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Analyzing Return on Investment in Public Health: Implications and Future Directions

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Available at: https://works.bepress.com/glen_mays/100/

Analyzing Return on Investment in Public Health: Implications and Future Directions

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Realizing Greater Value from ROI Analysis

- Gaining a deeper understanding of costs: accuracy & variability
- Compared to what: going beyond pre-post
- Attribution issues: using stronger designs
- Improving the ROI: opportunities for efficiency



Why a stronger focus on costs?

“Poor costing systems have disastrous consequences. It is a well-known management axiom that what is not measured cannot be **managed or improved**. Since providers misunderstand their costs, they are unable to **link cost to process improvements or outcomes**, preventing them from making good decisions....Poor cost measurement [leads] to huge **cross-subsidies across services**...Finally, poor measurement of costs and outcomes also means that effective and efficient providers **go unrewarded**.”



— R.S. Kaplan and M.E. Porter, The big idea: how to solve the cost crisis in health care. *Harvard Business Review*, 2011.

Toward a deeper understanding of costs & returns

2012 Institute of Medicine Recommendations

- Identify the components and **costs of a minimum package** of public health services
 - Foundational capabilities
 - Basic programs
- Implement a **national chart of accounts** for tracking spending levels and flow of funds
- Expand **research on costs and effects** of public health delivery



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

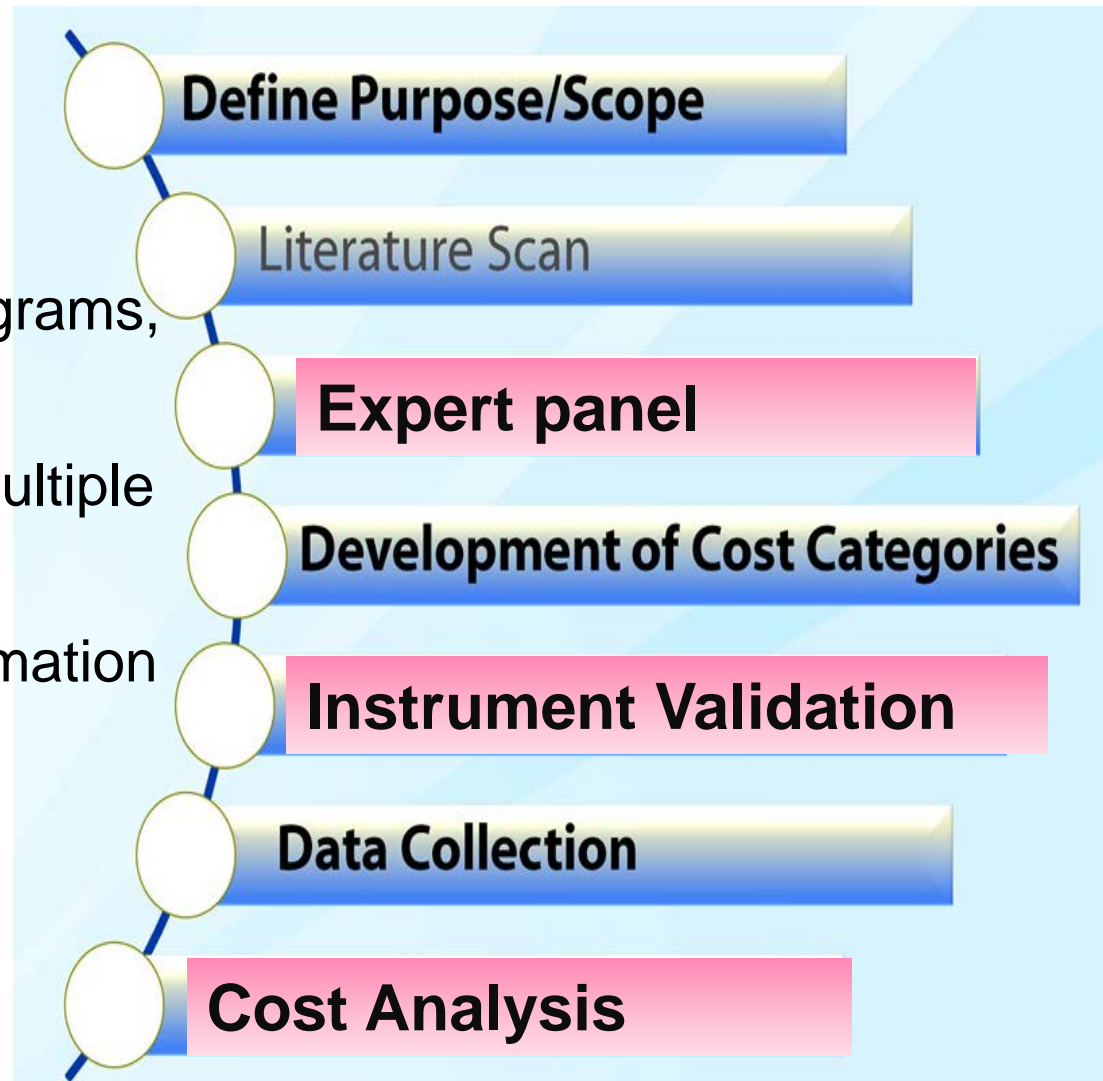
Key questions for cost analysis

- ◆ What level of resources are required to deliver a given bundle of public health activities for a given population?
- ◆ How do delivery costs vary across communities and population groups?
- ◆ What delivery system characteristics influence costs?



Robert Wood Johnson Foundation's Public Health Delivery and Cost Studies (DACCS)

- Conducted by PBRNs
- Focus on high-value programs, services, & infrastructure
- Compare costs across multiple public health settings
- Use a standard cost estimation methodology



Costing methods used in DACS

- Direct observation methods
- Time studies and time-and-motion methods
- Activity logs
- Analysis of administrative records
- Staff & manager surveys
- Group process methods with vignettes

SASCAP™
Substance Abuse Services Cost Analysis Program



SPECIAL REPORT

ARCHIVE

Results and Policy Implications of the Resource-Based Relative-Value Study

William C. Hsiao, Ph.D., Peter Braun, M.D., Daniel Dunn, Ph.D., Edmund R. Becker, Ph.D., Margaret DeNicola, M.P.H., and Thomas R. Ketcham, M.P.H.

N Engl J Med 1988; 319:881-888 | [September 29, 1988](#) | DOI: 10.1056/NEJM198809293191330

Costing methods used in DACS

Don't overlook...

- ✦ Resources that are hard to measure or value
- ✦ Resources used in small amounts
- ✦ Resources shared by multiple programs/activities
- ✦ Resources procured without money
 - Volunteer time
 - Parent/caregiver time
 - Intervention recipient time
 - In-kind contributions/donated materials
 - Existing resources

Analytic methods used in DACS

- **Attributing cost impact**
 - cost function estimation
- **Estimating cost heterogeneity & efficiency**
 - Stochastic frontier analysis
 - Data envelopment analysis

Explaining the efficiency of local health departments in the U.S.: an exploratory analysis

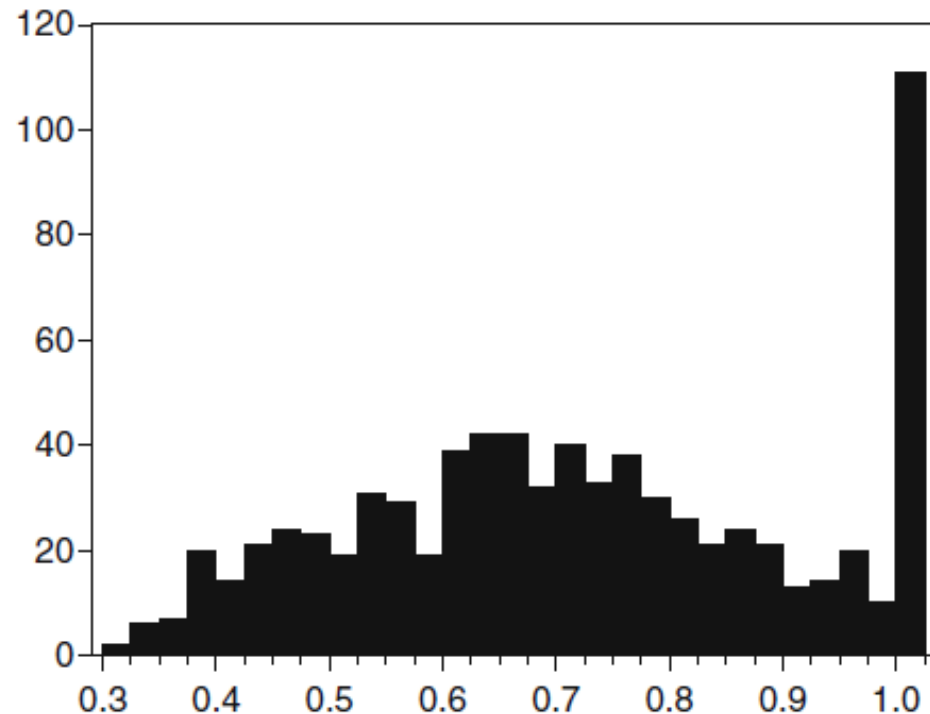
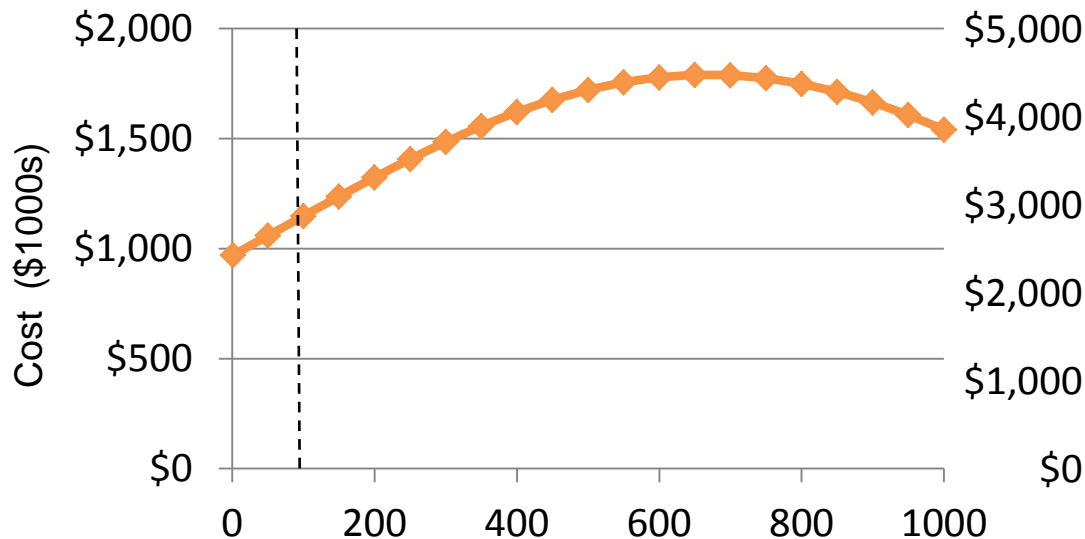


Fig. 4 Relative efficiency of 771 LHDs with nonzero inputs and outputs

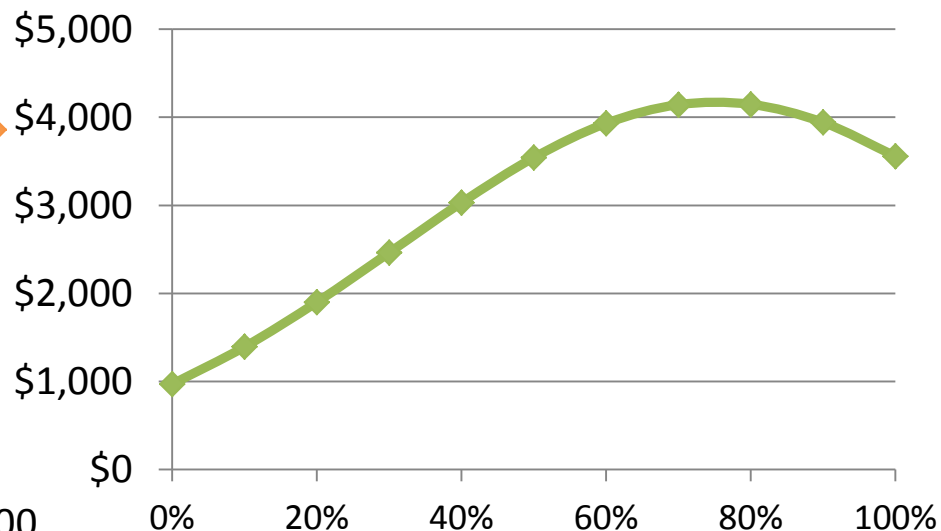
Mukherjee, Santerre and Zhang 2009

Improving ROI: Economies of Scale & Scope

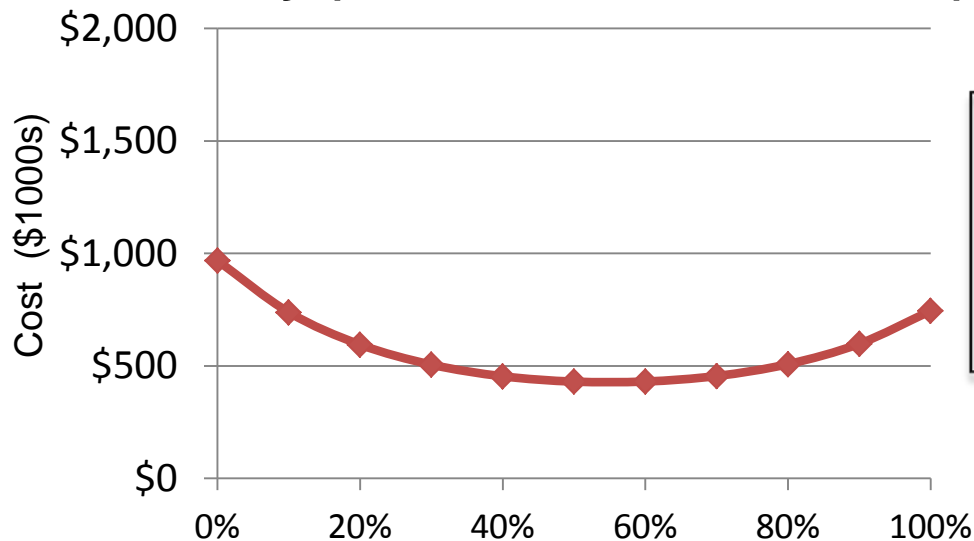
Scale (Population in 1000s)



Scope (% of Activities)



Quality (Perceived Effectiveness)

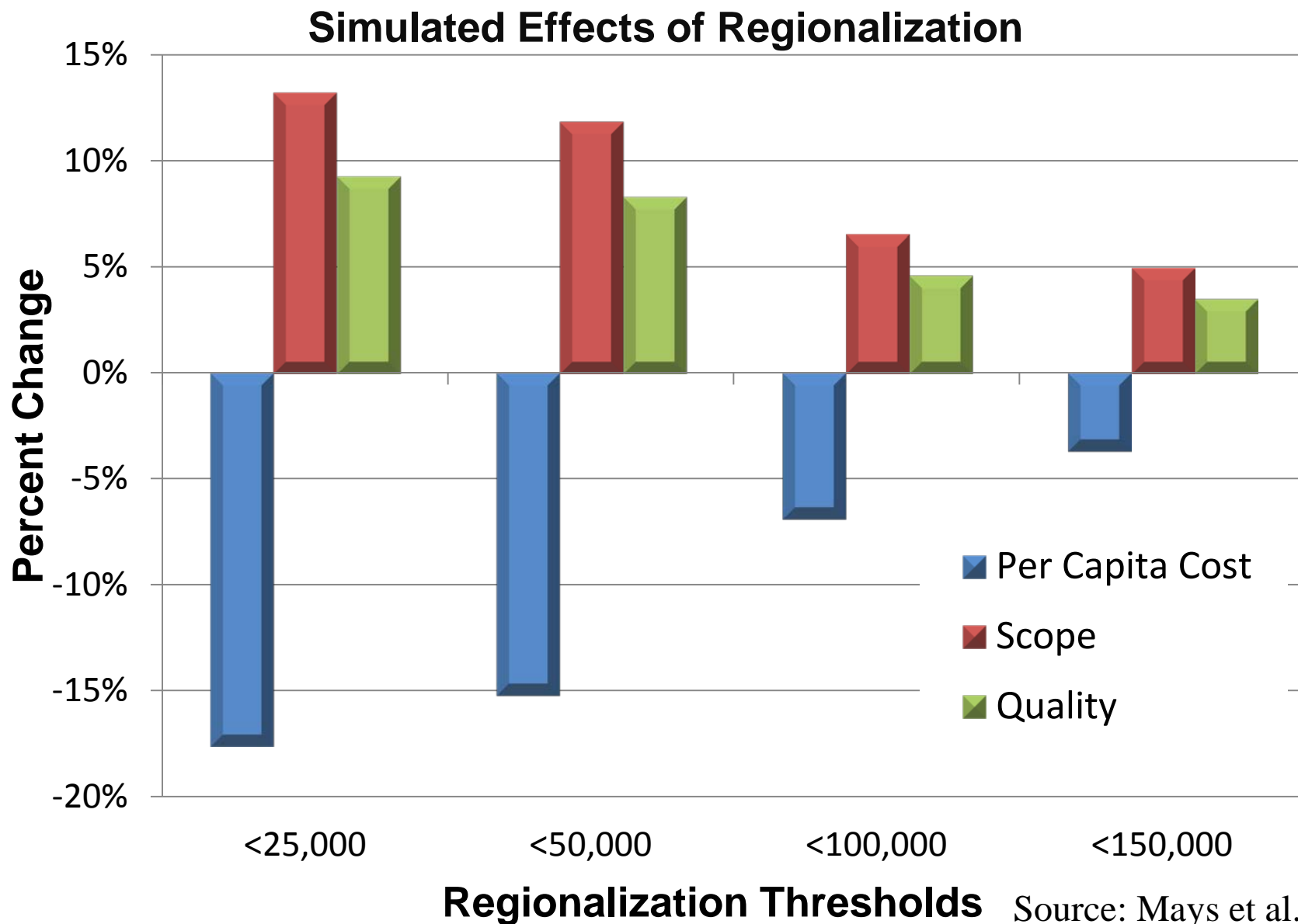


National Longitudinal Survey
of Public Health Systems

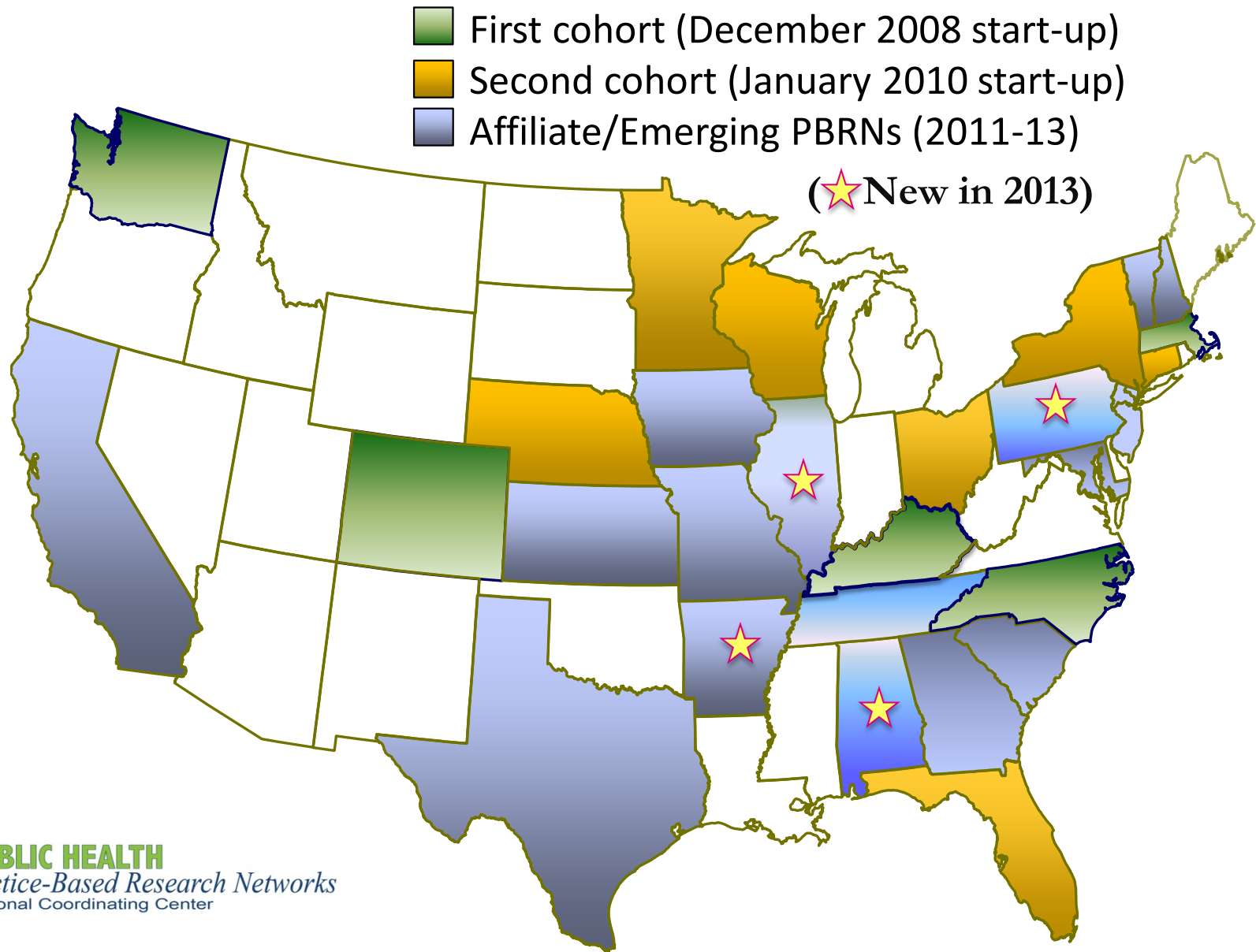


Source: Mays et al. 2012

Improving ROI: Using simulation for scenario analysis



Finding ROI Partners: Public Health PBRNs



Informing practice and policy decisions

- Align spending with preventable disease burden
- Identify and address inequities in resources
- Improve productivity and efficiency
- Demonstrate value: linking spending to outcomes
- Strengthen fiscal policy: financing mechanisms



For More Information



Supported by The Robert Wood Johnson Foundation

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