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

colorado school of public health

Humana's Bold Goal: A Health Plan-Sponsored Population Health Initiative to Address Social Determinants of Health

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

Research-in-Progress Webinar
September 15, 2021
12-1pm ET

Agenda

Welcome: Glen Mays, PhD
Director, Systems for Action

Presenters: Glen Mays, PhD | Jessica Dobbins, DrPH | Stephanie Franklin, MPS
Systems for Action | Humana, Inc.

Q&A: Moderated by Glen Mays, PhD

Glen Mays, PhD

S4A
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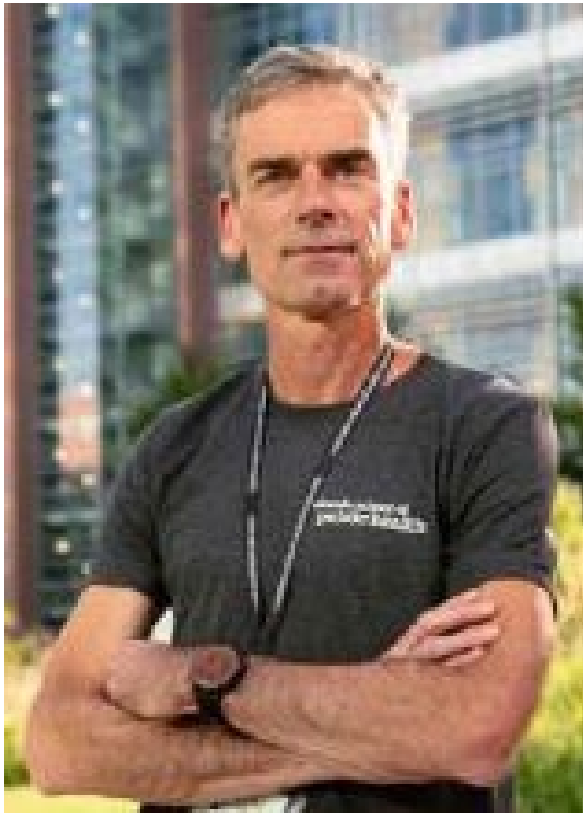
Dr. Glen Mays is the Director of the Systems for Action research program. He is the chair and a professor in the Department of Health Systems, Management & Policy in the Colorado School of Public Health at CU Anschutz. Dr. Mays created and maintains the National Longitudinal Survey of Public Health Systems (NALSYS) that has followed a nationally-representative cohort of U.S. communities since 1998 to examine inter-organizational and inter-governmental approaches to public health delivery and financing. In the area of preparedness, Dr. Mays directs the National Program Office for the National Health Security Preparedness Index (NHSPI), created by the U.S. Centers for Disease Control and Prevention and supported by the Robert Wood Johnson Foundation. The Index identifies strengths as well as gaps in the protections needed to keep people safe and healthy in the face of large-scale public health threats, and tracks how these protections vary across the United States.



Jessica Dobbins, DrPH

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Dr. Jessica Dobbins focuses on the intersection and integration of public health and primary care. She completed her DrPH at the University of Kentucky where she studied the patient-centered medical home model. Joining Humana in 2015, her work has included various community programs, payment models, and health outcomes research. **Dr. Dobbins is currently an Associate Director within Humana's Office of Health Affairs and Advocacy on the Strategic Relationships Team, which facilitates multi-sector partnerships in support of population health**. Dr. Dobbins also holds adjunct faculty positions at the University of Louisville, School of Public Health and Information Sciences, and the University of Houston, College of Medicine.

Stephanie Franklin, MPS

Stephanie Franklin has a Master of Professional Studies in Political Management from The George Washington University and a B.A. from Centre College. **She is a Population Health Strategy Lead supporting Humana's Bold Goal to help improve the health of the communities it serves by making it easier for people to achieve their best health**. As a member of the Bold Goal Insights Team, she led the strategy and execution of an unprecedented survey of health-related social needs among Medicare Advantage and Medicaid beneficiaries. This work has enabled the development of new predictive models and a social risk index to advance Humana's whole health model of care, as well as a number of publications on HRSNs and health outcomes.

Angela Hagan, PhD

Angela Hagan, an Illinois native, holds a B.A. in economics from the University of Illinois at Urbana-Champaign. She claims Louisville (Humana's headquarters) as her adopted hometown after earning both her Master of Public Administration (public policy focus) and Ph.D. in Urban and Public Affairs from the University of Louisville. She joined Humana in 2014. **As Associate Director in Humana's Office of Population Health "Bold Goal" team, Angela leads population health insights with a focus on health-related quality of life and social determinants of health/health-related social needs**. Her team focuses on population surveillance and integration into clinical operating models and interventions, SDOH analytics around clinical trend drivers and quality measures, research catalog and agenda, and the public policy environment for SDOH. Previous work at Humana included leading member clinical engagement strategies in consultation with Stars and Clinical Best Practices/Trend teams.

Humana's Bold Goal: A Health Plan-Sponsored Population Health Initiative to Address Social Determinants of Health

Glen P. Mays, PhD, MPH; Stephanie Franklin, MPS; Jessica Dobbins, DrPH, MA; Andrew Renda, MD, MPH; Angela Hagan, PhD, MPA; Courtney Brown, PharmD; Todd Prewitt, MD; Teresa M. Waters, PhD; Lawrence Prybil, PhD

Humana.

UK UNIVERSITY OF KENTUCKY

Conflict of Interest Statement

This study was funded by Humana Inc. and the Robert Wood Johnson Foundation (RWJF). Authors Brown, Dobbins, Franklin, Hagan, Renda and Prewitt are employed by Humana Inc. Author Mays is affiliated with RWJF.

Objectives - What do we want to share today?

Multi-sector Partnerships.

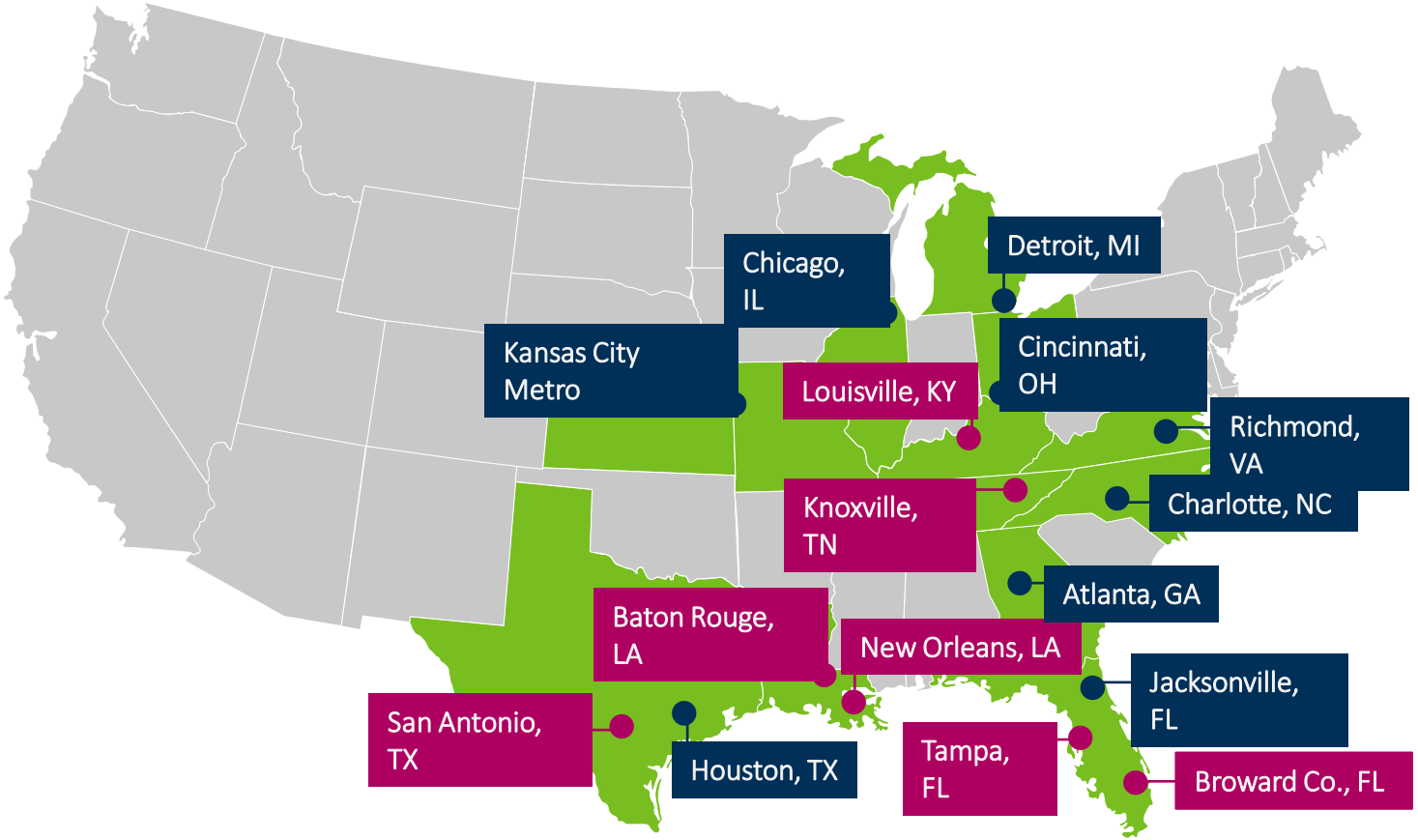
National Longitudinal Survey of Public Health Systems Data and Analysis.

Implications and Next Steps.

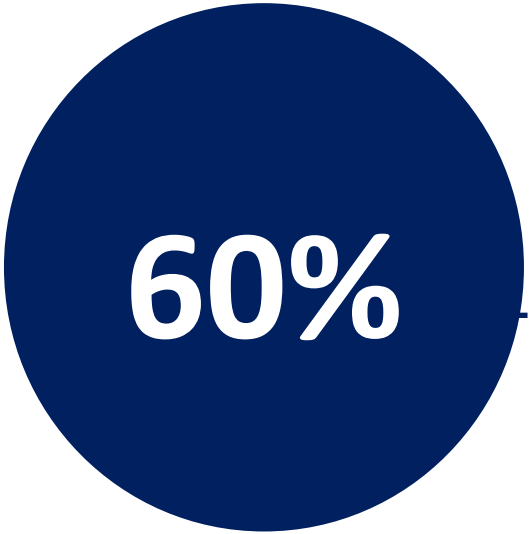
Humana set a **BOLD GOAL**

To improve the health of the communities we serve 20% by 2020 and beyond

Humana's Bold Goal Markets



Social determinants of health (SDOH) directly impact overall health

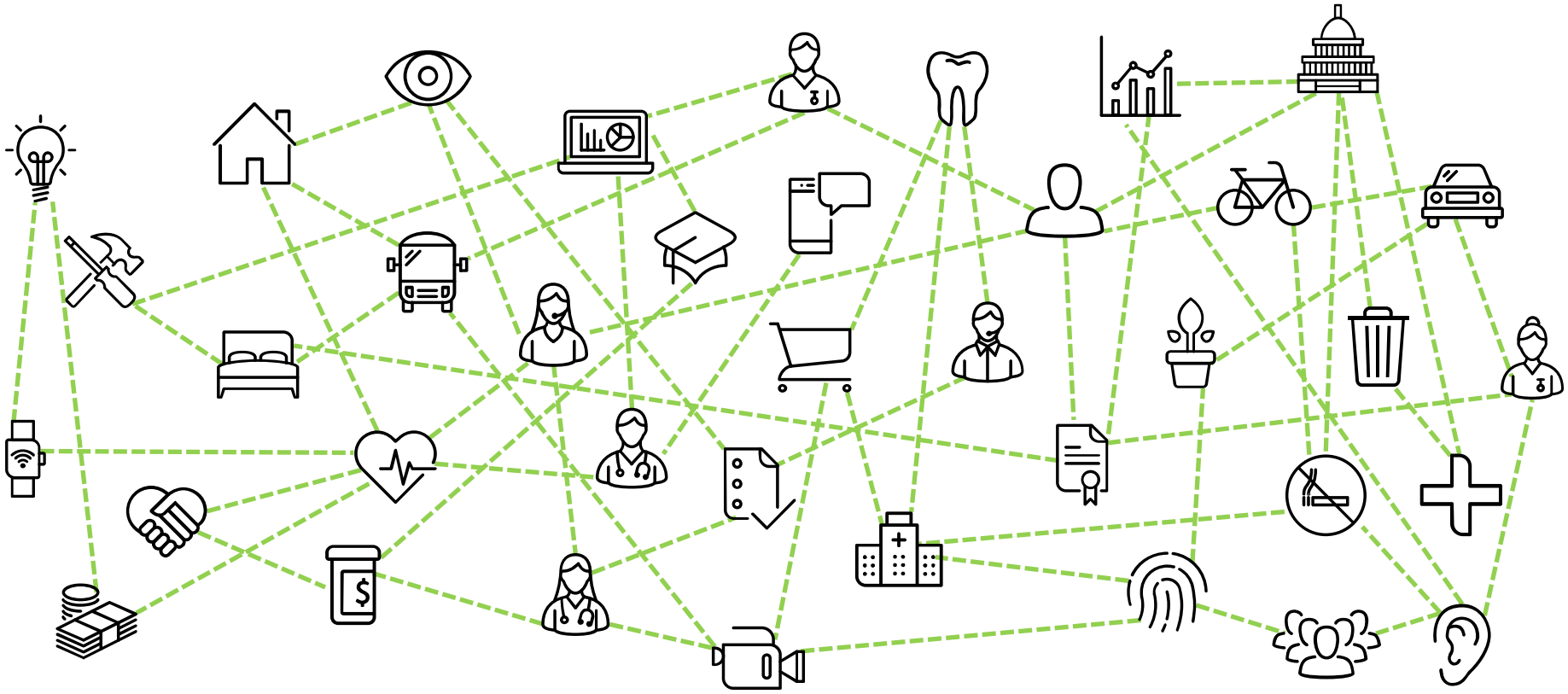


of what creates health has to do with the interplay between our **socio-economic** and **community environments** and **lifestyle behaviors**.*

*https://about.kaiserpermanente.org/community-health/news/making-a-down-payment-on-health-kaiser-permanente-invests-in-cre

Social determinants of health are the conditions in the environments in which people live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.

Social Determinants of Health



Multi-sector partnerships drive public health activities to improve population health.

Research Design & Methods

- Longitudinal cohort of 360 U.S. communities followed for up to 20 years (1998-2018)
- Measure structure of community networks supporting population health activities
- 7 Bold Goal communities followed before (2012, 2014) & after (2016, 2018) implementation
- Construct **synthetic control group** for each BG community using remaining 353 communities
- Difference-in-Difference GLM model used to estimate effects of BG on network structure

$$E(Network_{ijt}) = \beta_0 + \beta_1 BG_{ij} + + \beta_2 POST_t + \beta_3 BG_{ij} * POST_t + \beta_4 Community_{ijt} + State_j + \varepsilon_{ijt}$$

- **Surrogate Index method + instrumental variables** used to project long-term effects of network changes on preventable mortality and medical spending using full panel data (1998-2018)[1]

$$E(Network_{ijt}) = f\,(Governance, Agency, Community)_{ijt} + State_j + Year_t + \varepsilon_{ijt}$$

$$E(Outcomes_{ijt}) = f\,(\hat{Network}+resid, Agency, Community)_{ijt} + State_j + Year_t + \varepsilon_{ijt}$$

All models control for type of jurisdiction, population size and density, metropolitan area designation, income per capita, unemployment, poverty rate, racial composition, age distribution, physician and hospital availability, insurance coverage, and state and year fixed effects.

1. Mays GP, Mamaril CB, Timsina LR. Preventable Death rates fell where communities expanded population health activities through multisector networks. *Health Affairs*. 2016;35(11):2005-2013.

Data Sources

National Longitudinal Survey of Public Health Systems

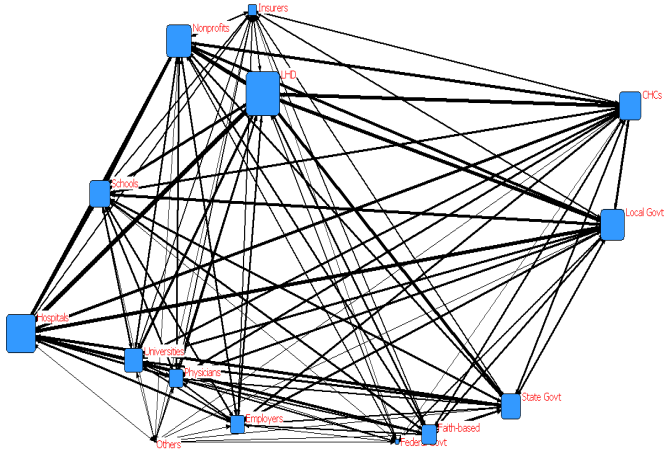
- Nationally representative cohort of 600 U.S. communities (360 metro)
- Followed over time: 1998-2018
- Local public health officials report:
  - ***Scope***: availability of 20 recommended population health activities[1]
  - ***Network density***: organizations contributing to each activity
  - ***Network centrality***: strongest central actor
  - ***Quality***: perceived effectiveness of each activity
- Linked with secondary data sources on demographic, community & market characteristics (Area Health Resources File, U.S. Census data)

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

Measuring Community Network 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		
.....								

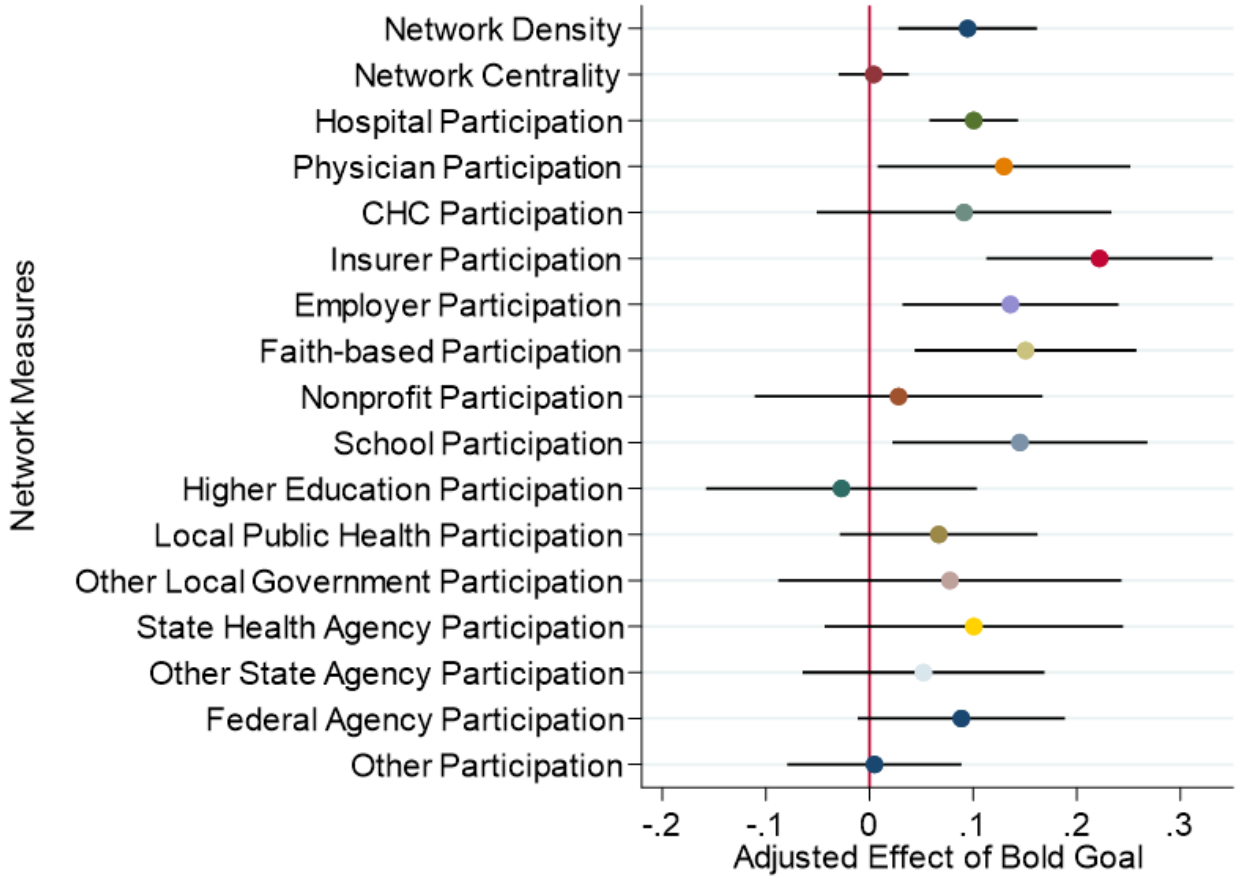


Results: Intervention & Synthetic Comparison Group

Variable	Bold Goal Mean	Bold Goal St Dev.	Comparison Group Mean	Comparison Group St Dev.
Population size (100,000s)	6.8	3.7	6.7	6.1
Population per square mile (1000s)	1.2	0.5	1.2	1.9
Percent without health insurance	13.0	2.5	13.4	5.1
Percent nonwhite race	29.8	14.5	37.5	18.3
Percent below poverty level	17.0	1.4	15.0	5.4
Percent unemployed	5.9	0.6	6.2	1.7
Percent age 65 and older	13.6	1.8	14.3	4.1
Percent adults with college education	30.6	4.5	31.3	10.9
Number of hospitals	11.3	4.4	10.3	13.2
Physicians per 100,000 population	376.6	92.8	298.2	206.9
Hospital beds per 100,000 population	430.7	283.4	314.3	195.9
Number of communities	6.0		280.0	

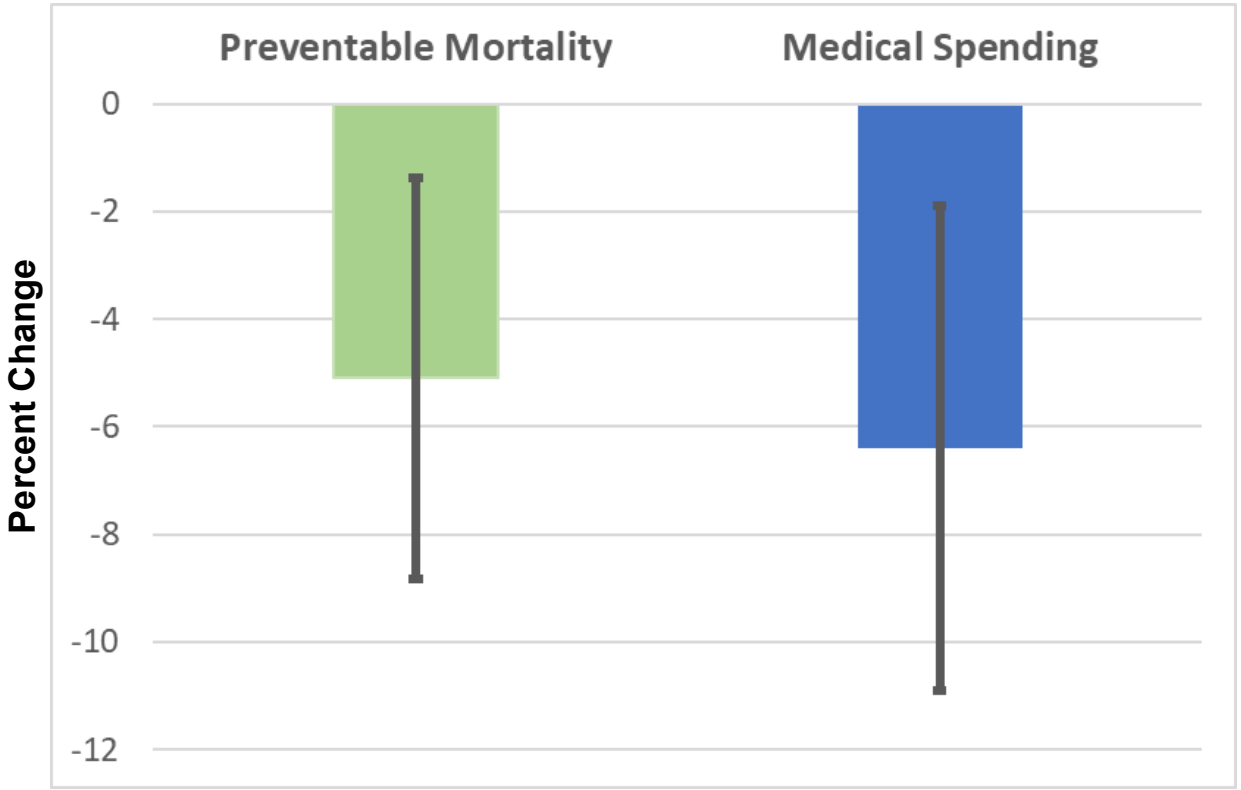
Differences in means not statistically significant at $p<0.10$. Parallel trends not rejected at $p<0.10$

Results: Difference-in-Difference Estimates of BG Impact on Community Network Structures



Horizonal lines = 95% confidence intervals

Results: Surrogate Index Projections of 10-Year Effects



1. Mays GP, Mamaril CB, Timsina LR. Preventable Death rates fell where communities expanded population health activities through multisector networks. *Health Affairs*. 2016;35(11):2005-2013.

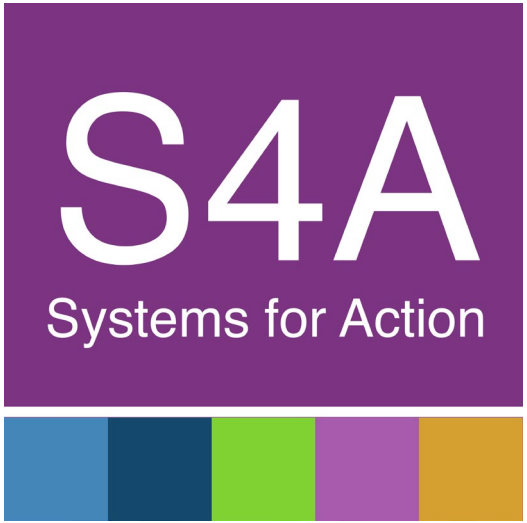
Summary:

- We saw increased network connectivity in Bold Goal Communities, driven by increases in network participation rates among employers, hospitals, health insurers, physicians, schools and faith based organizations.

Implications and Next Steps:

- Sustainability
- Scale
- COVID-19 context
- Equity diversity and inclusion

Questions?



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Upcoming Webinars

September 29th | 12 pm ET

With Ashley Humienny, MBA of Benefits Data Trust &
Suzanne Kinsky, PhD of UPMC Center for High-Value Health Care

Register: https://ucdenver.zoom.us/webinar/register/WN_Vnhx07PjTqCPaVSSCQwQ-Q

Acknowledgements

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Robert Wood Johnson Foundation

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