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Cost Estimation in Public Health Services & Systems Research

Glen P. Mays
University of Kentucky, glen.mays@cuanschutz.edu

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Preparedness Cost Estimation Expert Panel
U.S. Assistant Secretary for Planning and Evaluation (ASPE)
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UK UNIVERSITY OF KENTUCKY

PUBLIC HEALTH | SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Why we need to know?

"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 in public health

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 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.

Tools of the trade

- **Prospective "expected cost" methods (micro-costing)**
  - Vignettes
  - Surveys with staff and/or administrators
  - Delphi group processes
- **Concurrent "implementation cost" methods (micro-costing)**
  - Time studies with staff
  - Activity logs with staff
  - Direct observation
- **Retrospective "cost accounting" methods (micro-costing or gross-costing)**
  - Administrative records, financial reports, billing data
  - Decomposition, allocation or modeling
  - Surveys with staff and/or administrators

Drug Abuse Treatment Cost Analysis Program

SASCAP™

Substance Abuse Services Cost Analysis Program

CostIt Software © (Costing Interventions templates)

Examples: Program Costing

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
- Costing with electronic time logs

Felix, Mays et al. 2011
http://content.healthaffairs.org/content/30/7/1366.abstract

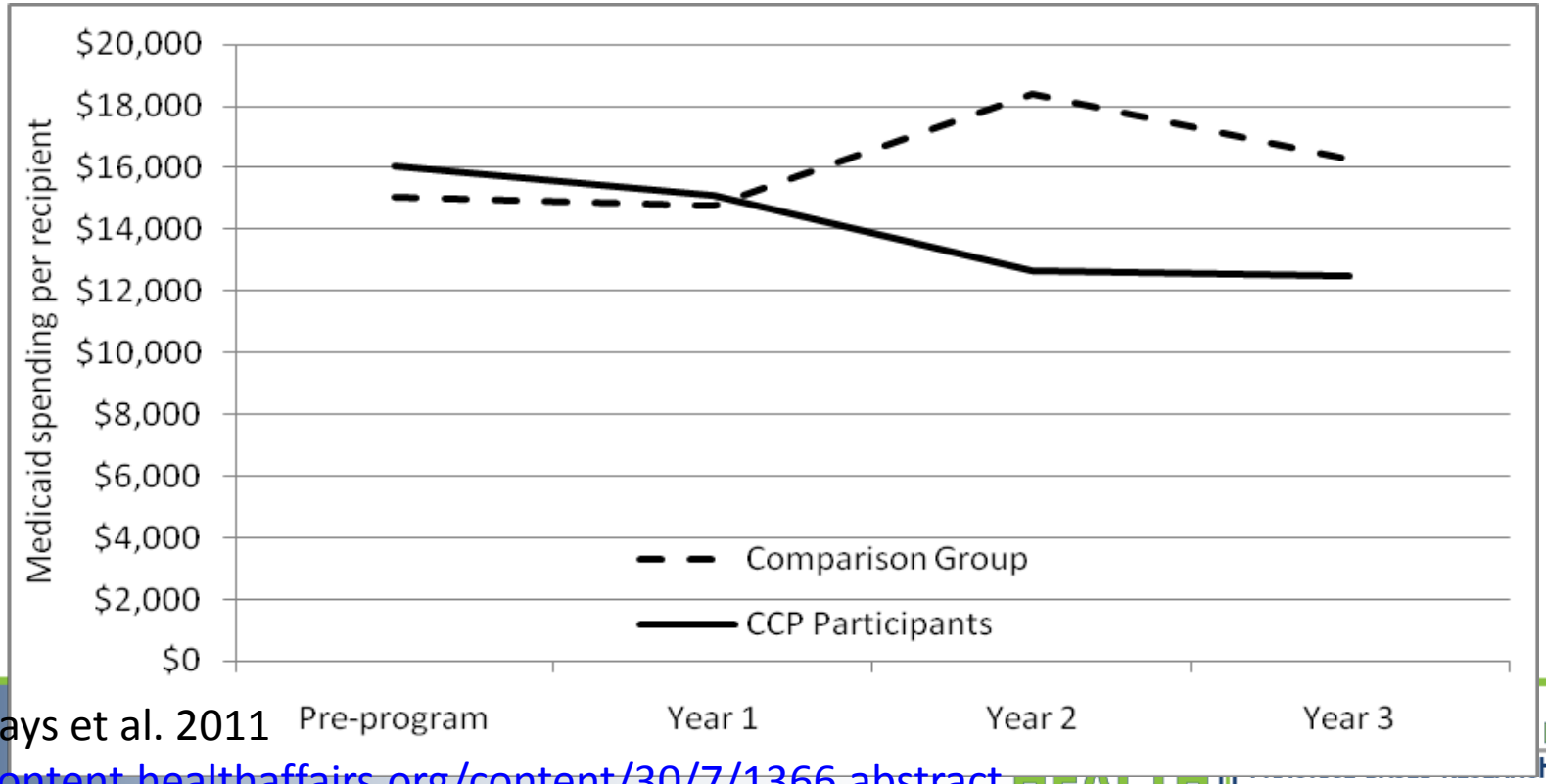
Examples: Program Costing

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



Felix, Mays et al. 2011
http://content.healthaffairs.org/content/30/7/1366.abstract

Examples: Program Costing

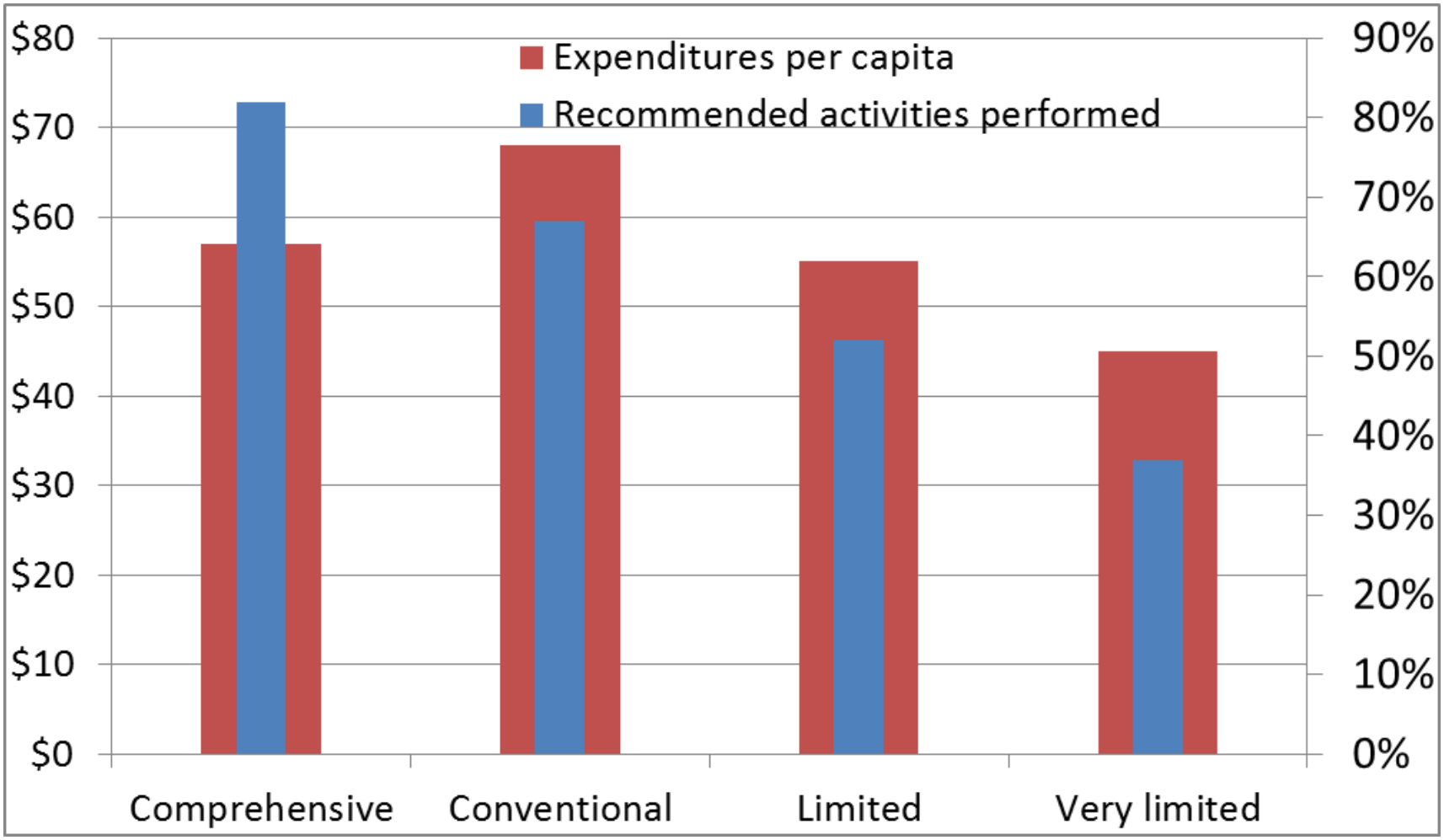
Three Year Aggregate Estimates

- Combined Medicaid spending reductions: $3.515 M
- Program implementation costs: $0.896 M
- Net savings: $2.629 M
- ROI: $2.92

Felix, Mays et al. 2011
http://content.healthaffairs.org/content/30/7/1366.abstract

Examples: Gross Costing

Performance and Efficiency in Local Public Health Delivery Systems



Mays et al. Milbank Quarterly 2010
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2888010/

Ongoing work: Public Health Delivery and Cost Studies (DACS)

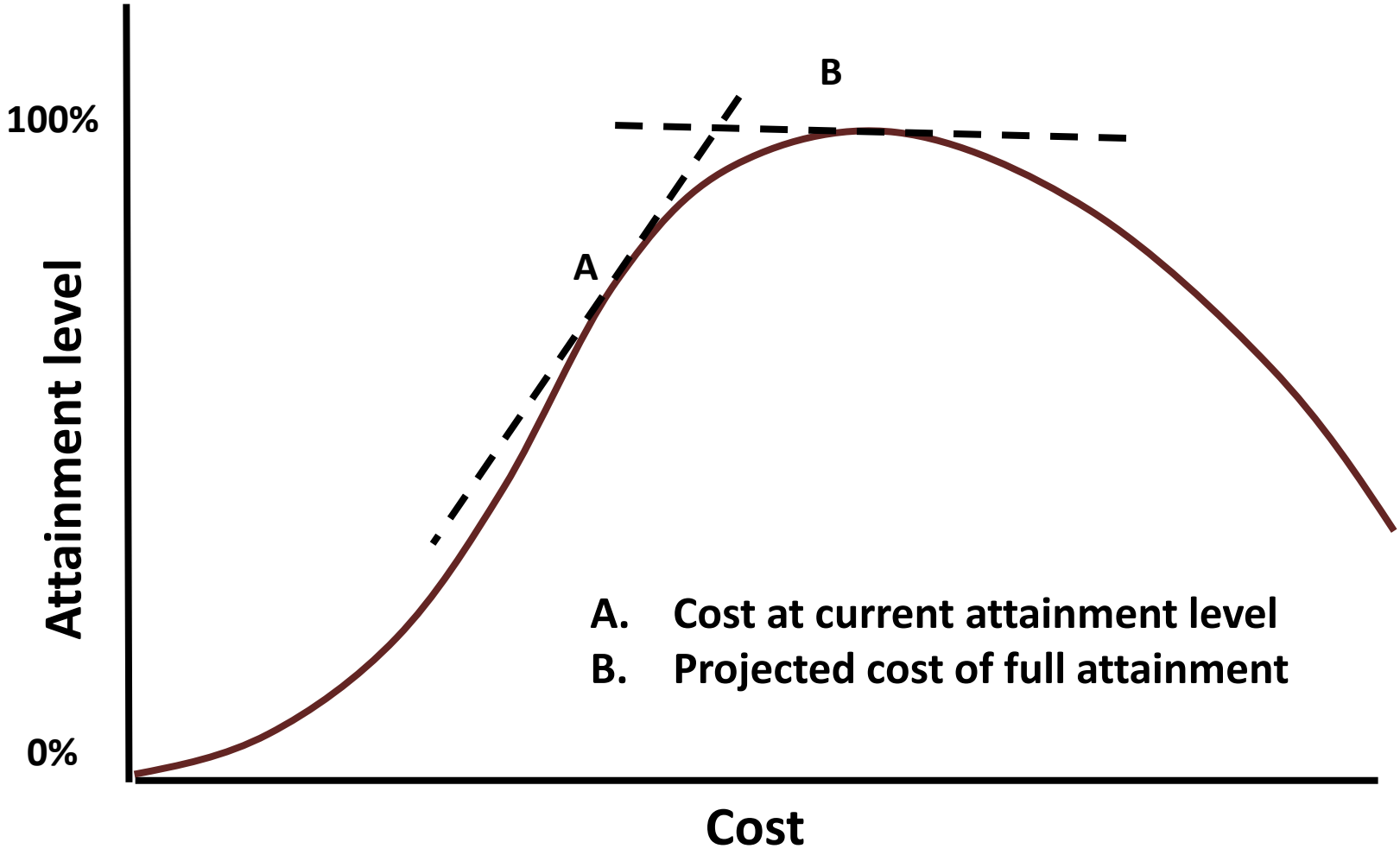
- Set of 11 ongoing studies conducted by PBRNs
- Focus on 1 or more public health services: communicable disease control, chronic disease prevention, environmental health protection
- Estimate costs and cost variation across multiple institutional and community settings
- Identify factors that drive variation in costs
- Use standardized approaches to cost measurement and cost analysis: DO, time logs, manager surveys

Ongoing work: Costing Foundational Public Health Services

- Prospective "expected cost" & retrospective "cost accounting" methods
- Sampling strategy to empirically estimate scaling
  - Stratify based on state-local administrative structure
  - Sample based on population strata and density (rural/urban)
- Vignette-based questions for each domain
  - Elicit quantity, FTE and labor cost, non-labor cost, indirect cost components
  - Elicit staff time allocation across service areas
  - Elicit expectations about current level of attainment of each service
- Use "fuzzy set" costing approach to deal with uncertainty
  - Upper and lower bounds, most likely values
  - Monte Carlo simulation

Estimating the Costs of Foundational Public Health Capabilities: A Recommended Methodology
Available at http://works.bepress.com/glen_mays/128/

Costing Foundational Services: Estimation of "projected" costs from current attainment ratings



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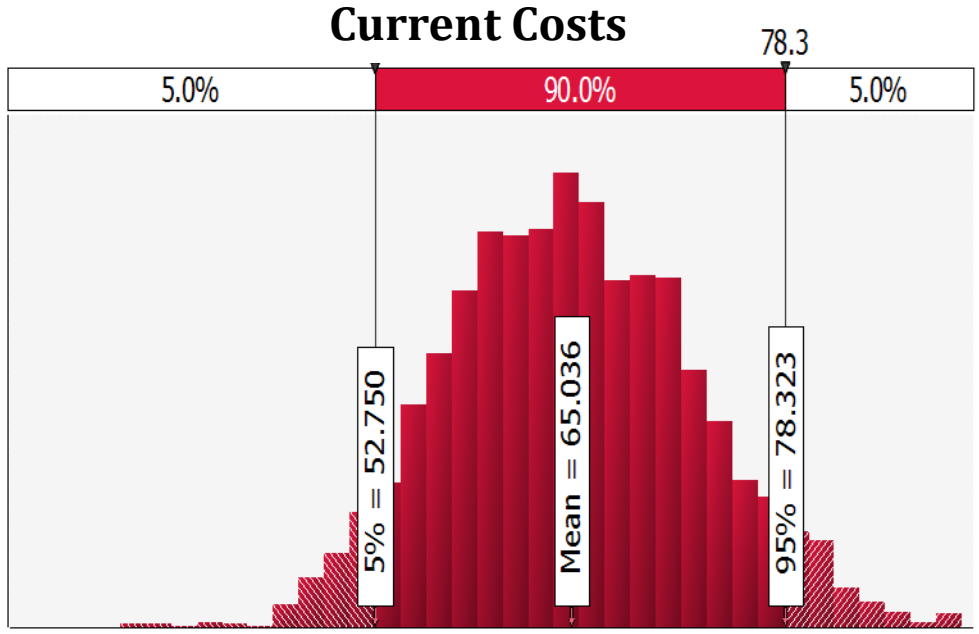
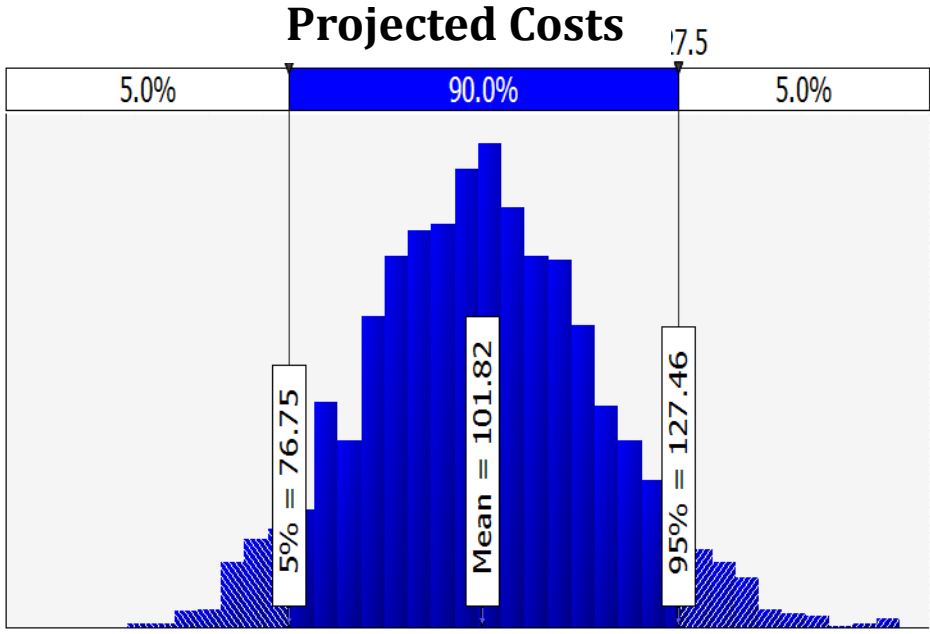
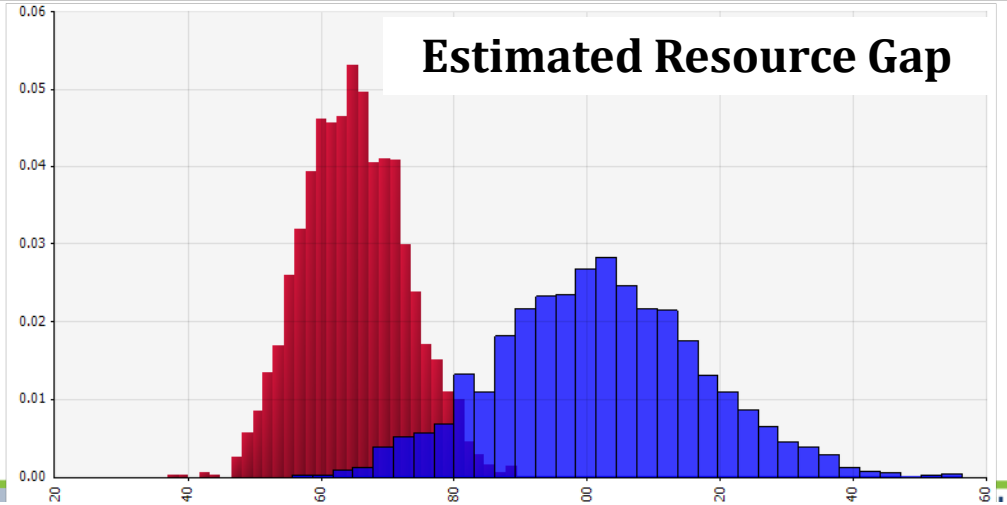
Costing Foundational Services: Current vs. Projected Costs with Simulated Uncertainty Parameters







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Transforming policy & practice with cost estimation

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

For More Information

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PRACTICE-BASED RESEARCH NETWORKS
National Coordinating Center

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Glen P. Mays, Ph.D., M.P.H.
glen.mays@uky.edu

Email: publichealthPBRN@uky.edu
Web: www.publichealthsystems.org
Journal: www.FrontiersinPHSSR.org
Archive: works.bepress.com/glen_mays
Blog: publichealtheconomics.org