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

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

Multi-sector Alliances in the Post-Affordable Care Act Era: Key Patterns and Trends

Research In Progress Webinar
Wednesday, February 13, 2019
12:00-1:00 pm ET/ 9:00 am-10:00 am PT

College of Public Health
Center for Public Health Systems and Services Research

Funded by the Robert Wood Johnson Foundation

Agenda

Welcome: **Shana S. Moore, PhD, MPA**
Director of Dissemination and Research Development, RWJF Systems for Action National Coordinating Center
University of Kentucky College of Public Health

Presenters: **CB Mamaril, PhD, MS**
Research Faculty, RWJF Systems for Action National Coordinating Center
University of Kentucky College of Public Health

Commentary: **Ani Turner, MA**
Co-Director, Sustainable Health Spending Strategies
Center for Value in Health Care
Altarum

Q & A: Moderated by Dr. Shana Moore.

Presenter

Glen Mays, PhD, MPH

Director
RWJF Systems for Action National Coordinating Center
University of Kentucky College of Public Health

Presenter

CB Mamaril, PhD

Research Faculty
RWJF Systems for Action National Coordinating Center
University of Kentucky College of Public Health

Commentary Speaker

Ani Turner, MA

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C.B. Mamaril, PhD
Glen Mays, PhD, MPH

S4A Research-in-Progress Webinar
13 February 2019

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Acknowledgement

- Robert Wood Johnson Foundation
- Altarum
  - Research to Advance Health Reform
- S4A Intramural Research Team:
  - Nurlan Kussainov
  - Dominique Zephyr
  - Shana Moore

Background

- Affordable Care Act (ACA) and related federal and state reforms have ushered in an era of new resources and incentives for hospitals, insurers and other organizations to engage in community-wide efforts to improve health
- Relatively little is known about how healthcare and community organizations have responded to these policy changes and their interaction with coverage expansions.

Study Aims

1. **Measure changes in multi-sector alliances and estimate changes in public health spending that support population health activities in the post-ACA era.**
2. Identify ACA-related policies associated with changes in alliances and spending across states and communities.
3. Explore how coverage expansions may interact with other ACA-related policies in shaping multi-sector alliances and contributions to population health activities.

Data to measure changes in population health networks

National Longitudinal Survey of Public Health Systems (NALSYS)

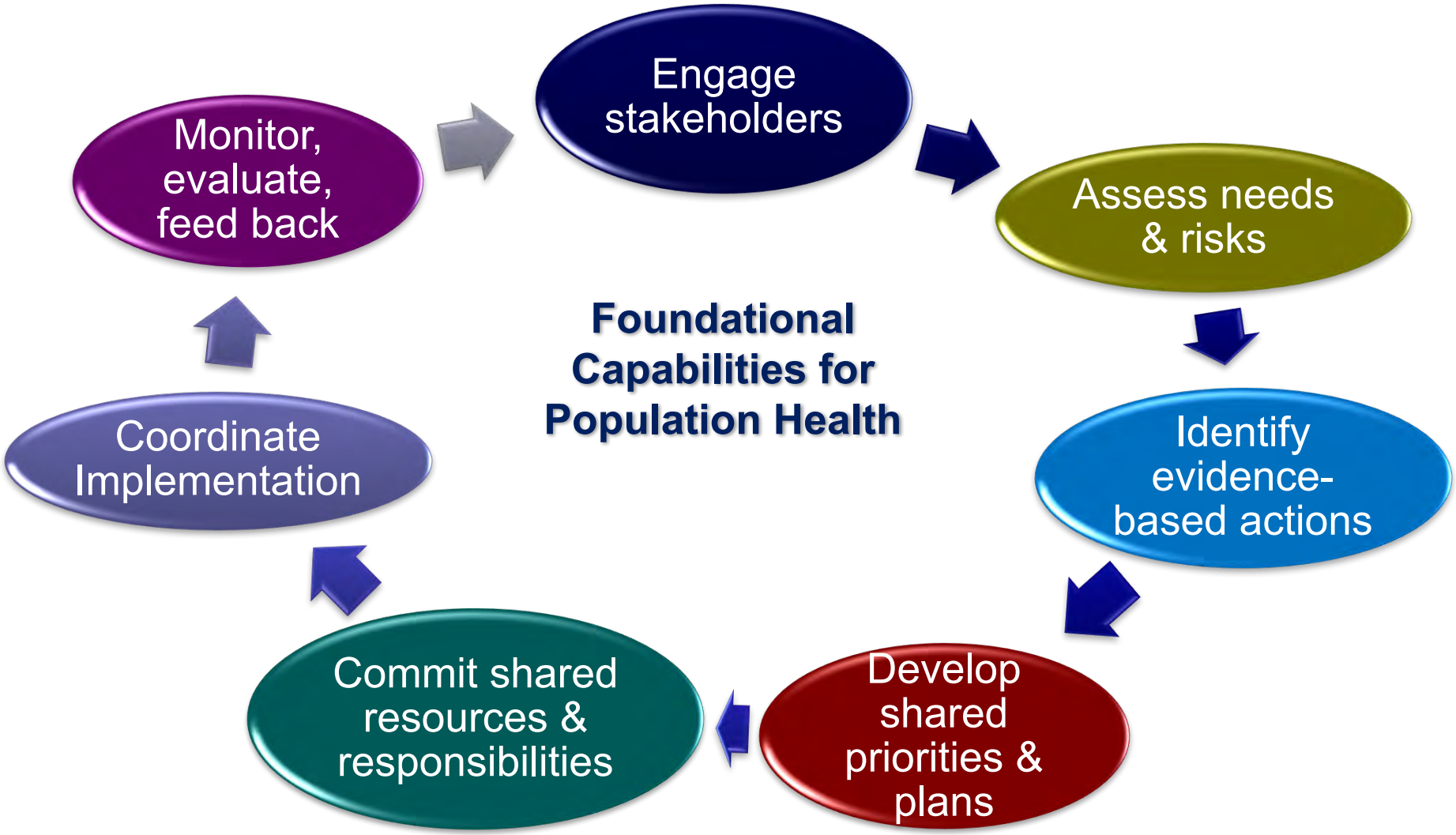
- Cohort of 497 communities with at least 100,000 residents
- Followed over time: 1998, 2006, 2012, 2014*, 2016, 2018
- Local public health officials report:
  - ***Scope***: availability of 20 recommended population health activities based on Institute of Medicine's core functions of assessment, policy development, and assurance.
  - ***Network***: organizations contributing to each activity
  - ***Centrality of effort***: of actors to coordinate actions
  - ***Quality***: perceived effectiveness of each activity

* Stratified sample of 500 communities with <100,000 residents added beginning in 2014 wave

Data linkages expand analytic possibilities for NALSYS

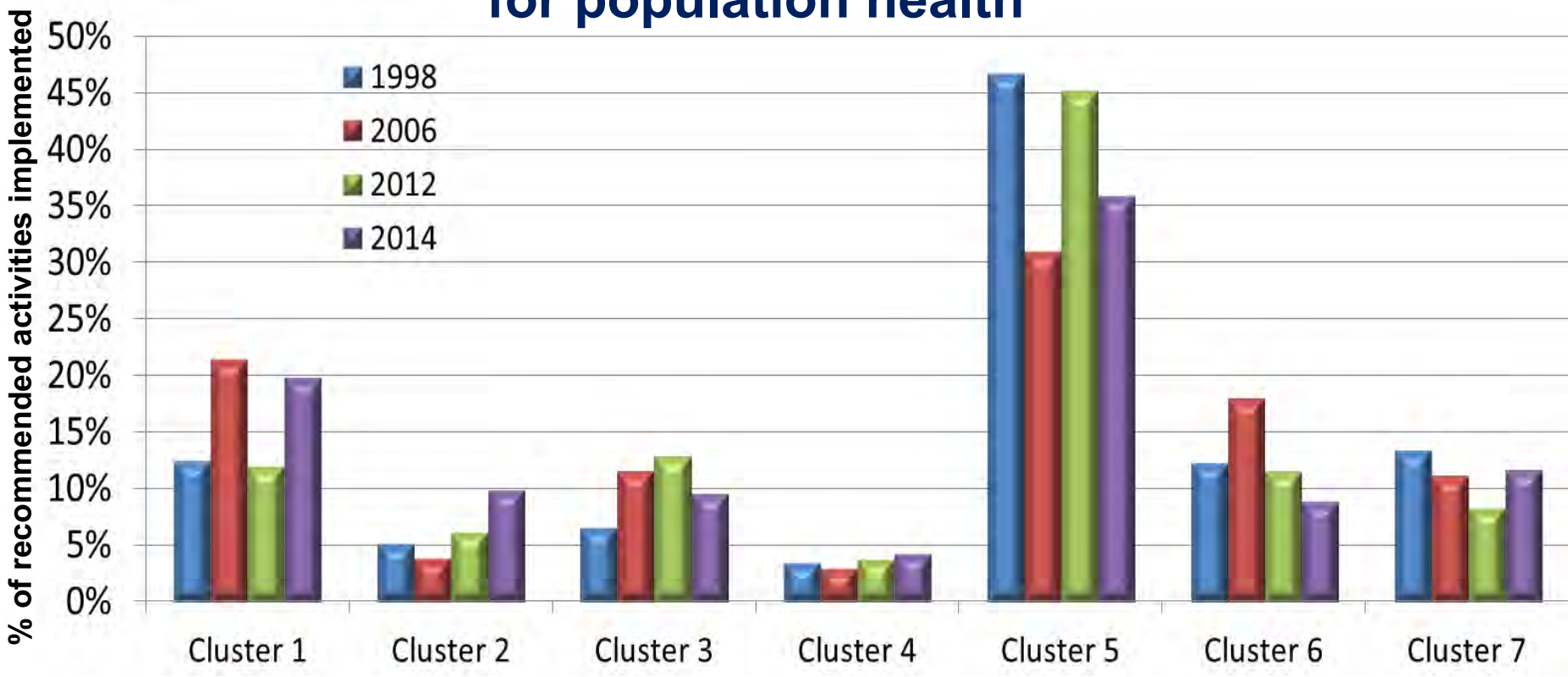
- **Area Health Resource File**: health resources, demographics, socioeconomic status, insurance coverage
- **NACCHO Profile data**: public health agency institutional and financial characteristics
- **CMS Impact File & Cost Report**: hospital ownership, market share, uncompensated care
- **Dartmouth 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

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



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

Classifying multi-sector delivery systems for population health

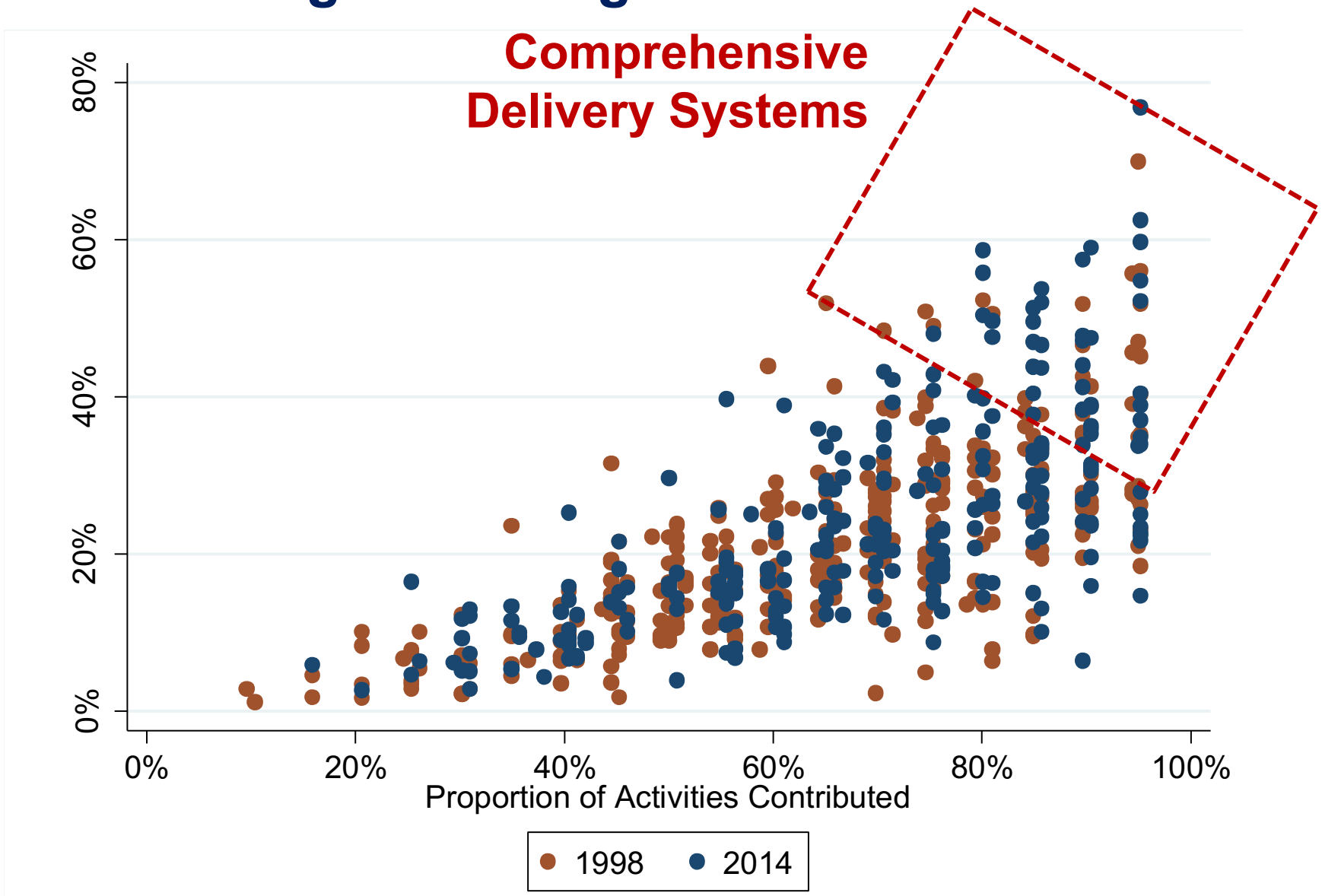


	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6	Cluster 7
Scope	High	High	High	Mod	Mod	Low	Low
Density	High	High	High	Mod	Mod	Low	Mod
Centrality	Mod	Low	High	High	Low	High	Low

Comprehensive (High System Capital) **Conventional** **Limited**

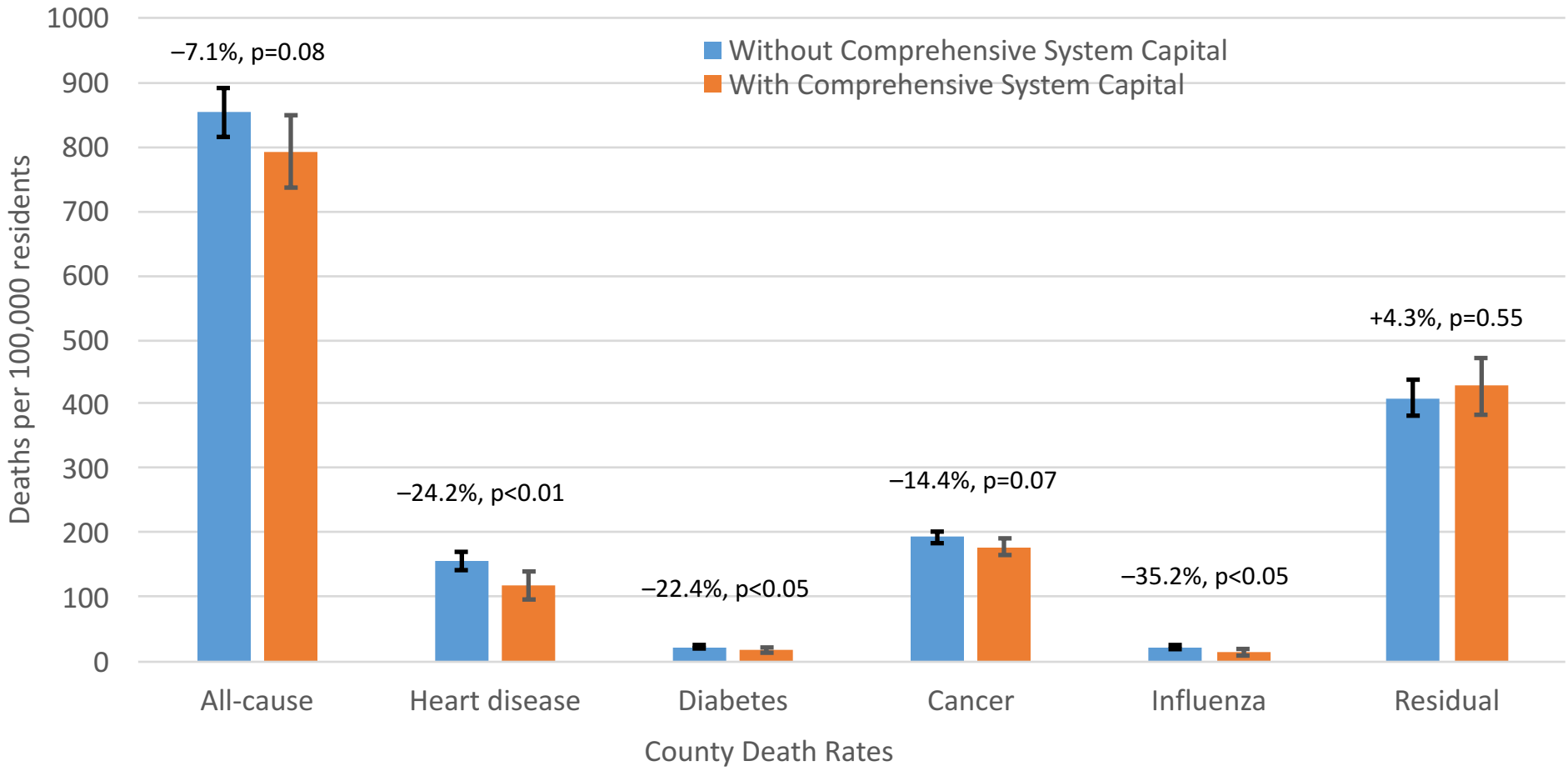
Mays GP et al. Understanding the organization of public health delivery systems: an empirical typology. *Milbank Q.* 2010;88(1):81–111.

Measuring the strength of multi-sector work



Mays GP et al. *Health Affairs* 2016

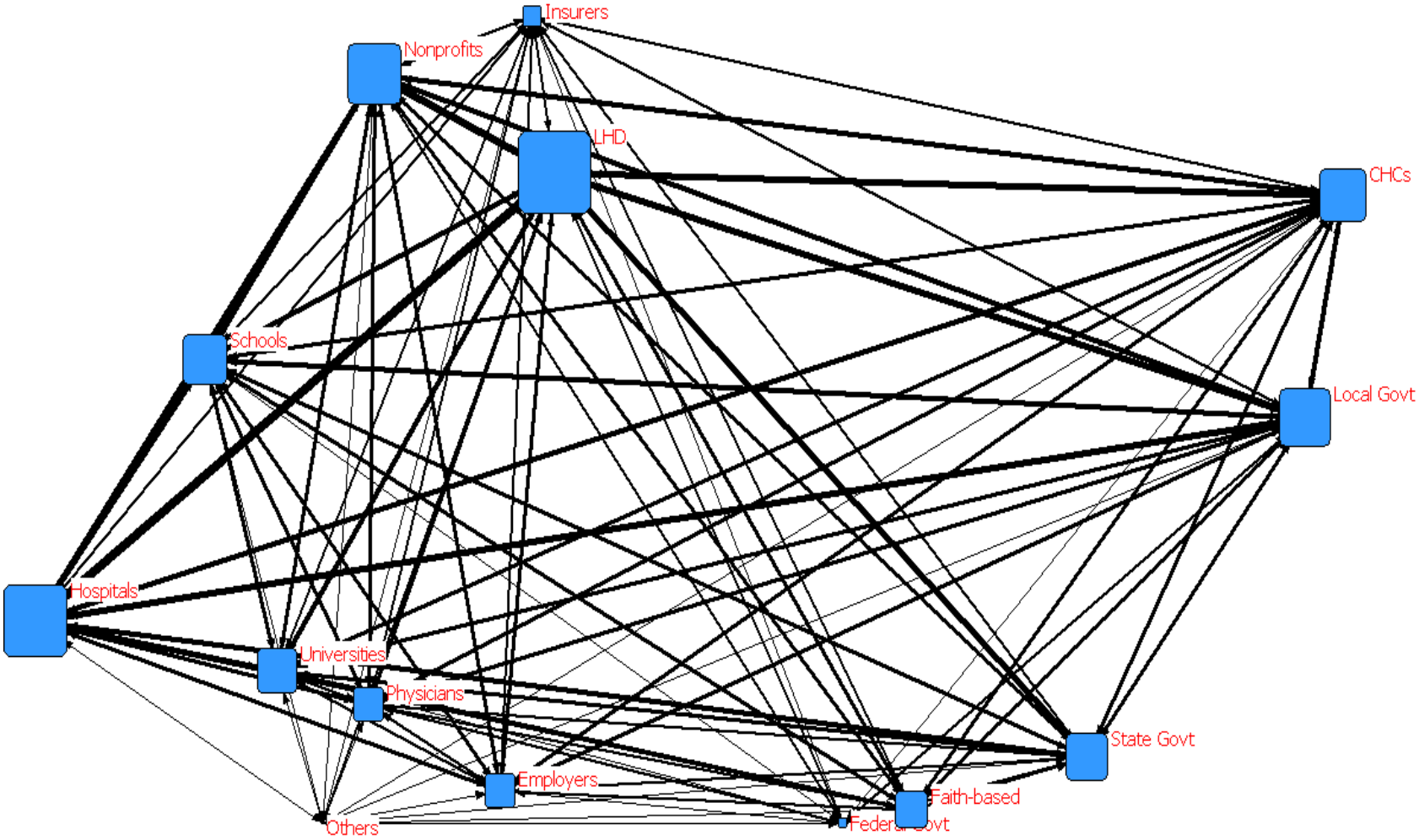
Motivation: Health effects attributable to strong multi-sector networks



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

Mays GP et al. *Health Affairs* 2016

Average network structure



Node size = degree centrality

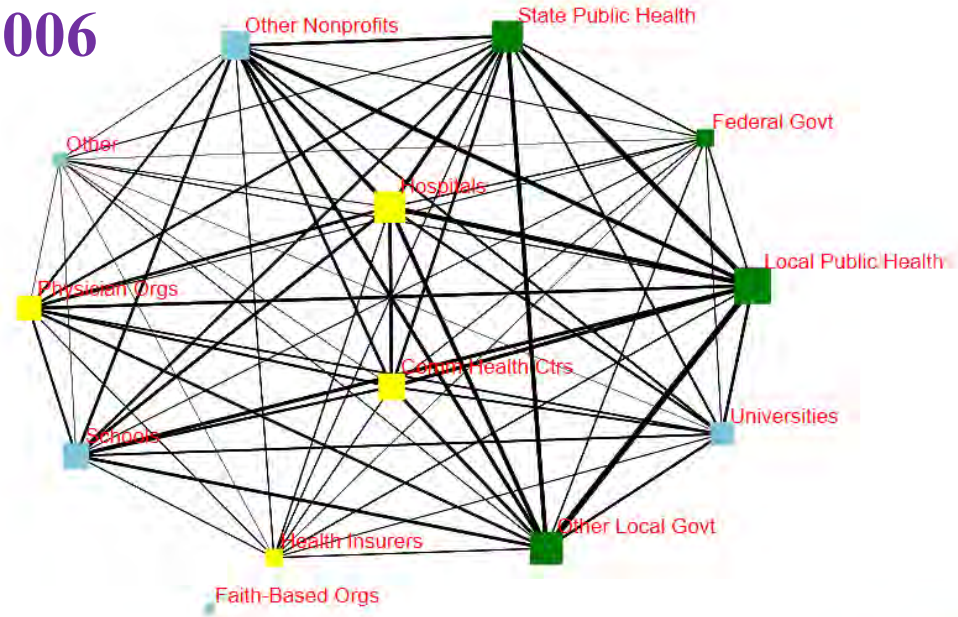
Line size = % activities jointly contributed (tie strength)

Network analytic approach

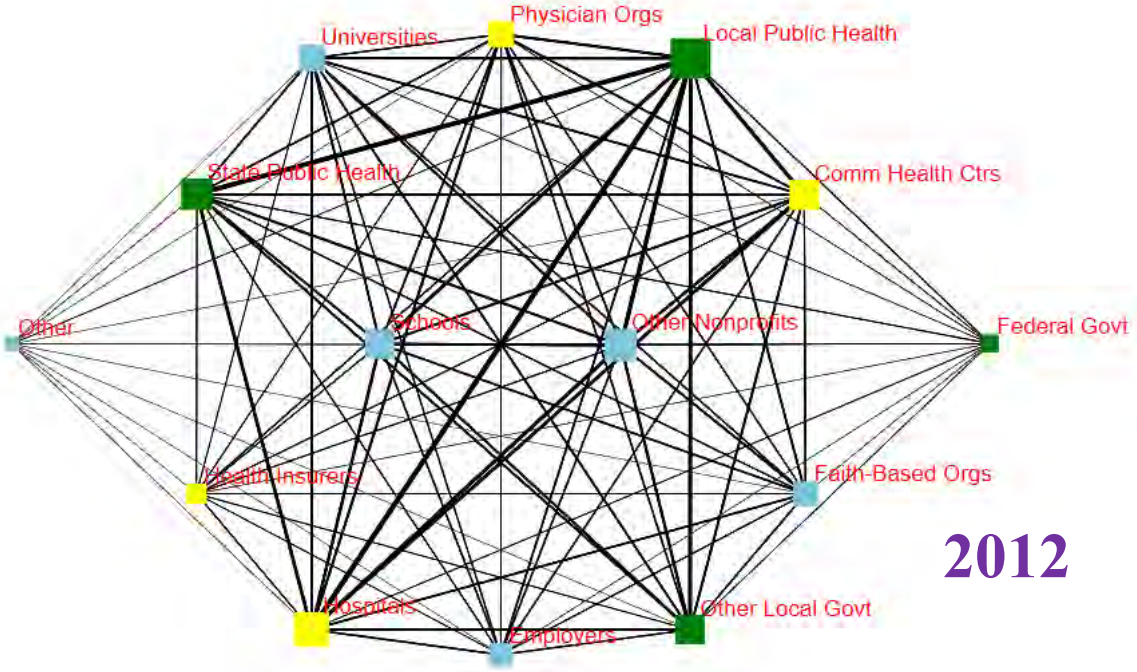
- Two-mode networks (organization types X activities) transformed to one-mode networks with tie strength indicated by number of activities jointly produced

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	
Community Health Centers (CHCs)	X		X		X			
Insurers					X	X		X
Employers								
Social service organizations		X		X			X	
Schools			X		X	X		
.....								

2006

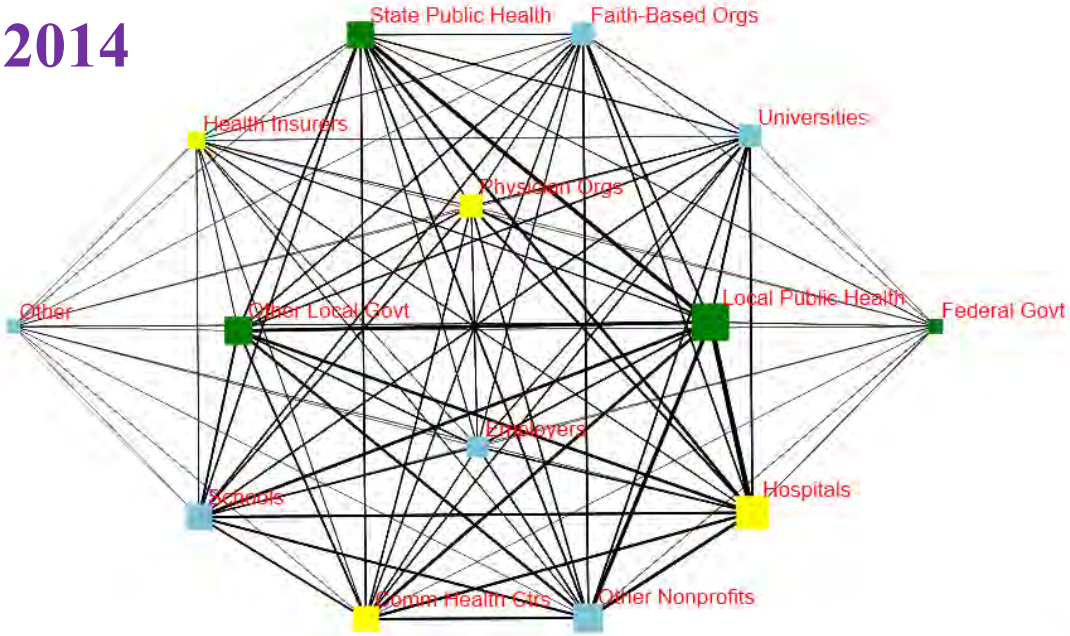


Average Population Health Network Structure, 2006 & 2012

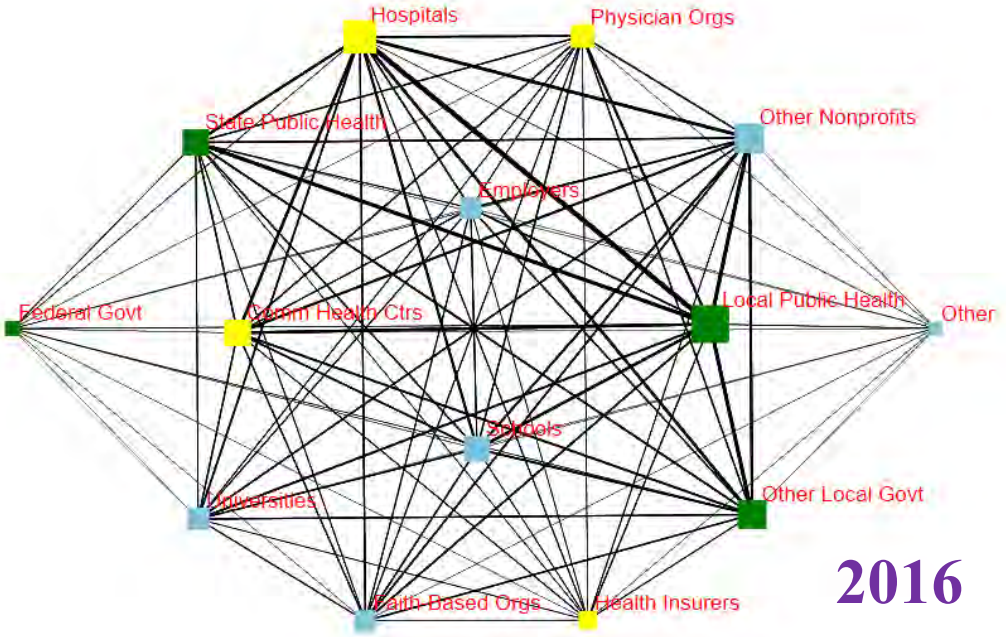


2012

2014



Average Population Health Network Structure, 2014 & 2016



2016

Multi-sector alliances in the population health system

- Population health activities are produced through highly inter-organizational and multi-sectoral efforts (62% of contributions from outside governmental public health sector)
- Structure of population health networks varies widely and changes over time.
- Stronger networks are associated with improved health and lower Medicare spending (Mays et. al. 2016; Mays et al, 2017)
- Network structure is endogenous – ignoring this can under-state its relationship with health & economic outcomes
- Further research includes taking a deeper dive into sector dynamics: employers, schools, healthcare organizations

Scope of Organizational Implementation of Recommended Population Health Activities

TYPE OF ORGANIZATION	1998	2016	Percent Change
Local health departments	**59.3%**	**65.1%**	**9.7%**
Other local government agencies	28.4%	29.9%	5.1%
State public health agencies	42.1%	29.9%	-29.1%
Other state government agencies	14.9%	10.2%	-31.9%
Federal government agencies	6.5%	6.2%	-4.6%
HOSPITALS	**33.2%**	**41.6%**	**25.4%**
Physician practices	18.2%	16.3%	-10.6%
Community health centers	11.4%	**27.4%**	140.8%
Health insurers	7.8%	10.4%	32.4%
Employers/business groups	14.7%	13.0%	-11.3%
Schools (K-12)	24.7%	21.7%	-12.3%
Colleges / universities	13.8%	20.2%	46.2%
Faith-based organizations	16.9%	14.1%	-16.4%
Other nonprofits	28.3%	29.8%	5.3%
Other	7.4%	5.5%	-24.8%

Scope of Hospital Implementation of Recommended Population Health Activities, 1998-2016

	BY ACTIVITY	1998	2016	Percent Change
Assessment activities				
1	Conduct periodic assessment of community health status and needs	58.3%	84.2%	44.5%
2	Survey community for behavioral risk factors	22.0%	28.3%	28.7%
3	Investigate adverse health events, outbreaks and hazards	56.3%	63.6%	13.1%
4	Conduct laboratory testing to identify health hazards and risks	49.0%	49.8%	1.7%
5	Analyze data on community health status and health determinants	46.7%	62.2%	33.2%
6	Analyze data on preventive services use	13.3%	24.0%	81.1%
Policy and planning activities				
7	Maintain a communication network among health-related organizations	66.3%	71.0%	7.2%
8	Routinely provide community health information to elected officials	26.6%	39.7%	49.0%
9	Prioritize community health needs	49.6%	75.1%	51.5%
10	Engage community stakeholders in health improvement planning	60.8%	72.0%	18.5%
11	Develop a communitywide health improvement plan	34.3%	59.1%	72.3%
12	Identify and allocate resources based on community health plan	16.0%	32.3%	101.4%
13	Develop policies to address priorities in community health plan	35.3%	47.6%	34.9%
14	Routinely provide community health information to the public	48.9%	59.0%	20.7%
15	Routinely provide community health information to the media	33.0%	57.6%	74.7%
Implementation and Assurance activities				
16	Evaluate local public health agency capacity and performance	3.2%	13.1%	311.1%
17	Link people to needed health and social services	57.8%	35.7%	-38.3%
18	Evaluate health programs and services in the community	13.5%	17.4%	28.3%
19	Monitor and improve implementation of health programs and policies	11.0%	13.9%	26.1%
Mean participation in **Assessment** activities (#1-6)		41.1%	52.0%	26.5%
Mean participation in **Policy** and planning activities (#7-15)		41.1%	57.1%	38.9%
Mean participation in Implementation and **Assurance** activities (#16-20)		17.3%	15.9%	-8.2%
	HOSPITAL mean participation in all activities	33.2%	**41.6%**	25.4%

Scope of Physician Practices Implementation of Recommended Population Health Activities, 1998-2016

	BY ACTIVITY	1998	2016	Percent Change
Assessment activities				
1	Conduct periodic assessment of community health status and needs	23.4%	26.1%	11.6%
2	Survey community for behavioral risk factors	5.8%	7.0%	20.6%
3	Investigate adverse health events, outbreaks and hazards	48.0%	41.8%	-12.9%
4	Conduct laboratory testing to identify health hazards and risks	25.5%	22.2%	-13.0%
5	Analyze data on community health status and health determinants	21.3%	20.4%	-4.2%
6	Analyze data on preventive services use	7.2%	10.0%	39.2%
Policy and planning activities				
7	Maintain a communication network among health-related organizations	37.8%	31.7%	-16.0%
8	Routinely provide community health information to elected officials	14.9%	12.6%	-15.3%
9	Prioritize community health needs	25.8%	27.7%	7.3%
10	Engage community stakeholders in health improvement planning	35.7%	28.0%	-21.7%
11	Develop a communitywide health improvement plan	19.6%	21.5%	9.8%
12	Identify and allocate resources based on community health plan	8.0%	9.5%	17.8%
13	Develop policies to address priorities in community health plan	15.6%	13.1%	-16.0%
14	Routinely provide community health information to the public	23.6%	21.0%	-11.0%
15	Routinely provide community health information to the media	11.7%	18.2%	54.8%
Implementation and Assurance activities				
16	Evaluate local public health agency capacity and performance	1.4%	6.4%	341.7%
17	Link people to needed health and social services	43.9%	22.2%	-49.6%
18	Evaluate health programs and services in the community	4.6%	4.3%	-7.4%
19	Monitor and improve implementation of health programs and policies	5.5%	3.4%	-38.4%
Mean participation in **Assessment** activities (#1-6)		**21.9%**	**21.3%**	**-2.9%**
Mean participation in **Policy** and planning activities (#7-15)		**21.4%**	**20.4%**	**-4.6%**
Mean participation in Implementation and **Assurance** activities (#16-20)		**11.3%**	**7.2%**	**-36.4%**
	PHYSICIAN PRACTICES mean participation in all activities	**18.2%**	**16.3%**	**-10.6%**

Scope of Community Health Center (CHC) Implementation of Recommended Population Health Activities

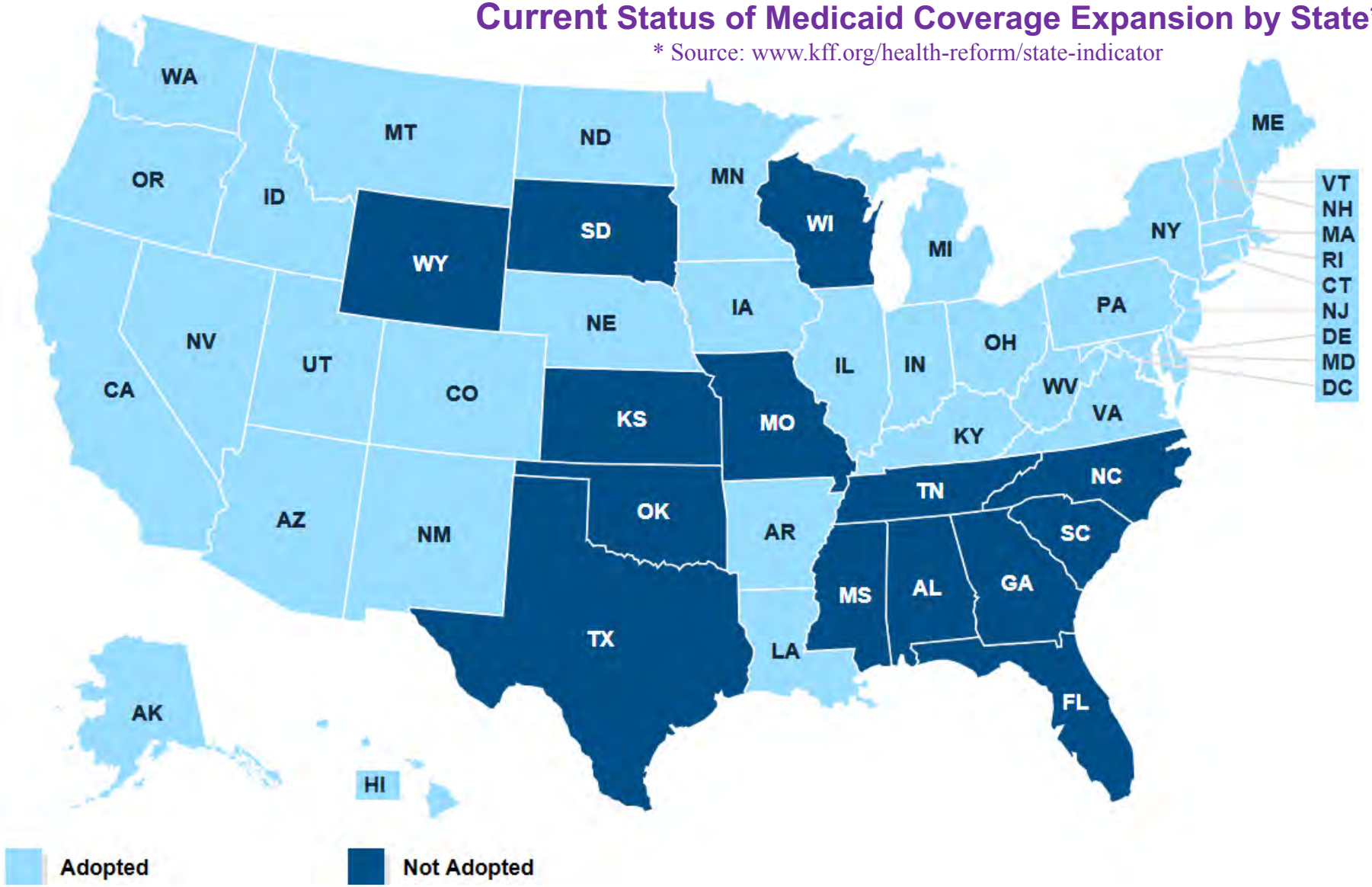
	BY ACTIVITY	1998	2016	Percent Change
Assessment activities				
1	Conduct periodic assessment of community health status and needs	22.3%	55.3%	148.2%
2	Survey community for behavioral risk factors	5.5%	18.8%	243.2%
3	Investigate adverse health events, outbreaks and hazards	12.9%	27.6%	114.5%
4	Conduct laboratory testing to identify health hazards and risks	5.2%	15.5%	200.6%
5	Analyze data on community health status and health determinants	15.9%	40.2%	153.9%
6	Analyze data on preventive services use	5.2%	16.1%	210.6%
Policy and planning activities				
7	Maintain a communication network among health-related organizations	27.1%	49.1%	81.2%
8	Routinely provide community health information to elected officials	9.5%	27.4%	189.6%
9	Prioritize community health needs	17.4%	54.4%	212.2%
10	Engage community stakeholders in health improvement planning	23.9%	57.1%	138.9%
11	Develop a communitywide health improvement plan	11.5%	44.5%	286.4%
12	Identify and allocate resources based on community health plan	6.3%	22.9%	262.7%
13	Develop policies to address priorities in community health plan	12.4%	33.2%	167.4%
14	Routinely provide community health information to the public	14.9%	39.5%	164.4%
15	Routinely provide community health information to the media	6.9%	32.4%	371.5%
Implementation and Assurance activities				
16	Evaluate local public health agency capacity and performance	1.7%	11.6%	566.1%
17	Link people to needed health and social services	29.5%	34.5%	16.9%
18	Evaluate health programs and services in the community	4.6%	11.3%	144.6%
19	Monitor and improve implementation of health programs and policies	5.2%	8.3%	59.7%
Mean participation in **Assessment** activities (#1-6)		**11.2%**	**28.9%**	**158.2%**
Mean participation in **Policy** and planning activities (#7-15)		**14.4%**	**40.1%**	**178.1%**
Mean participation in Implementation and **Assurance** activities (#16-20)		**8.4%**	**13.0%**	**55.3%**
COMMUNITY HEALTH CENTER mean participation in all activities		**11.4%**	**27.4%**	**140.8%**

Scope of Insurer Implementation of Recommended Population Health Activities, 1998-2016

	BY ACTIVITY	1998	2016	Percent Change
Assessment activities				
1	Conduct periodic assessment of community health status and needs	14.6%	13.2%	37.3%
2	Survey community for behavioral risk factors	5.8%	4.3%	-10.9%
3	Investigate adverse health events, outbreaks and hazards	7.1%	2.8%	-66.1%
4	Conduct laboratory testing to identify health hazards and risks	5.2%	1.4%	-35.2%
5	Analyze data on community health status and health determinants	11.2%	15.1%	51.9%
6	Analyze data on preventive services use	4.6%	8.3%	97.8%
Policy and planning activities				
7	Maintain a communication network among health-related organizations	18.4%	19.8%	7.4%
8	Routinely provide community health information to elected officials	4.0%	9.2%	130.1%
9	Prioritize community health needs	11.5%	21.0%	83.0%
10	Engage community stakeholders in health improvement planning	14.1%	21.9%	55.0%
11	Develop a communitywide health improvement plan	9.5%	17.6%	84.8%
12	Identify and allocate resources based on community health plan	2.9%	8.2%	187.3%
13	Develop policies to address priorities in community health plan	7.5%	14.0%	86.6%
14	Routinely provide community health information to the public	14.7%	22.5%	53.5%
15	Routinely provide community health information to the media	6.3%	13.6%	116.3%
Implementation and Assurance activities				
16	Evaluate local public health agency capacity and performance	1.7%	3.3%	92.8%
17	Link people to needed health and social services	20.5%	12.9%	-37.0%
18	Evaluate health programs and services in the community	2.9%	4.9%	69.3%
19	Monitor and improve implementation of health programs and policies	2.3%	4.6%	99.7%
Mean participation in **Assessment** activities (#1-6)		**8.1%**	**9.5%**	**17.7%**
Mean participation in **Policy** and planning activities (#7-15)		**9.8%**	**16.5%**	**67.8%**
Mean participation in Implementation and **Assurance** activities (#16-20)		**5.6%**	**5.1%**	**-8.5%**
	INSURER Mean participation in all activities	**7.8%**	**10.4%**	**32.4%**

Current Status of Medicaid Coverage Expansion by State*

* Source: www.kff.org/health-reform/state-indicator



Adopted - 37 states (incl. DC); Not Adopted – 14 states

Pre-Post analytic sample for examining the scope of healthcare organization implementation of recommended population health activities

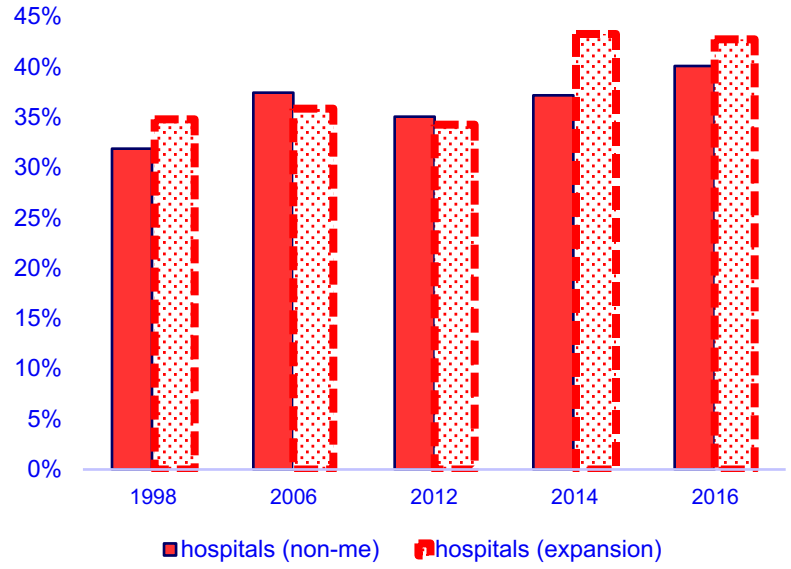
	Pre-Medicaid Expansion	Post-Medicaid Expansion	
Number of observations from Communities in Non-Medicaid Expansion states	222	253	475
Number of observations from communities in Medicaid Expansion states	225	353	578
	447	606	1053

Note: Data taken from the National Longitudinal Survey of Public Health Systems (NALSYS) survey waves of 1998, 2006, 2012, 2014, & 2016 (N=1,053 community-years). Analytic sample includes communities from 27 states that adopted Medicaid Expansion; MA is not included.

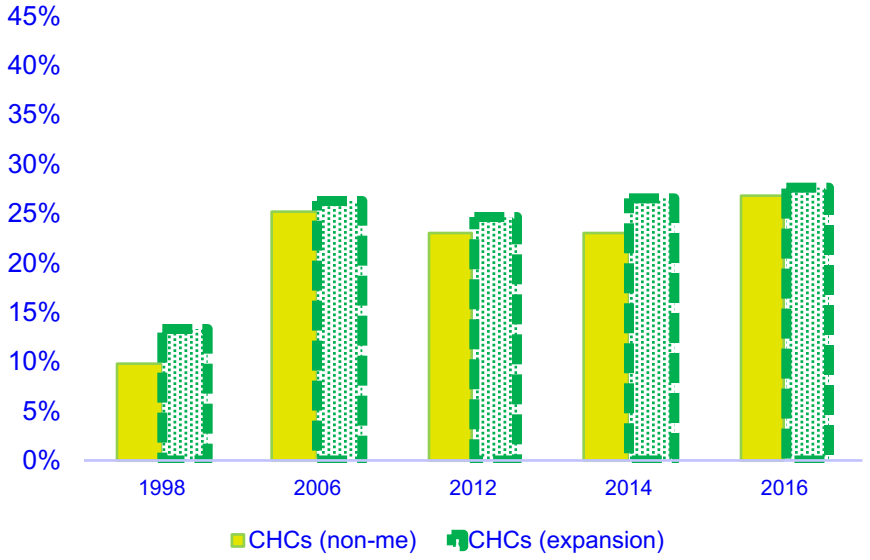
Some General Patterns and Trends: Preliminary Results from NALSYS

Scope of Implementation of Recommended Pop. Health Activities by Type of Organization

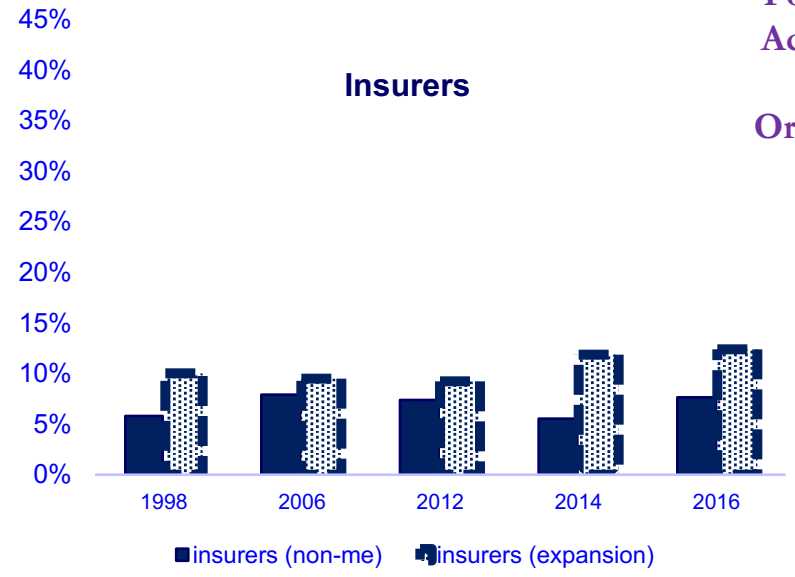
Hospitals



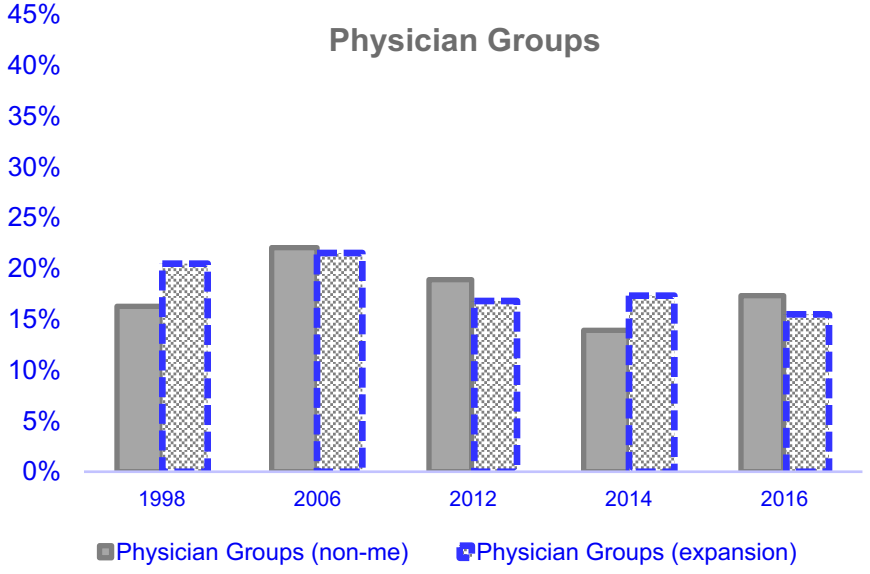
Community Health Centers



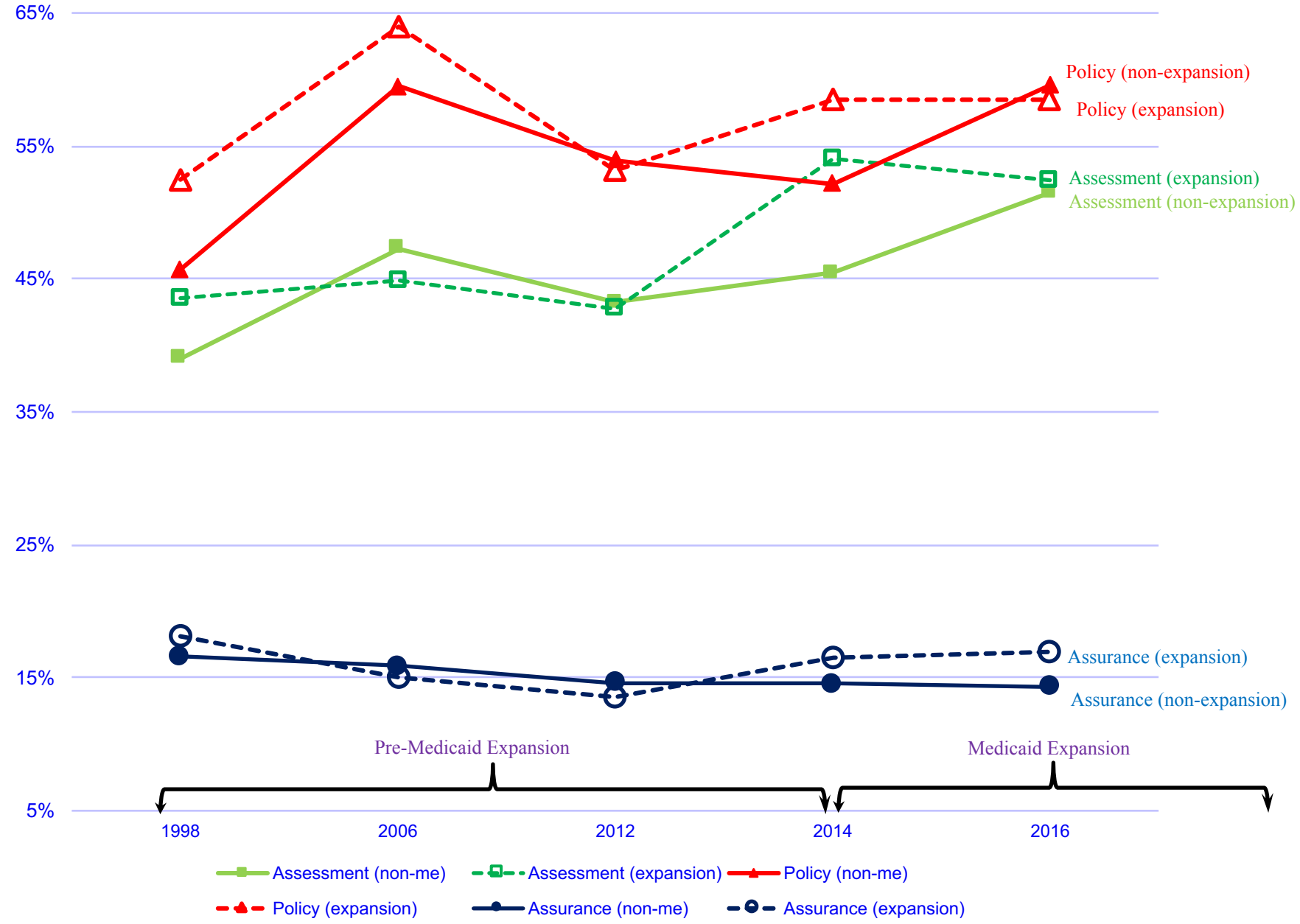
Insurers



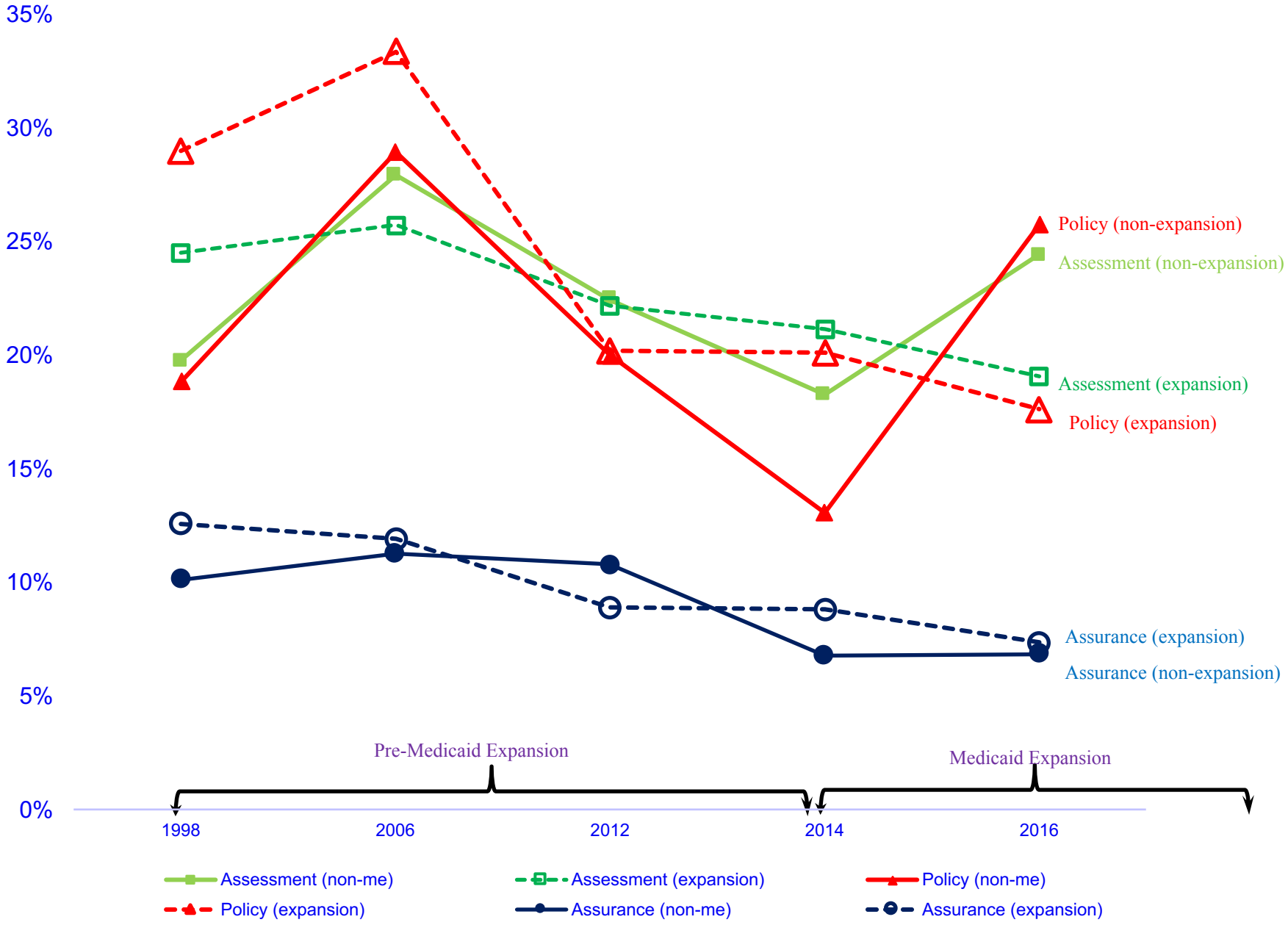
Physician Groups



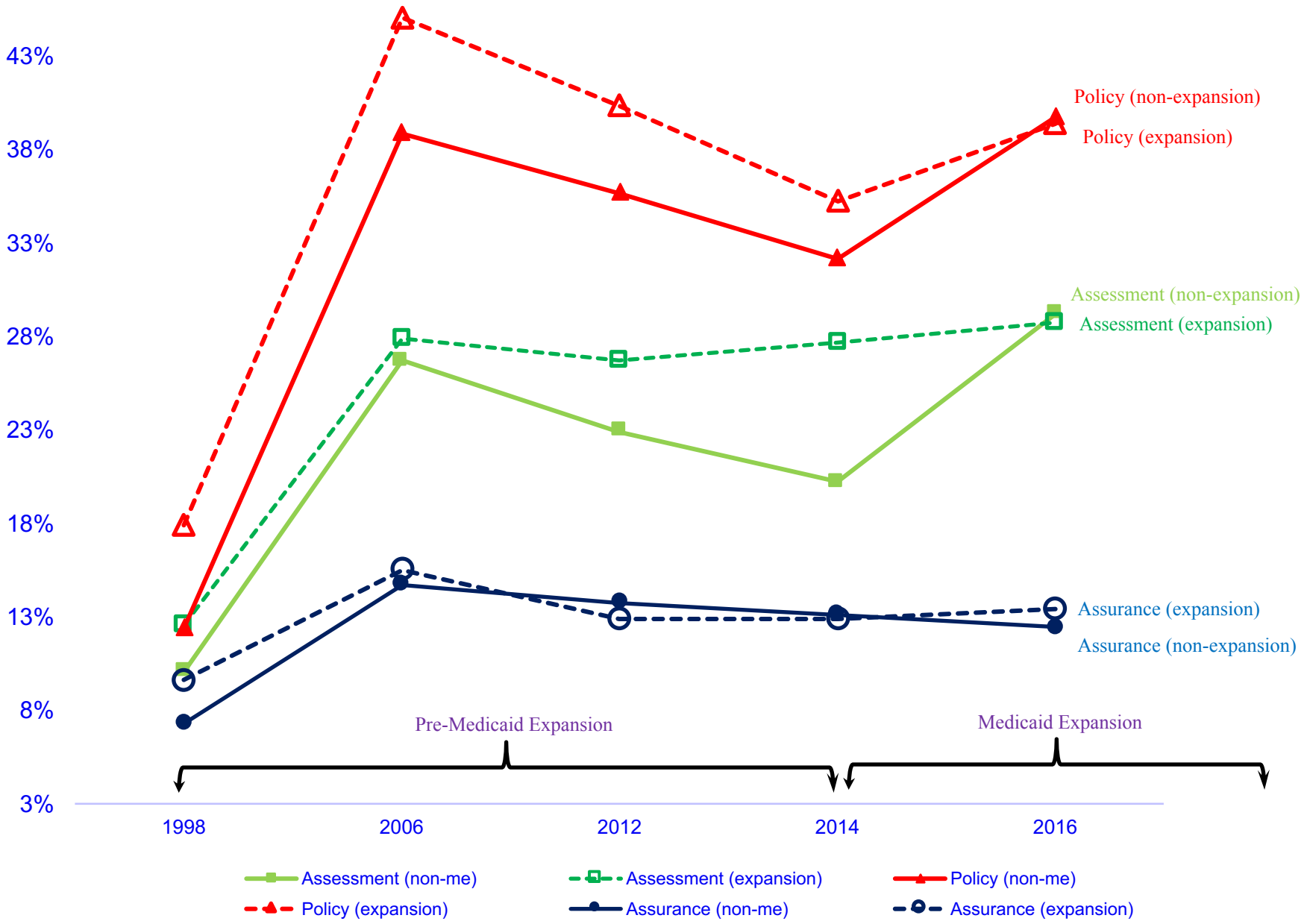
Scope of Hospital Implementation of Recommended Population Health Activities



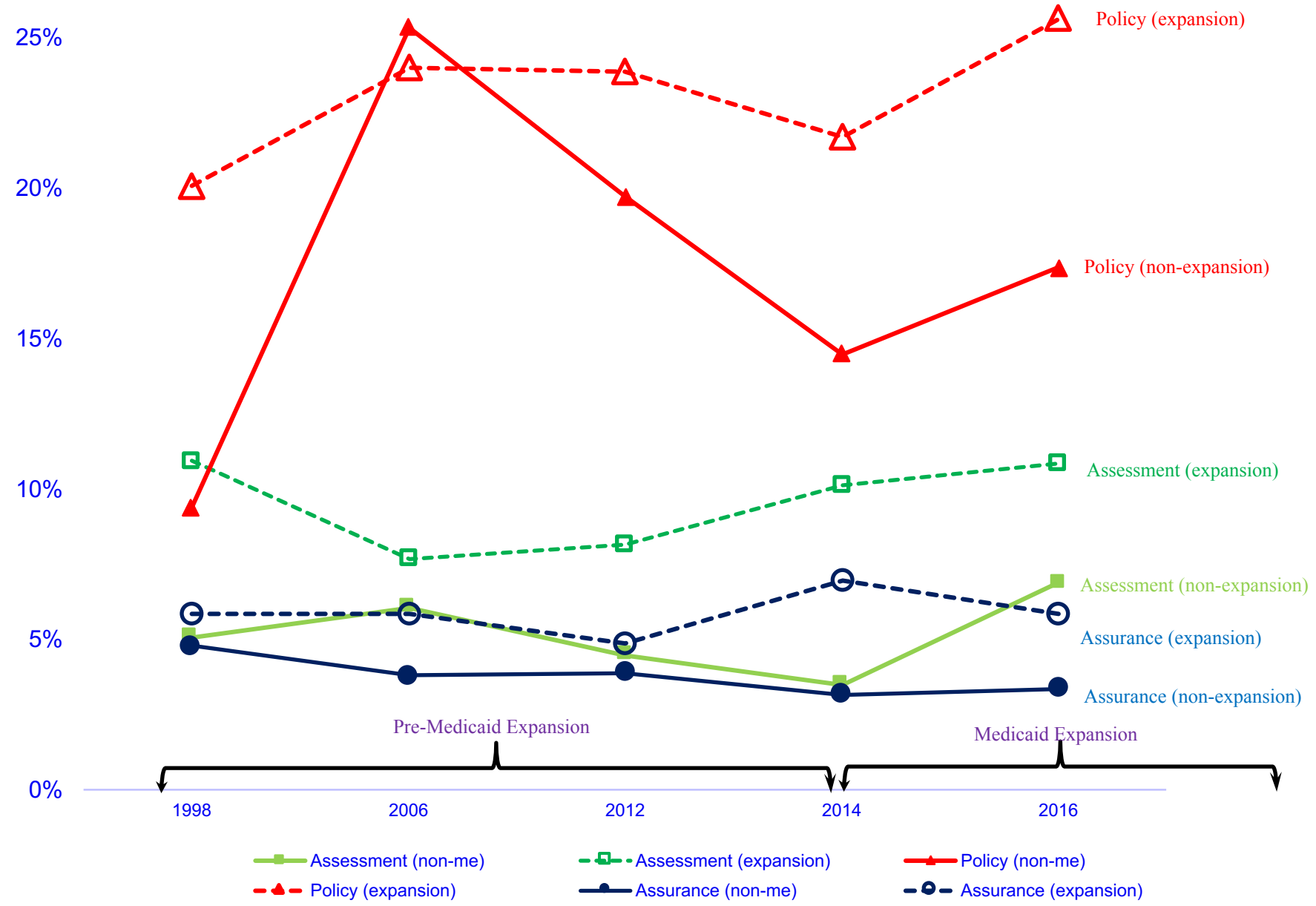
Scope of Physician Groups Implementation of Recommended Population Health Activities



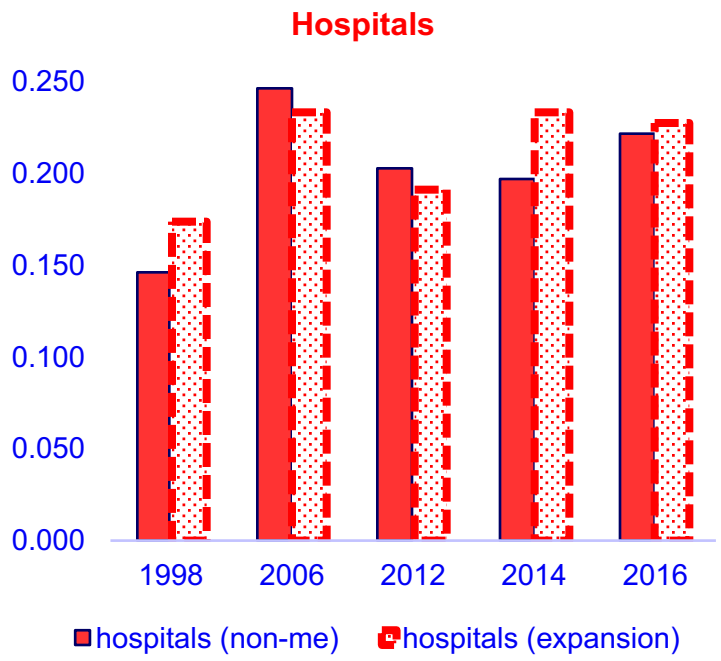
Scope of Community Health Center Implementation of Recommended Population Health Activities

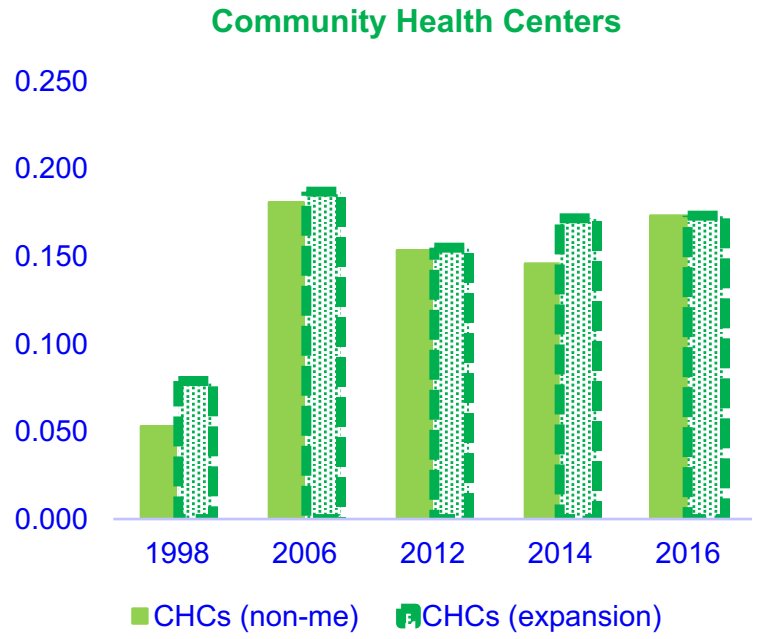


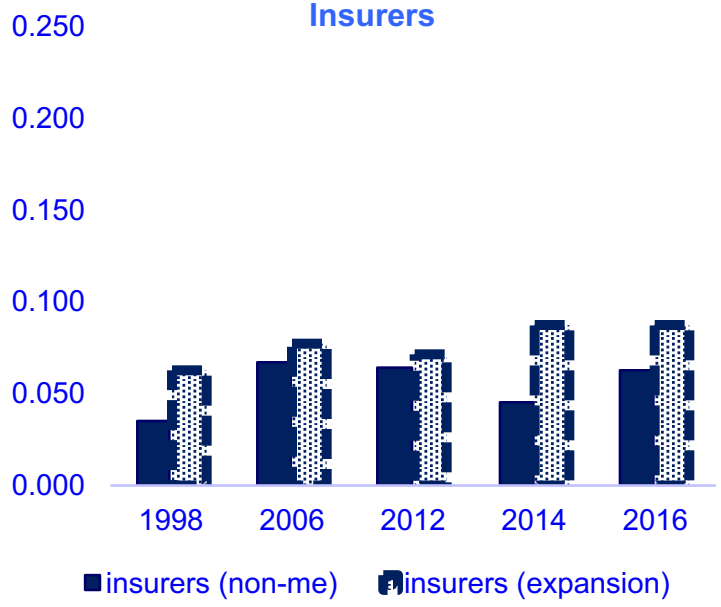
Scope of Insurer Implementation of Recommended Population Health Activities

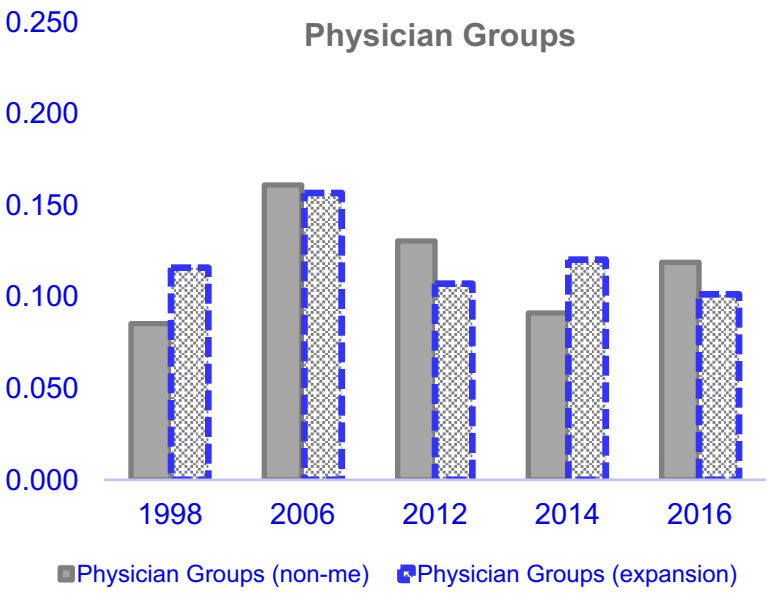


Degree Centrality

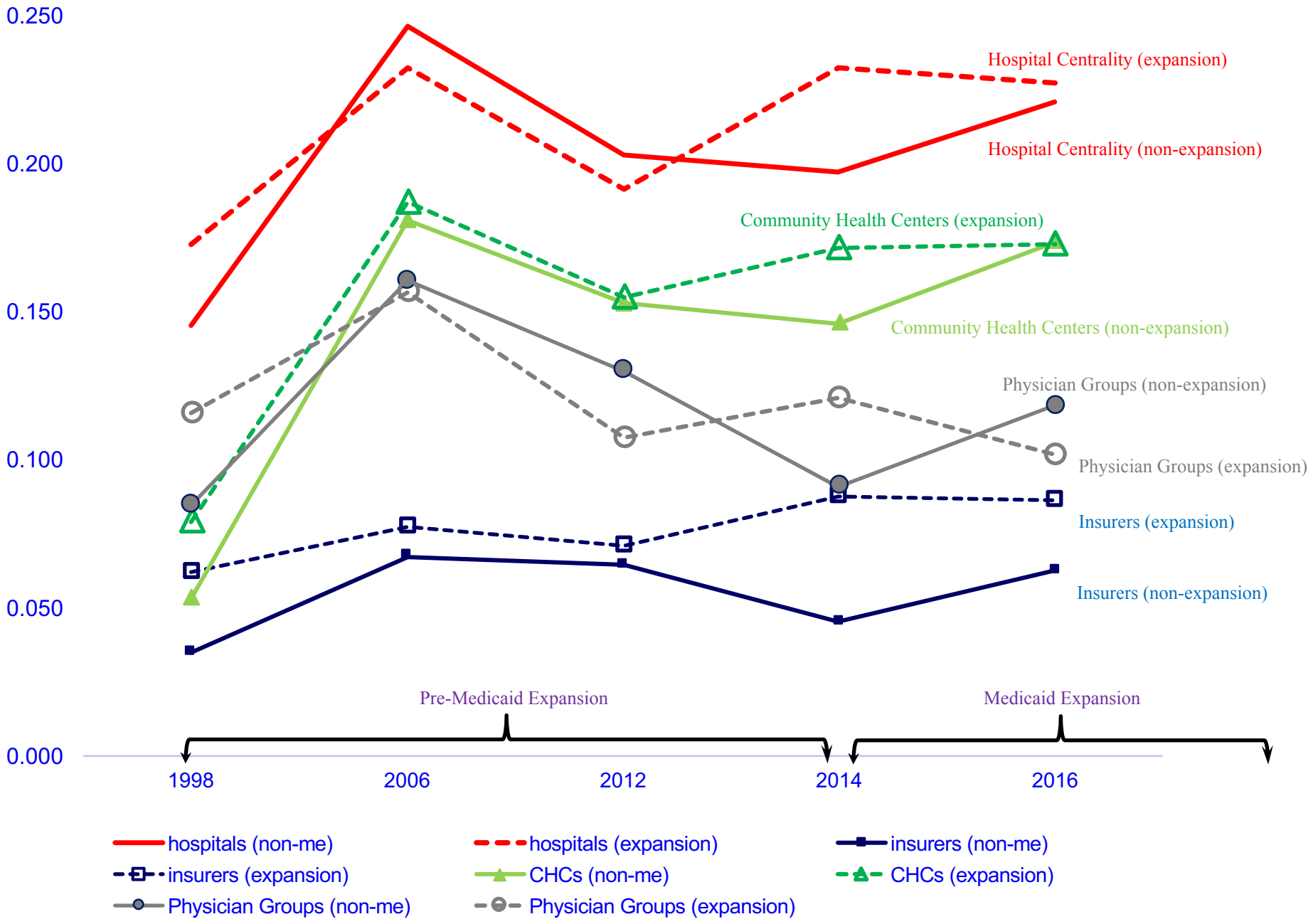








Degree Centrality



Local governmental public health expenditures from the National Association of County and City Health Officials (NACCHO) Profile Surveys: Preliminary Analysis

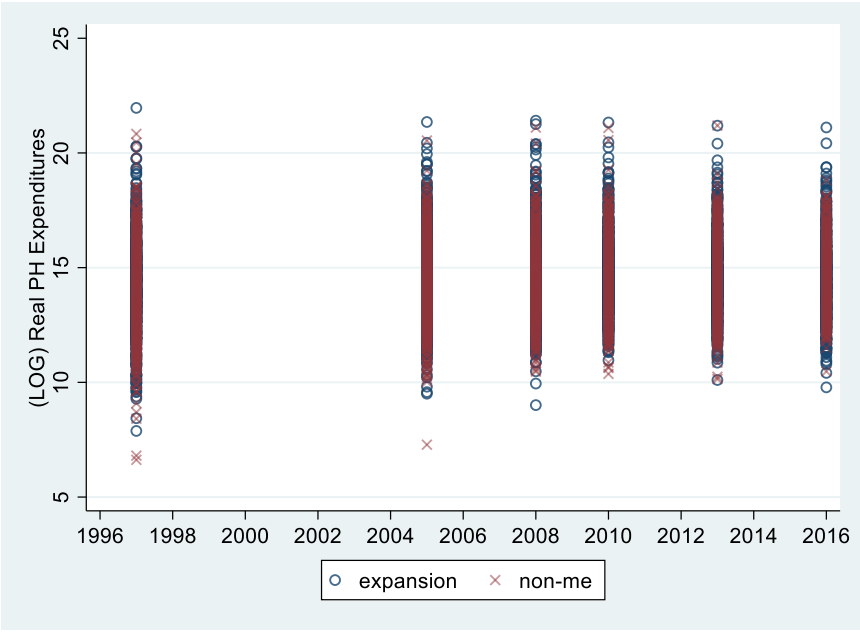
Pre-Post analytic sample for examining local governmental public health expenditures

	Pre-Medicaid Expansion	Post-Medicaid Expansion	
Number of observations from local health jurisdictions in Non-Medicaid Expansion states	5212	558	5770
Number of observations from local health jurisdictions in Medicaid Expansion states	3847	659	4506
	9059	1217	

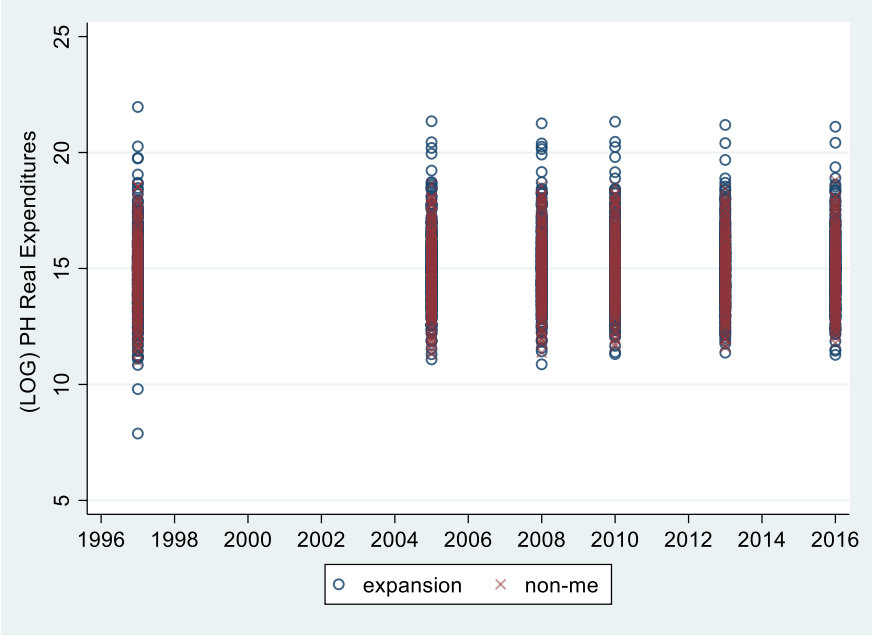
Note: Expenditure data observations are taken from the 1997, 2005, 2008, 2010, 2013, & 2016 NACCHO Profile Surveys (N=10,276 local health jurisdiction-years)

Expenditure Reponses from NACCHO Profile Surveys, 1997-2016, by Full Sample & Balanced Panel Observations

state	1997		2005		2008		2010		2013		2016	
	full	bal	full	bal	full	bal	full	bal	full	bal	full	bal
AK	0		23		7		4		4		3	
AL	67	25	48	25	66	25	66	25	64	25	47	25
AR	61		73		78		71		0		0	
AZ	14	4	13	4	14	4	11	4	11	4	10	4
CA	58	13	49	13	44	13	40	13	35	13	32	13
CO	46	14	41	14	52	14	44	14	40	14	39	14
CT	73	11	54	11	49	11	43	11	37	11	29	11
DC	1		0		1		1		1		1	
DE	2	1	2	1	1	1	2	1	2	1	2	1
FL	65	45	60	45	66	45	64	45	65	45	58	45
GA	138		129		77		15		11		9	
HI	0		1									
IA	80	22	83	22	84	22	60	22	58	22	48	22
ID	7	7	7	7	7	7	7	7	7	7	7	7
IL	88	48	88	48	91	48	87	48	77	48	67	48
IN	86	16	59	16	51	16	51	16	41	16	44	16
KS	95	22	76	22	74	22	70	22	63	22	51	22
KY	44	12	37	12	41	12	36	12	50	12	44	12
LA	7	1	8	1	7	1	7	1	3	1	3	1
MD	24	13	20	13	24	13	21	13	23	13	15	13
ME	4		2		2		1		1		2	
MI	43	15	40	15	41	15	36	15	39	15	26	15
MN	51	17	66	17	74	17	66	17	54	17	41	17
MO	112	29	76	29	98	29	85	29	85	29	77	29
MS	74		9		7		4		6		5	
MT	25	2	33	2	32	2	23	2	23	2	20	2
NC	86	35	74	35	78	35	76	35	71	35	62	35
ND	24	12	24	12	27	12	20	12	23	12	24	12
NE	18	5	24	5	23	5	20	5	18	5	17	5
NH	10		2		2		2		3		2	
NJ	97	13	64	13	102	13	85	13	67	13	40	13
NM	4		4		3		2		4		2	
NV	2	1	15	1	4	1	3	1	4	1	1	1
NY	57	13	55	13	51	13	44	13	35	13	26	13
OH	122	26	98	26	90	26	89	26	75	26	69	26
OK	59		64		59		63		0		1	
OR	34	9	27	9	28	9	30	9	23	9	22	9
PA	9	4	11	4	13	4	11	4	16	4	7	4
SC	13		10		8		6		4		4	
SD	2	1	2	1	1	1	1	1	1	1	1	1
TN	91	3	37	3	86	3	14	3	72	3	61	3
TX	55	7	62	7	53	7	36	7	35	7	30	7
UT	10	4	5	4	8	4	10	4	12	4	10	4
VA	35	15	34	15	34	15	33	15	28	15	24	15
VT	11		11		9		0		0		0	
WA	33	13	29	13	29	13	32	13	26	13	22	13
WI	92	43	88	43	85	43	78	43	66	43	77	43
WV	47	8	34	8	38	8	34	8	29	8	20	8
WY	12	4	11	4	22	4	14	4	18	4	15	4
Total	2,188	533	1,882	533	1,941	533	1,618	533	1,430	533	1,217	533



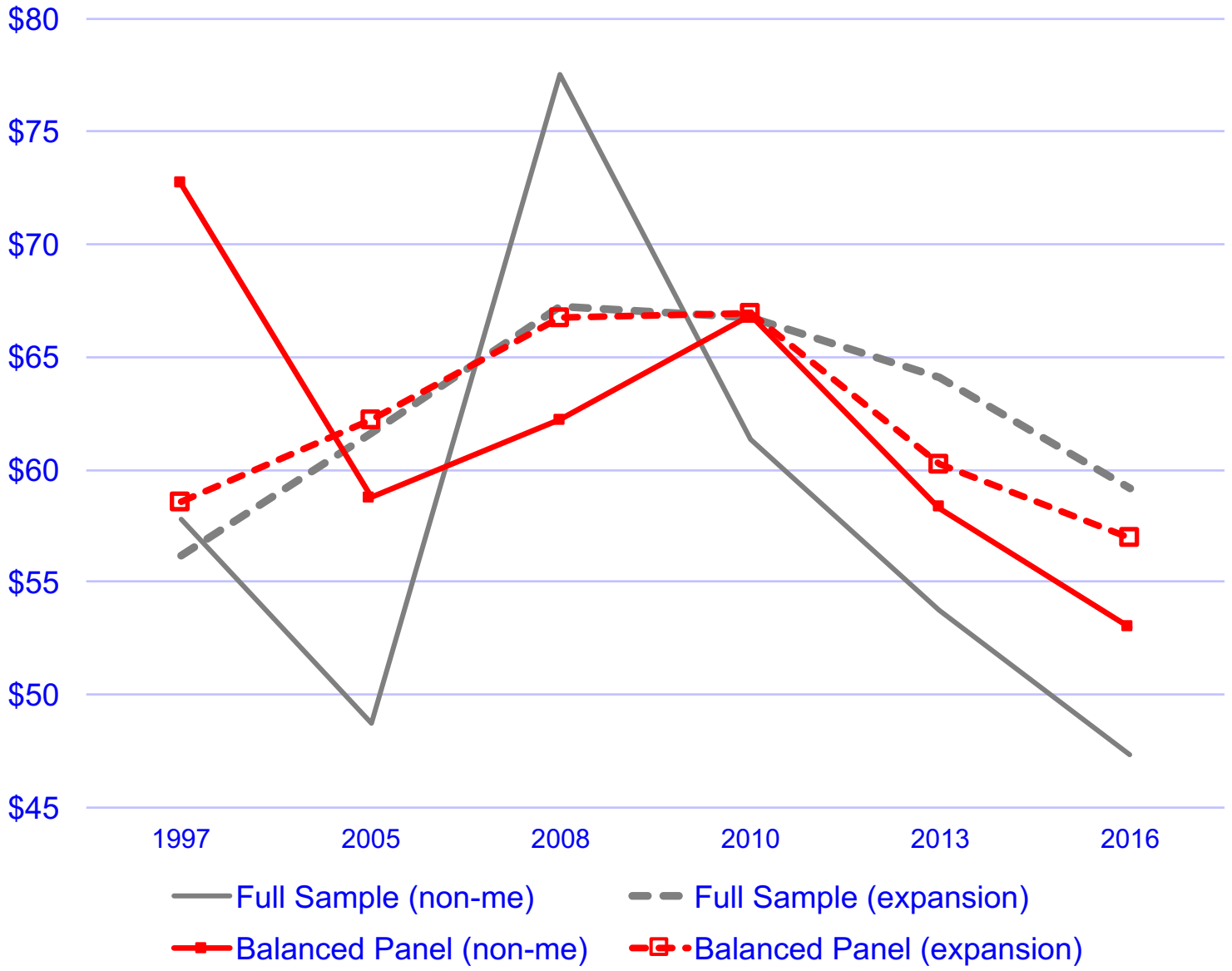
Full Sample



Balanced Panel

Average Real Per-Capita Local Public Health Expenditures, 1997-2016 (in 2014 dollars)

Source: NACCHO Profile Surveys (1997, 2005, 2008, 2010, 2013, 2016)



Next Steps…more to come

- Difference-in-differences approach to estimate the impact of Medicaid Expansion on organizational dynamics, network structure, and public health spending
  - Preliminary results lend evidence to the positive impacts of Medicaid expansion on hospital and insurer contributions to population health.
- Ongoing work on the other 2 study aims:
  - Identify ACA-related policies associated with changes in alliances and spending across states and communities
  - Explore how coverage expansions may interact with other ACA-related policies in shaping multi-sector alliances and contributions to population health activities.

Questions?

www.systemsforaction.org

Upcoming Webinars

Archives

http://systemsforaction.org/research-progress-webinars

Upcoming

February 27, 2019, 12 p.m., ET

Systems for Action Individual Research Project

Housing for Health: Cross-Sector Impacts of Supportive Housing for Homeless High Users of Health Care

Ricardo Basurto Davila, PhD, MS, Chief Executive Officer, Policy Analysis Unit, Los Angeles Co. Department of Public Health and Corrin Buchanan, MPP, Program Manager, Housing for Health, Los Angeles Co. Department of Public Services

March 13, 2019, 12 p.m., ET

Systems for Action Individual Research Project

Community Complex Care Response Team to Improve Geriatric Public Health Outcomes

Carolyn E. Z. Pickering, PhD, RN, School of Nursing, U.of Texas Health Science Center at San Antonio and Christopher D. Maxwell, PhD, School of Criminal Justice, Michigan State University

March 27, 2019, 12 p.m., ET

Systems for Action Individual Research Project

Integrating Behavioral Health with TANF to Build a Culture of Health

Mariana Chilton, PhD, MPH, Associate Professor, and Sandra Bloom, MD, Department of Health Management & Policy, Drexel University Dornsife School of Public Health

Acknowledgements

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College of Public Health
Center for Public Health Systems and Services Research

and

Gatton College of Business and Economics