mays GP et al. *Health Services Research* 2018

Motivation   Approach   Results   Discussion

Prior research: equity effects attributable to networks
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. Vertical lines are 95% confidence intervals

Mays GP et al. *forthcoming*

Measures of Law Enforcement Network Engagement

- **Extensive margin:** % communities with law enforcement engaged in at least 1 recommended activity

- **Intensive margin:** % of activities in which law enforcement is involved

- **Network connectivity:** degree centrality of law enforcement

- **Tie strength:** % of activities jointly contributed by law enforcement and other organizations, by sector

Law Enforcement Engagement in Health Activities, 2018

| Population Health Activities	Overall	Urban	Rural	
1. Assess community health needs	17.4%	24.7%	13.6%	**
2. Survey community for behavioral risk factors	10.1%	16.4%	4.7%	**
3. Investigate adverse health events	27.0%	36.5%	22.7%	**
4. Conduct lab testing for health investigations	24.1%	31.5%	18.4%	**
5. Analyze determinants of health	9.5%	14.3%	7.1%	**
6. Analyze preventive services use	10.2%	17.5%	5.5%	**
7. Maintain communications network of health orgs	14.8%	20.6%	12.5%	**
8. Provide health information to public officials	17.2%	23.1%	15.2%	**
9. Provide health information to the public	9.7%	12.3%	8.3%	
10. Provide health information to the media	10.1%	11.8%	7.9%	
11. Prioritize community health needs	15.6%	19.7%	14.5%	
12. Implement interventions based on priorities	11.8%	15.7%	10.6%	
13. Develop community health action plan	7.2%	13.3%	4.0%	**
14. Develop community resource allocation plan	4.2%	7.5%	1.2%	**
15. Deploy resources based on community plan	10.5%	14.3%	9.2%	
16. Assess local public health agency capabilities	6.0%	8.8%	4.8%	
17. Link people to needed health and social services	5.5%	9.0%	4.0%	
18. Evaluate impact of programs on health	6.3%	9.6%	5.3%	
19. Conduct program monitoring and QI	5.3%	9.6%	3.2%	**
Intensive margin: % activities performed	12.3%	17.5%	9.6%	**
Extensive margin: % communities with 1 or more activities	43.9%	55.4%	35.8%	**
Degree centrality	5.9%	8.5%	4.2%	**

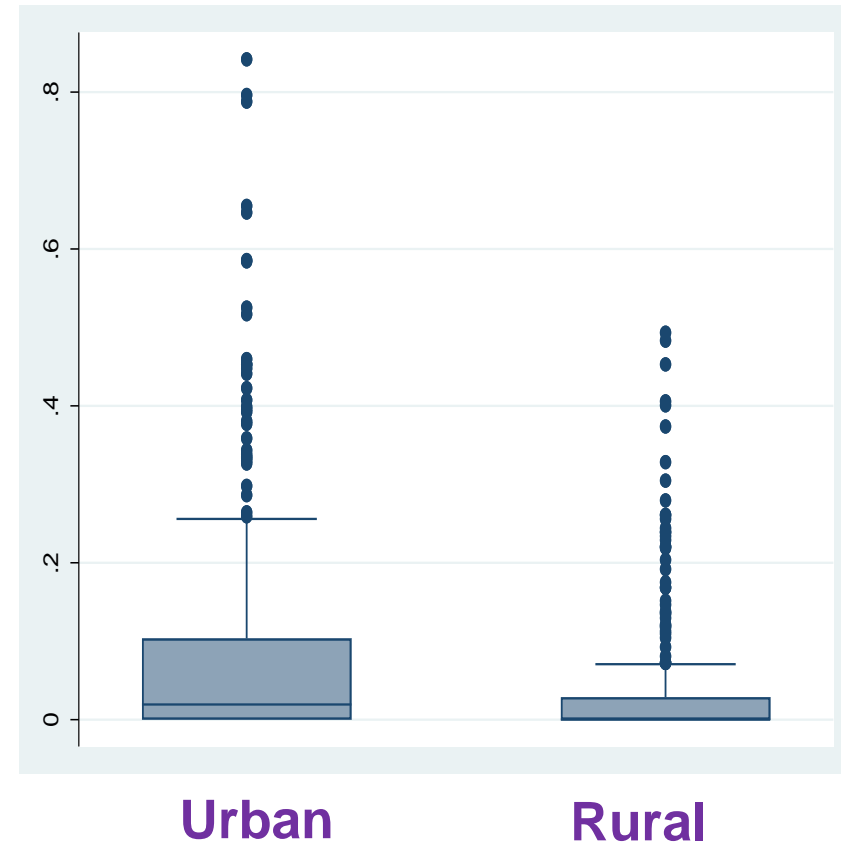Motivation → Approach → **Results** → Discussion

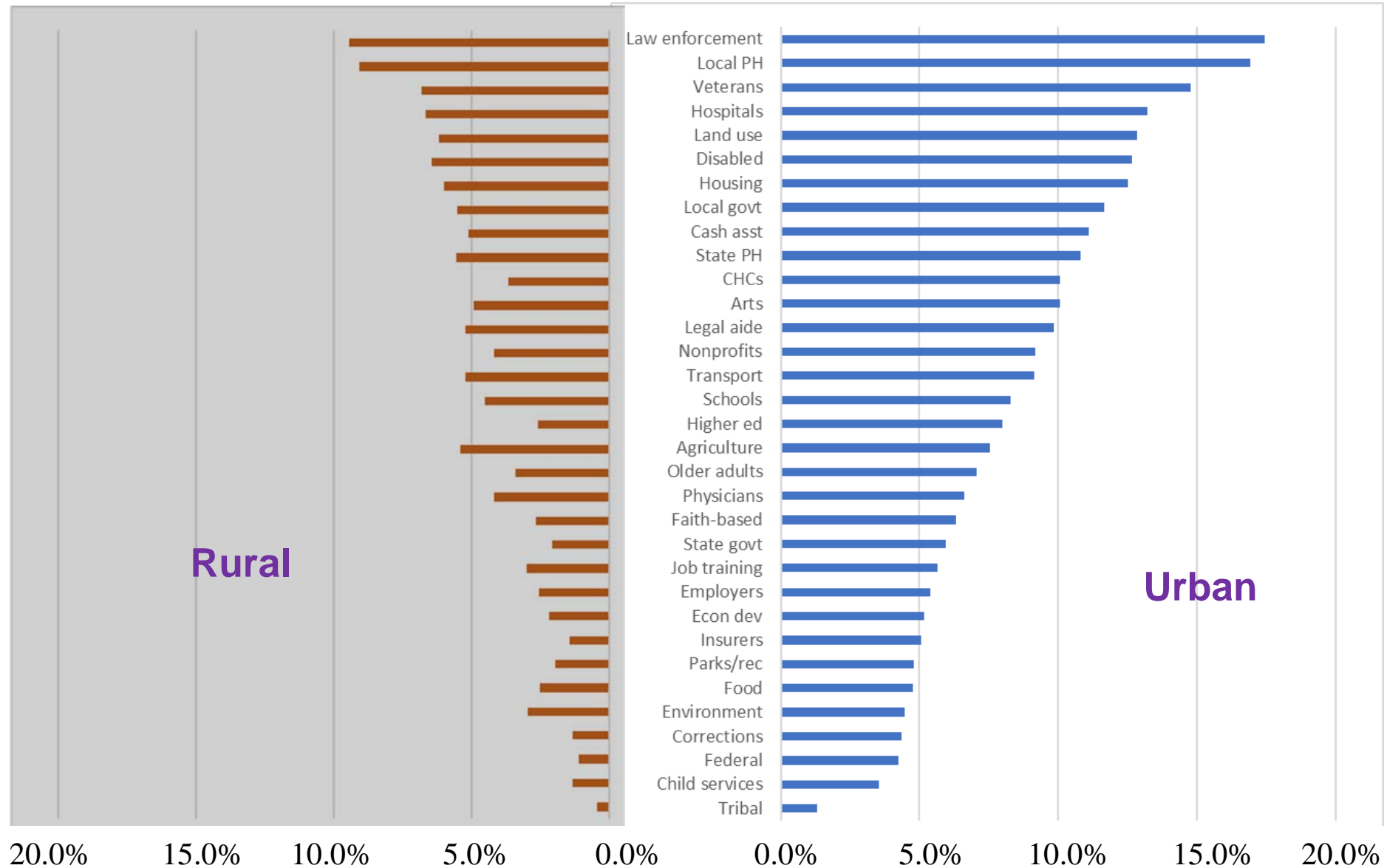# Law Enforcement Engagement in Health Activities, 2018

Percent Activities Performed (Intensive Margin)
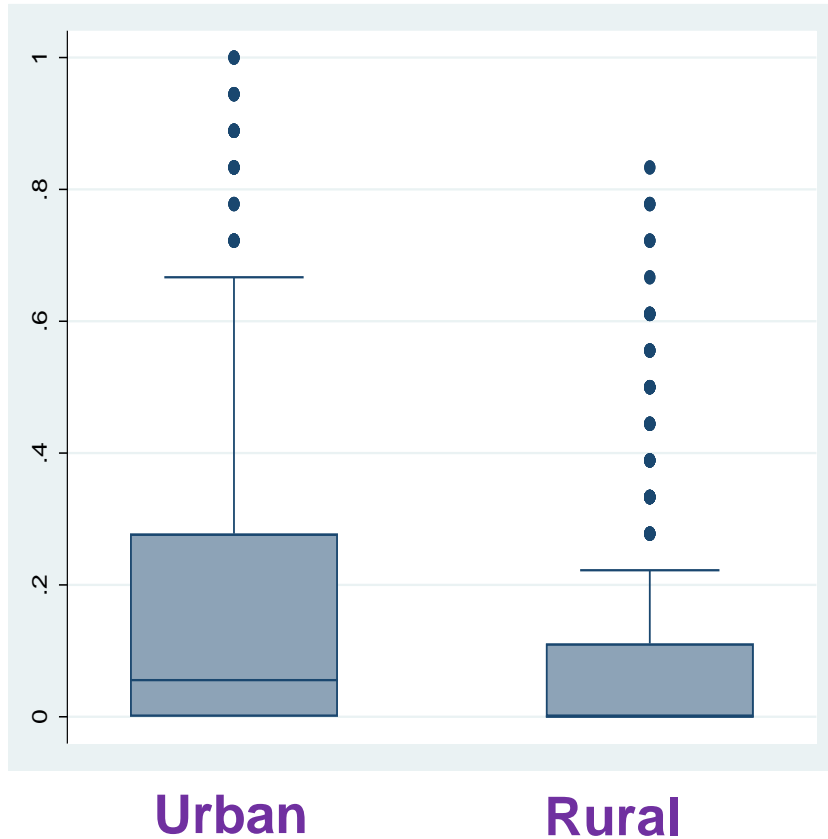
Network Connectivity (Degree Centrality)

# Law Enforcement Connectivity with Other Sectors, 2018

Preliminary lessons learned

- Wide variation in law enforcement engagement in local community health networks

- Extensive margin of engagement is moderate compared to other sectors

- Intensive margin of engagement is lower than many other sectors

- Engagement is significantly lower in rural communities

Next steps in this research

- Multivariate analysis to examine socioeconomic, demographic, and organizational correlates of variation

- Data linkage with local estimates of law enforcement events: incarceration, police-involved deaths

- Explore cross-sectional patterns & associations

- Collect 2020 data, explore patterns of change between 2018-2020

- Data linkage with information on protests, law enforcement reforms

- Explore longitudinal associations using difference-in-difference analysis

# Questions?
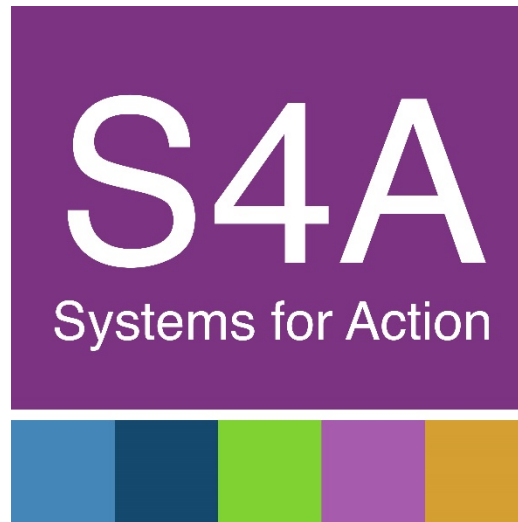
www.systemsforaction.org

🐦 [@Systems4Action](#)

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CFP

$1 million is available for research investigating the effectiveness of existing, currently operating system alignment mechanisms in mitigating social, economic and health disruptions associated with the COVID-19 pandemic. Applications must leverage ongoing or recently completed research on the system alignment mechanism of interest. Proposals due August 5, 2020.

CALL FOR PROPOSALS INFORMATIONAL WEBINAR

Monday, July 6
12pm ET

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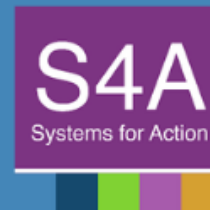
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Upcoming Webinars

S4A
Systems for Action

July 8 | 12 pm ET

[**Aligning Health and Social Systems to Expand Evidence-Based Home-Visiting**](#)

Gregory Tung, PhD, Mandy Allison, MD and Venice Williams, PhD

University of Colorado Denver

July 22 | 12 pm ET

[**Transit and Treatment: Effectiveness of Transit System to Improve Substance Abuse and Mental Health in Connecticut**](#)

Jeffrey P. Cohen, PhD and Carla J. Rash, PhD

University of Connecticut

Acknowledgements