

PHSSR Research-In-Progress Webinar
Wednesday, August 13, 2014

Quantifying the Value of Investing in Public Health

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**PUBLIC
HEALTH** || **SERVICES & SYSTEMS RESEARCH**
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NATIONAL COORDINATING CENTER

THE UNIVERSITY OF KENTUCKY COLLEGE OF PUBLIC HEALTH

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HEALTH** || **SERVICES & SYSTEMS RESEARCH**
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Agenda

Welcome: **C. B. Mamaril, PhD**, National Coordinating Center for PHSSR

Presenter: **Theresa Green, PhD, MBA, MS**, Director of Community Health Policy and Education, Center for Community Health, Rochester, NY

Commentary:

Michael Stoto, Ph.D., Health Systems Administration and Population Health, Georgetown University

Byron Kennedy, M.D., Ph.D., M.P.H., Director, Monroe County Health Department, Rochester, NY

Questions and Discussion

Presenter



Theresa Green, PhD, MBA, MS
Director of Community Health
Policy and Education, Center
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Rochester, NY

Quantifying the Value of Investing in Public Health

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Director of Community Health Policy and Education
Center for Community Health
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Purpose

To explore whether investing in public health system capacity provides value; and whether that value can be quantified in economic terms

Definitions



Value – substantial benefit per dollar spent

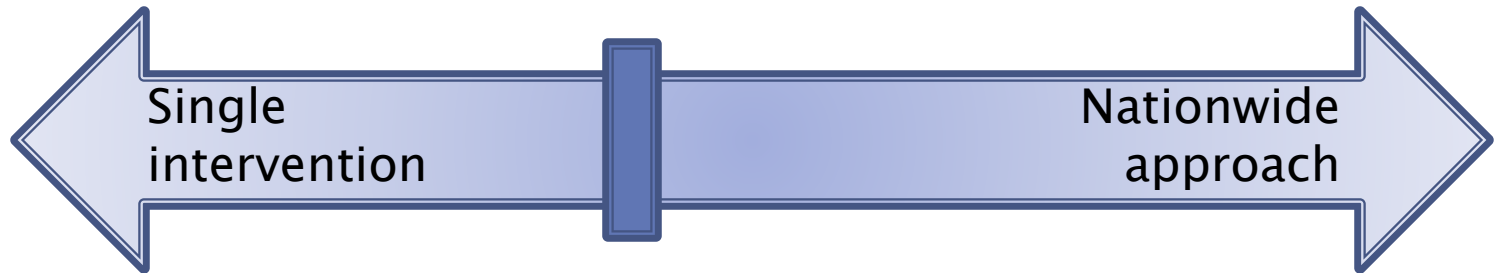
- ▶ **Cost *effectiveness*** – cost per unit of health gained, often measured in years of healthy life lived (QALY – quality adjusted life years)
- ▶ **Return on Investment (ROI)** – measure to evaluate the *efficiency* of an investment, $\text{Benefit-costs} / \text{costs} \times 100\%$ (money)

Public Health can Reduce Health Care Spending

- ▶ Mays, G., Smith, S. (2011). Evidence links increases in public health spending to declines in preventable deaths. *Health Affairs*, 30(8), 1585–1593.)
- ▶ Milstein, et al (2011). Why behavior and environmental interventions are needed to improve health at lower cost. *Health Affairs*, 30(5), 823–832.
- ▶ Trust for America's Health (2009). Prevention for a Healthier America: Investments in disease prevention yield significant savings, stronger communities. www.healthyamericans.org)
- ▶ Waidmann, T., Ormond, B., Bovbjerg, R. (2011). The role of prevention in bending the cost curve. www.healthpolicycenter.org)

Unique Contributions

- ▶ A mid-level approach, analyzing a single system of many interventions and programs within one public health organization
- ▶ Real observational financial data over time, as opposed to modeling or predictive analysis



Need for Assessing Value in Public Health Systems

- ▶ Spending supports health care delivery: 20% on physician/clinical services and 31% on hospital care, but *only 3% on public health*
- ▶ Policy leaders are requesting cost effectiveness analysis to inform funding decisions
- ▶ Prove that public health is a “great investment”, in language they can understand
- ▶ Public demands accountability
- ▶ Non-Profit Hospitals ACA Community Benefits requirements



No easy task...

- ▶ No clear expected outcomes
- ▶ No clear standards for cost/revenue capture
 - ROI for QI tool and PHUND\$
- ▶ Long time frame inherent in prevention – behavior change is difficult
- ▶ Effective prevention prolongs life which increases medical care use long-term
- ▶ Practitioners don't speak the language and often don't understand the methods

PHSSR National Research Agenda

Research questions from public health financing and economics:

- ▶ What measures provide the most valid and reliable indicators of the financial performance of public health agencies?
- ▶ How do investments in public health strategies influence the need for downstream spending on medical care and/or social services?

<http://www.publichealthsystems.org/research-agenda.aspx>

Center for Community Health

- ▶ University of Rochester Medical Center invested in the development of the Center in 2006 to help fulfill the mission of improving the community's health
- ▶ URMC invests financially each year – what is the return for this investment?

Making Rochester a Healthier Community



***Our mission:** To join forces with the community to eliminate health inequalities and improve health through research, education, and service.*

The Center for Community Health was established by the University of Rochester Medical Center to develop and expand academic-community health partnerships dedicated to improving the health of our community. It represents a **new model of institutional commitment to community health that focuses on prevention.**

» [Programs and Services](#)

» [Community Partnerships](#)

» [Health Policy](#)

» [UR Employee Free Health Programs](#)

» [Research](#)

» [Education](#)

Research Question

- ▶ Does the University of Rochester's investment in the development and maintenance of the Center for Community Health, a partnership extension of the local public health system, provide a value benefit either financially or in the health of the community?



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Methods

This study is a mixed-methods, retrospective analysis of the value change associated with the development and maintenance of Center for Community Health (CCH), a unique naturally occurring experiment.

- ▶ Financial data was collected from the accountant and financial officer for FY2006–FY2012
- ▶ CCH Programs and services were categorized in 10 Essential Services by the researcher and then validated in interview with managers/directors
- ▶ Case study conducted to measure health outcomes

Study Design

Research Question: Is there value added?

Context: Value to who?
Added from what?
During what time frame?
Define the value
Define the measures

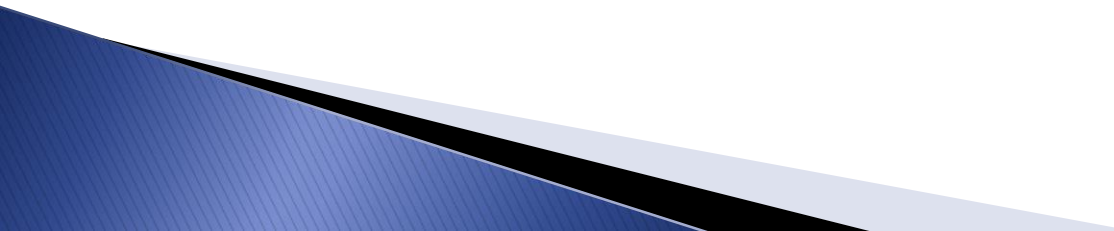
Measure the Value

Tell the story putting the value measures
within context in simple business language

FRAMEWORK

QUANTITATIVE
& QUALITATIVE

Framework for Assessing Value in Public Health System Analysis

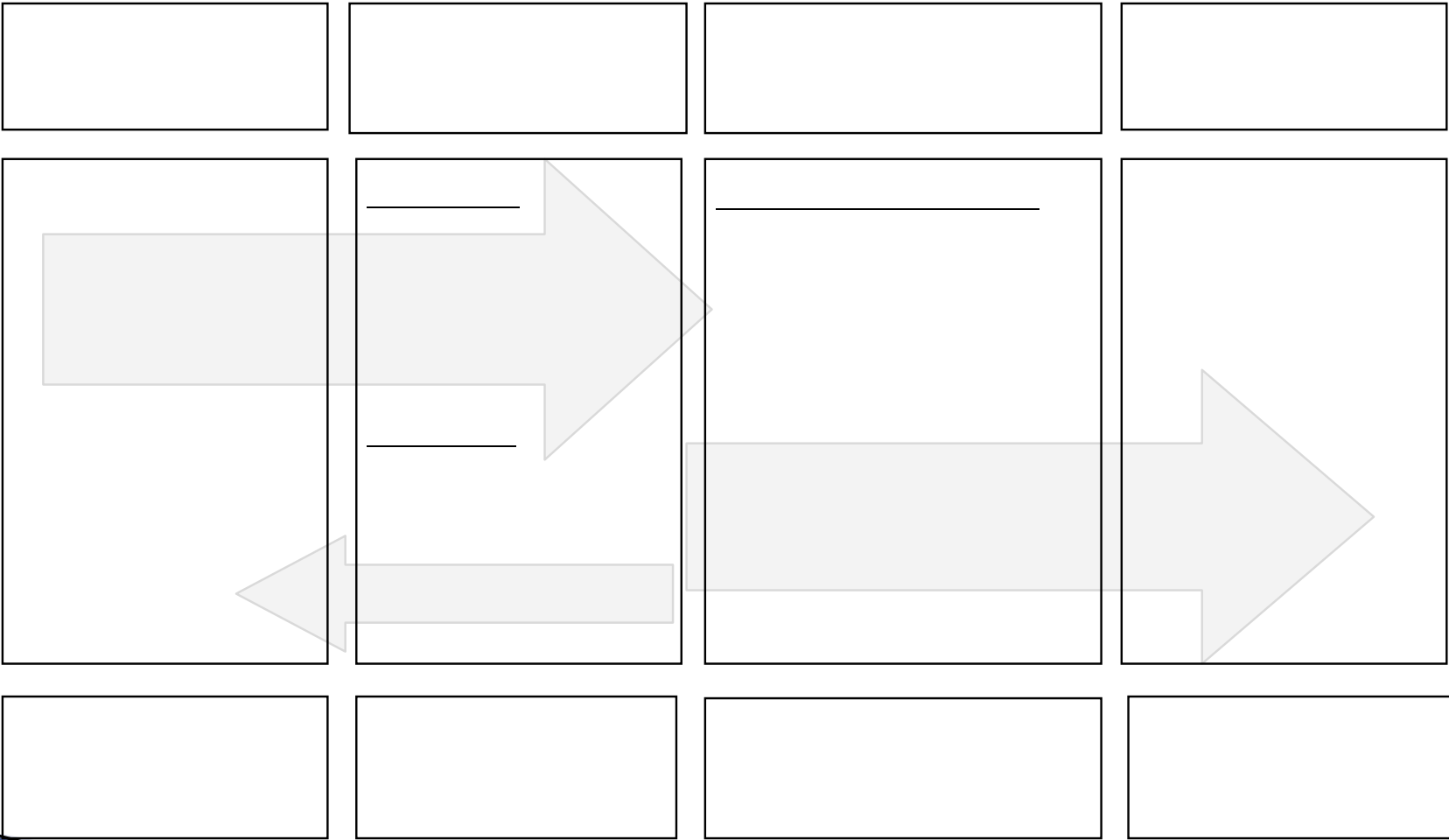
1. Define the analysis as prospective/retrospective, set a time frame
 2. Define the decision makers (perspective) who will use the results
 3. List outcomes of value to decision makers, financial and/or health
 4. Develop a logic model or system map that ties the system change or investment to the valued results including intermediate steps
 5. Define measures for outcomes
 6. Collect data for each measure and assign monetary values to health outcomes where possible
 7. Pick appropriate economic method for analysis and calculate value
 8. Write the story for decision makers using the outcomes of value
- 

Defining the Context :Steps 1,2 & 3

- ▶ Retrospective analysis of the Center for Community Health (CCH) and spans the time from May 2006 through June 2012, from the perspective of the decision-makers, leaders of URMC
- ▶ Outcomes of value: community health improvement, financial solvency



Logic Model for URMC Investment in Center for Community Health

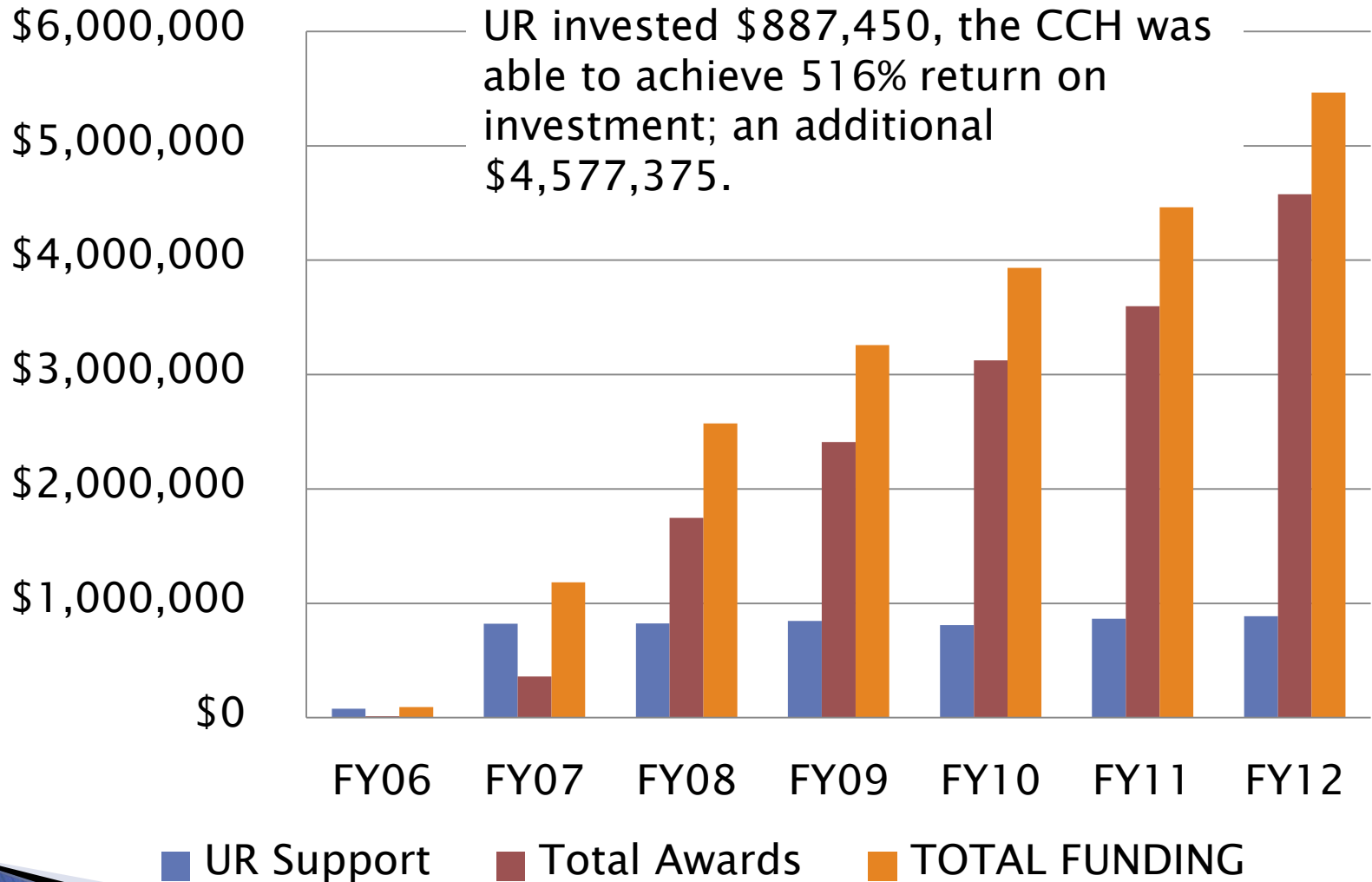


Methods: Quantitative Analysis

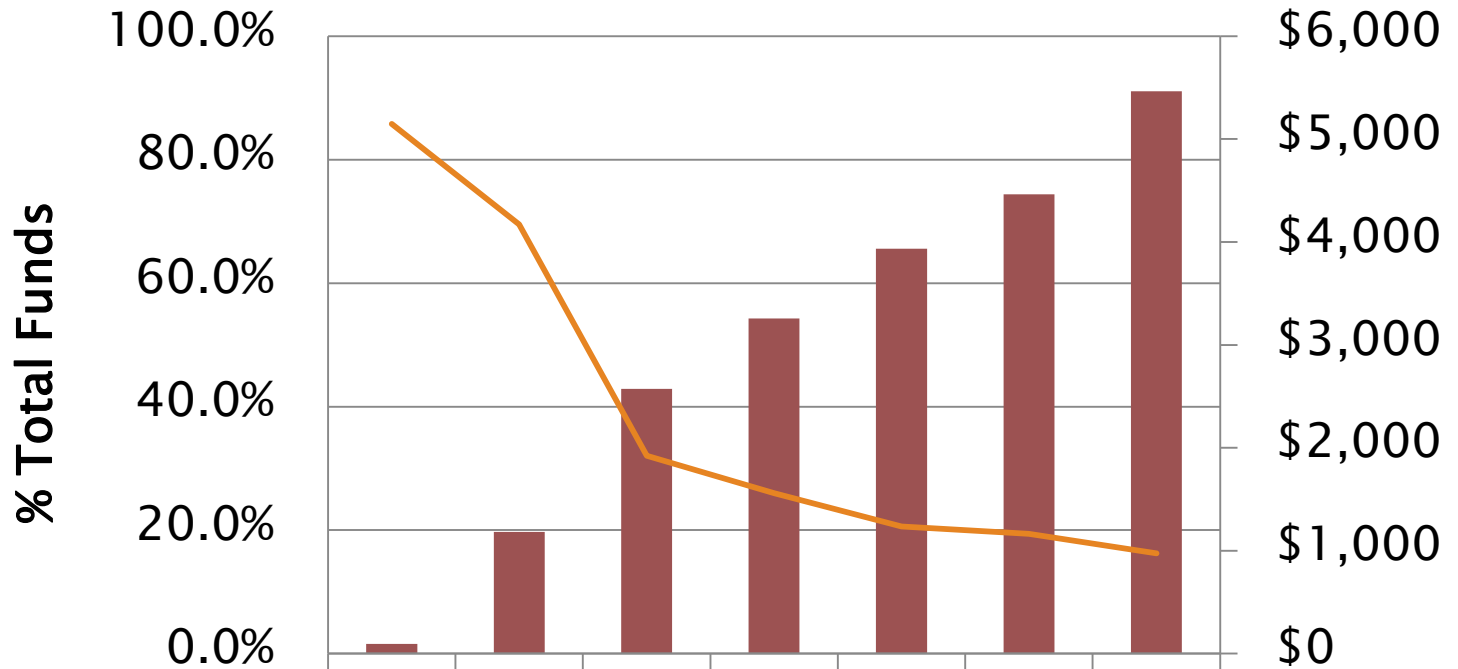
- ▶ Data was collected from the finance staff concerning revenue (internal and extramural), 'indirects', and expenses
- ▶ Time series graphs were generated for revenue and number of employees
- ▶ Calculations were made for
 - Ratio of (UR support/total budget) x 100%
 - Ratio of (indirect cost collected/UR support) x 100%
 - Return on Investment for the BPAP program

Annual Funding for the CCH

Total Funding FY2012 = \$5,464,825
UR invested \$887,450, the CCH was
able to achieve 516% return on
investment; an additional
\$4,577,375.



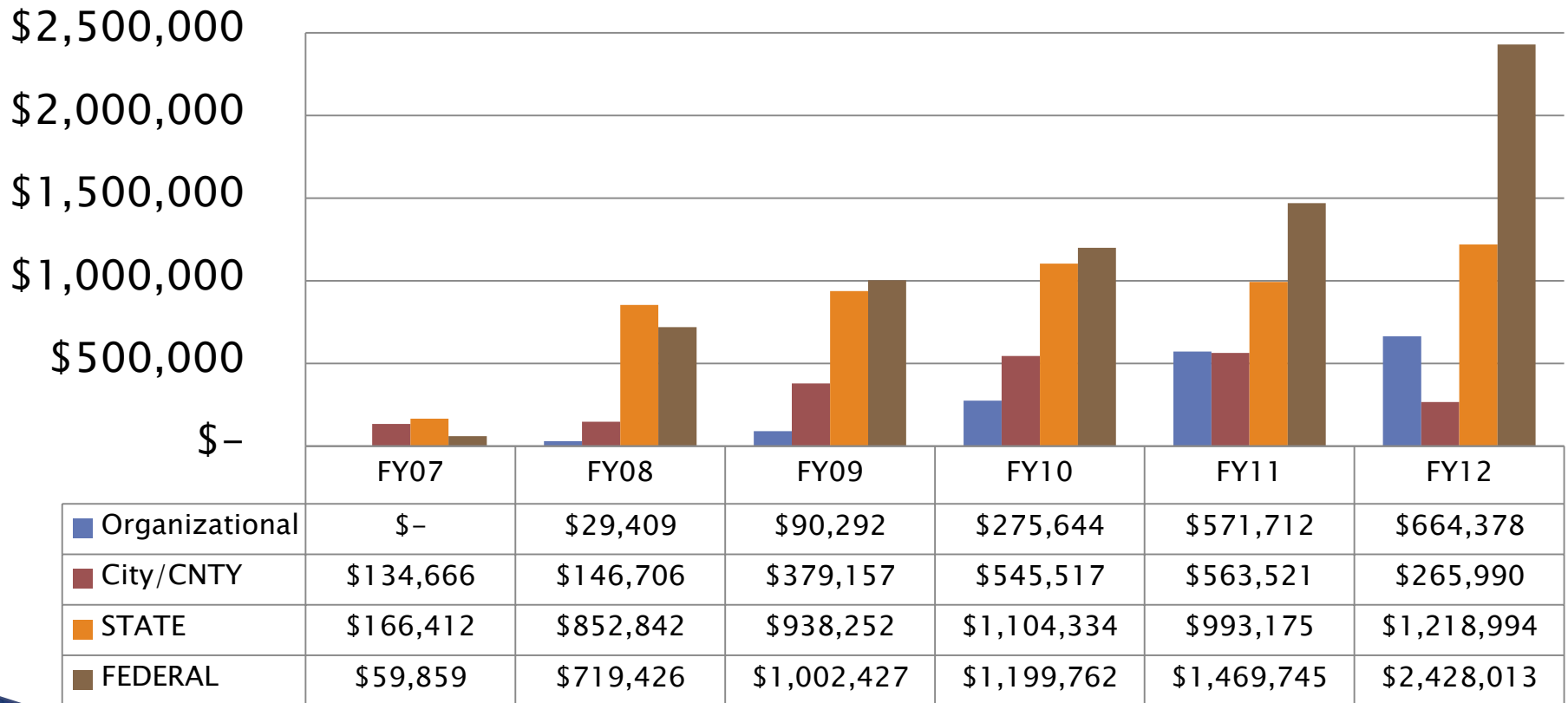
Investment as a % of Total Funds



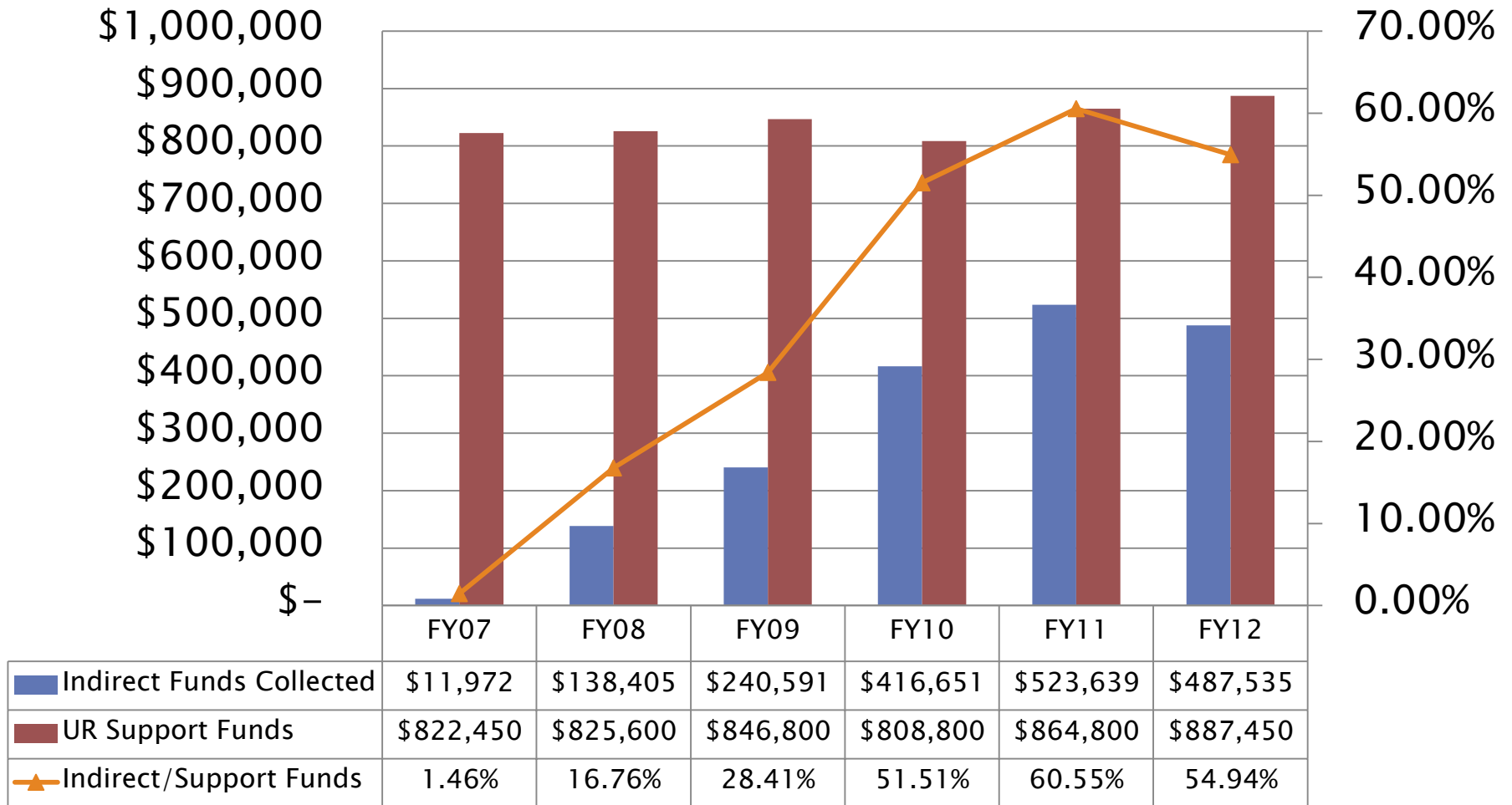
■ TOTAL FUNDING (\$1000's)	\$93	\$1,183	\$2,574	\$3,257	\$3,934	\$4,463	5,465
— Investment as % of Total Funds	85.8%	69.5%	32.1%	26.0%	20.6%	19.4%	16.2%

Sources of Funding

Funding by Source Category

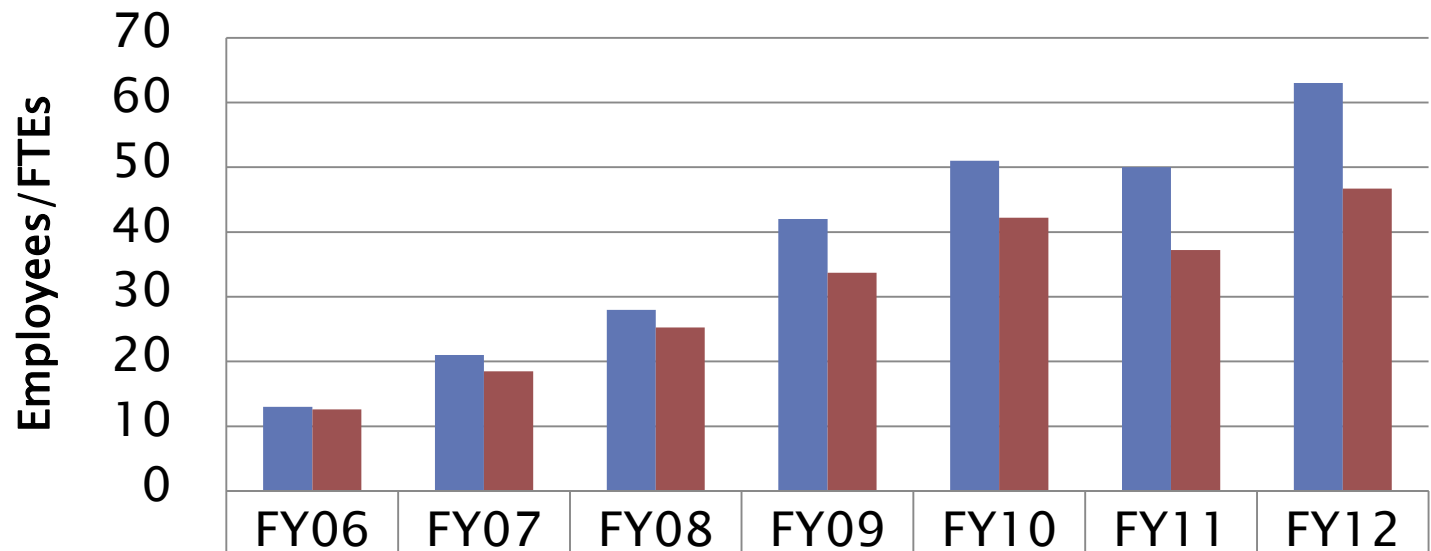


Indirect Costs



CCH Employees

Center for Community Health Faculty/Staff



■ Total number of Employees	13	21	28	42	51	50	63
■ Total #FTEs	12.6	18.5	25.25	33.69	42.2	37.2	46.7

Summary of Quantitative Assessment

- ▶ The financial contribution from UR has been consistent from FY07–FY12, and has yielding a 516% return on investment which has been used to grow community health capacity through increased extramural programs and services and increased staff.

Services Provided at CCH

Communicable Diseases Surveillance and Prevention	Community Engagement
Community Health Education	Blood Pressure Advocacy Program
Breast Health Awareness Project	Cancer Services Program*
Clinical and Translational Science Institute	Community Health Policy
Community Transformation Grant (HEART)	Diabetes Prevention Program
Got Health!	Healthy Hero Outreach Program
Healthy Living Center	Healthy Living Program
Practice Based Research Network	Rochester Walks
Teen Health and Success Partnership	Public Health Research

Methods: Qualitative Analysis

Open-ended interviews were conducted with fourteen service leaders (managers/directors). Interview script included the following:

1. What services or programs do you provide that might be considered part of public health system delivery
2. After reviewing the 10 Essential Services (listed), where do you think your programs or services fit? Name as many as you think are appropriate, and it may be that your services do not match any of the public health 10 Essential Services.
3. In your opinion, does your service or program area add financial value to the University of Rochester? Please Explain.

Community Health Capacity

Essential Service	Examples
1. Monitor health status <i>6 contributions</i>	Healthy Living Center analyze the data from the employee biometric screenings to monitor the health status of the University employees and plan programs based on that assessment.
2. Diagnose and investigate <i>5 contributions</i>	Communicable Disease Surveillance investigates hospital acquired infections and propose interventions to reduces incidence
3. Inform, educate and empower <i>13 contributions</i>	The Got Health! series provides basic health information to community members through interactive lectures in community settings
4. Mobilize partnerships <i>17 contributions</i>	Community Engagement facilitates the relationships between and within 26 coalitions and with URMC through years of collaboration and mutual respect.
5. Develop policies <i>10 contributions</i>	HEART smoking-free clean indoor air policy in public outdoor space, college campuses and multi-unit housing was supported and some initiated.

Essential Services	Examples
6. Enforce laws <i>0 contributions</i>	
7. Link to health services <i>13 contributions</i>	Cancer Services provides screening to uninsured by removing the cost barriers and facilitating appointments.
8. Assure competent workforce <i>12 contributions</i>	CH Education trains medical students on community health and the importance of addressing social and behavioral determinants of health and directs the Community Health Improvement Course for experiential learning. Public Health Grand Rounds
9. Evaluate effectiveness, quality <i>10 contributions</i>	TEEN HSP has a robust evaluation system that tracks student success as compared to students not in the Hillside Work-Scholar Program as well as program effectiveness.
10. Research <i>10 contributions</i>	Diabetes Prevention Program is conducting extensive research to determine the most effective setting for successful implementation and comparison with Healthy Living Program

Summary of Qualitative Assessment

- ▶ According to the information provided through interviews with Directors and Managers, the Center for Community Health contributes substantially to the 10 Essential Public Health Services and adds value to the University of Rochester

Health Impacts - Case Study

Blood Pressure Advocacy Program



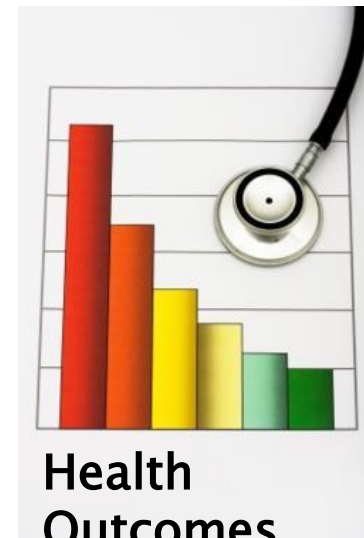
INVESTMENT



CAPACITY



BPAP



\$850,000
annually



\$5.5 million FY12
\$488,000 indirect
Increased staff
Increased services

One of many programs
\$300,000 award
+ indirects
Trained 13
Hired 5 staff
Engaged 4 clinics
Contacted 3,000
patients
232 patients in BPAP



Blood Pressure
improvements
Reduced risk of
stroke and MI =
\$545,000
averted

Health Impacts – Case Study

Blood Pressure Advocacy Program

Costs Averted in 232 patients improving from 150/85 to 132/78

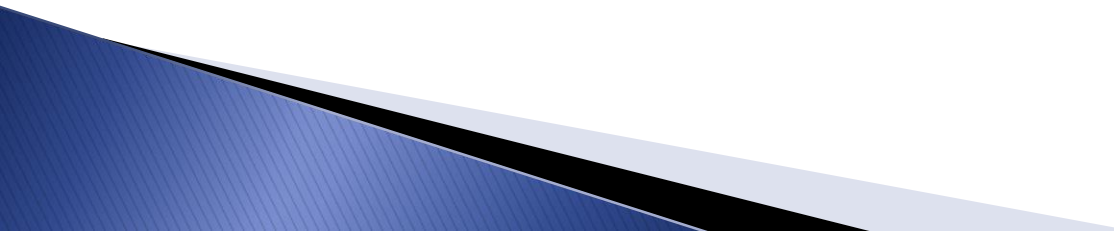
	Myocardial Infarction (MI)	Stroke	General CVD
Change in Relative Risk within 10 years	2%	2.5%	5%
Cases Averted	4.64	5.8	11.6
36 month post-event attributable excess cost per event	\$87,524 non-fatal MI	\$23,881 (ischemic) \$85,490 (hemorrhagic)	\$42,986 Non-surgical angina
Total cost averted by BPAP Program	\$406,111	\$138,510	\$498,638

\$545,000

Conclusion

- ▶ It is clear from this research that the Center for Community Health adds value to the University of Rochester and that there is a valuable return on the investment that UR makes in the CCH annually. It is also clear that the value added can be quantified in financial growth and community health capacity, as well as health outcomes on a program by program basis

Limitations

- ▶ Not a randomized–controlled study
 - ▶ Causation is difficult/impossible
 - ▶ No measure for improved community health
 - ▶ Inconsistencies and methodological difficulties in measuring award funding over time
 - ▶ Financial returns go beyond the scope of the observations – and who reaps the benefits
 - ▶ Unique nature of University of Rochester
- 

Recommendations

- ▶ Value cannot always be measured in profits solely, but rather in the additional work that those profits can fund
- ▶ As public health systems grow and new partners are added, it is important to match partners that have great capacity to complete essential services
- ▶ A strong business case for an intervention is a powerful advocacy tool for funding decisions
- ▶ Standardized outcome measures are needed in the study of public health systems

The fact that there are many uncertainties should not stop public health practitioners and researchers from quantifying the value of the work they do

Acknowledgements

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 - Kieran Fogarty, PhD, Chair
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 - Robert Wertkin, DSW
WMU, Social Work
 - Mark L. Messonnier, PhD
Center for Disease Control and Prevention (CDC)
 - Ann Dozier, PhD
University of Rochester, Dept of Public Health Sciences
- ▶ Expert Advisor – Dr. Nana Bennett, MD, MPH Director Center for Community Health



Thank you!



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Commentary

Michael Stoto, Ph.D., Health Systems Administration
and Population Health, Georgetown University

Byron Kennedy, M.D., Ph.D., M.P.H., Director, Monroe
County Health Department, Rochester, NY

Questions and Discussion

Future Webinars – PHSSR Research in Progress

All webinars from 12-1 pm, ET

Aug 27 – Priorities in rural health: Cost-effectiveness analysis of fungal meningitis outbreak in New River Health District

Kaja Abbas, PhD, MPH, Dep't. of Population Health Sciences, Virginia Polytechnic Institute and State University

Commentary: Kerry Redican, PhD, MPH, Virginia Tech Carilion School of Medicine and Research Institute and

Molly O'Dell, MD, MFA, Director, New River Health District, Virginia Department of Health

Future Webinars – PHSSR Research in Progress

All webinars from 12-1 pm, ET

Sept 10 – Improving HIV/STD Partner Services Performance in New York State: A Performance Management Approach

Britney Johnson, MPH, AIDS Institute/Office of Public Health Practice, New York State Department of Health

*Commentary: Sylvia Pirani, MPH, Office of Local Health Services, NYS Dept. of Health
James Tesoriero, PhD, HIV Prevention Director, NYS Dept. of Health*

Sept 24 - State Health Department Foodborne Disease Outbreak Reporting

Fanta Purayidathil, PhD, Health Economics and Outcomes Research, Boehringer Ingleheim

Commentary: Jennifer Ibrahim, PhD, MPH, Dept. of Public Health, Temple University

Oct 8 – Variations in the costs of delivering public health services: An analysis of local health departments in Florida

Simone Singh, PhD, University of Michigan School of Public Health

Commentary: Patrick Bernet, PhD, Florida Atlantic University

Future Webinars – PHSSR Research in Progress

All webinars from 12-1 pm, ET

Oct 22 – Relationship Between Public Health Workforce Competency, Provision of Services, and Health Outcomes in Tennessee

Robin Pendley, DrPH, Health Services Management and Policy, College of Public Health, East Tennessee State University

Nov 12 – Trends and Characteristics of the State and Local Public Health Workforce

Angela J. Beck, PhD, MPH, Associate Director, Center of Excellence in Public Health Workforce Studies, University of Michigan

Dec 10 – Integrating Public Health and Healthcare: Lessons from One Urban County

Erik L. Carlton, DrPH, Health Systems Management and Policy, School of Public Health, University of Memphis

Commentary: Paul Erwin, MD, DrPH, Dept. of Public Health, University of Tennessee

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