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

Financing and Service Delivery Integration for Mental Illness and Substance Abuse

Research In Progress Webinar

Wednesday, November 9, 2016 *12:00-1:00pm ET/ 9:00-10:00am PT*

Funded by the Robert Wood Johnson Foundation

UK UNIVERSITY OF KENTUCKY
Center for Public Health Systems and Services Research

Agenda

Welcome: **Glen Mays, PhD, MPH,** Director, RWJF Systems for Action National Coordinating Center, U. Kentucky College of Public Health

Financing and Service Delivery Integration for Mental Illness and Substance Abuse

Presenters: **William J. Riley, PhD,** School for Science of Health Care Delivery *William.J.Riley@asu.edu*

Michael S. Shafer, PhD, School of Criminology and Criminal Justice *Michael.Shafer@asu.edu*

George C. Runger, PhD, School of Computing, Informatics, and Decision Systems Engineering *George.Runger@asu.edu*, Arizona State University

Commentary: **Steven Teutsch, MD, MPH,** S4A National Advisory Committee member; Former Chief Science Officer, Los Angeles County Department of Public Health

Questions and Discussion

RWJF Systems for Action Program

to build a national Culture of Health

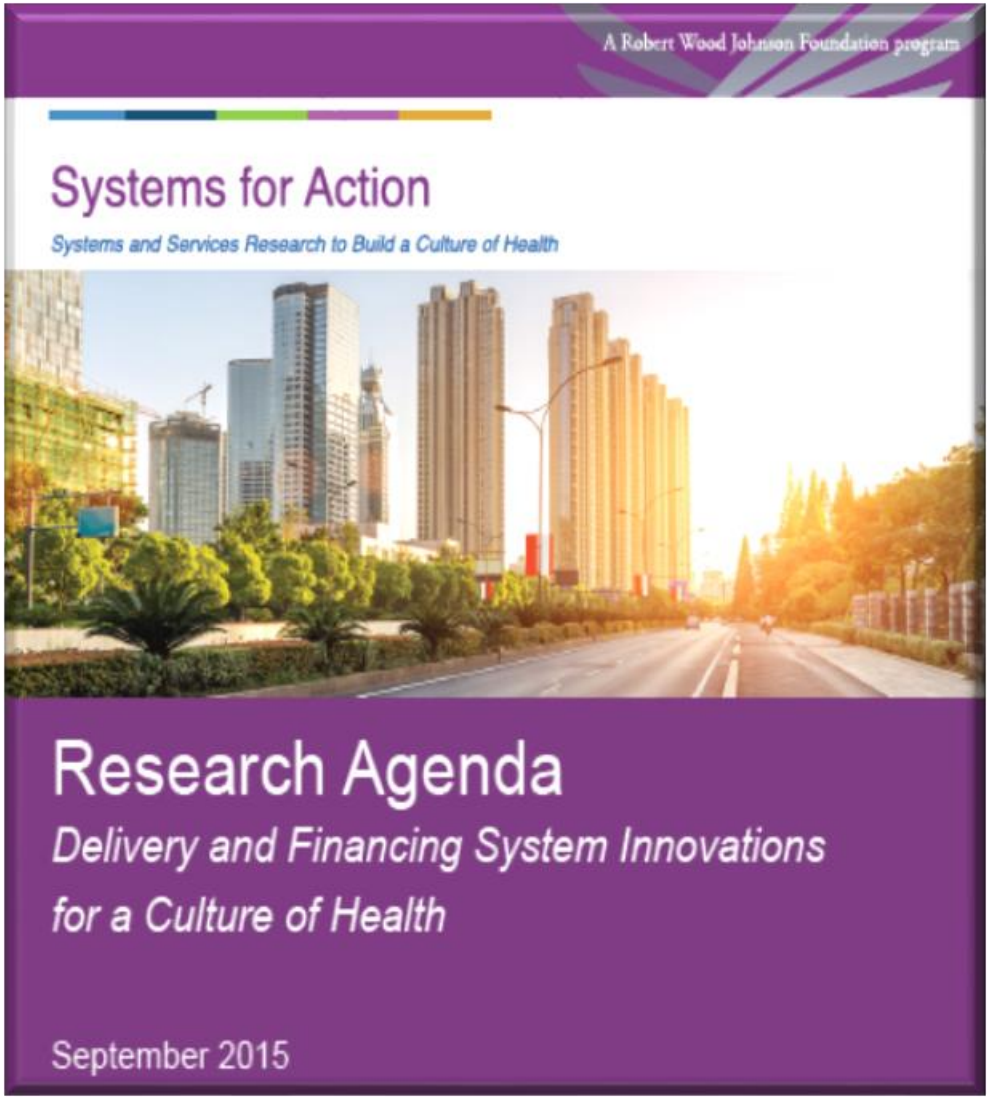
http://www.systemsforaction.org/

Overview

Mission: Widen the lens beyond health care & public health systems

Rigorous research to identify novel mechanisms for aligning delivery and financing systems in ***medical care***, ***public health***, *and* ***social & community services*** in ways that improve ***health*** and ***wellbeing,*** achieve ***efficiencies*** in resource use, and reduce ***inequities***.

www.systemsforaction.org



Wide lens: implicated sectors

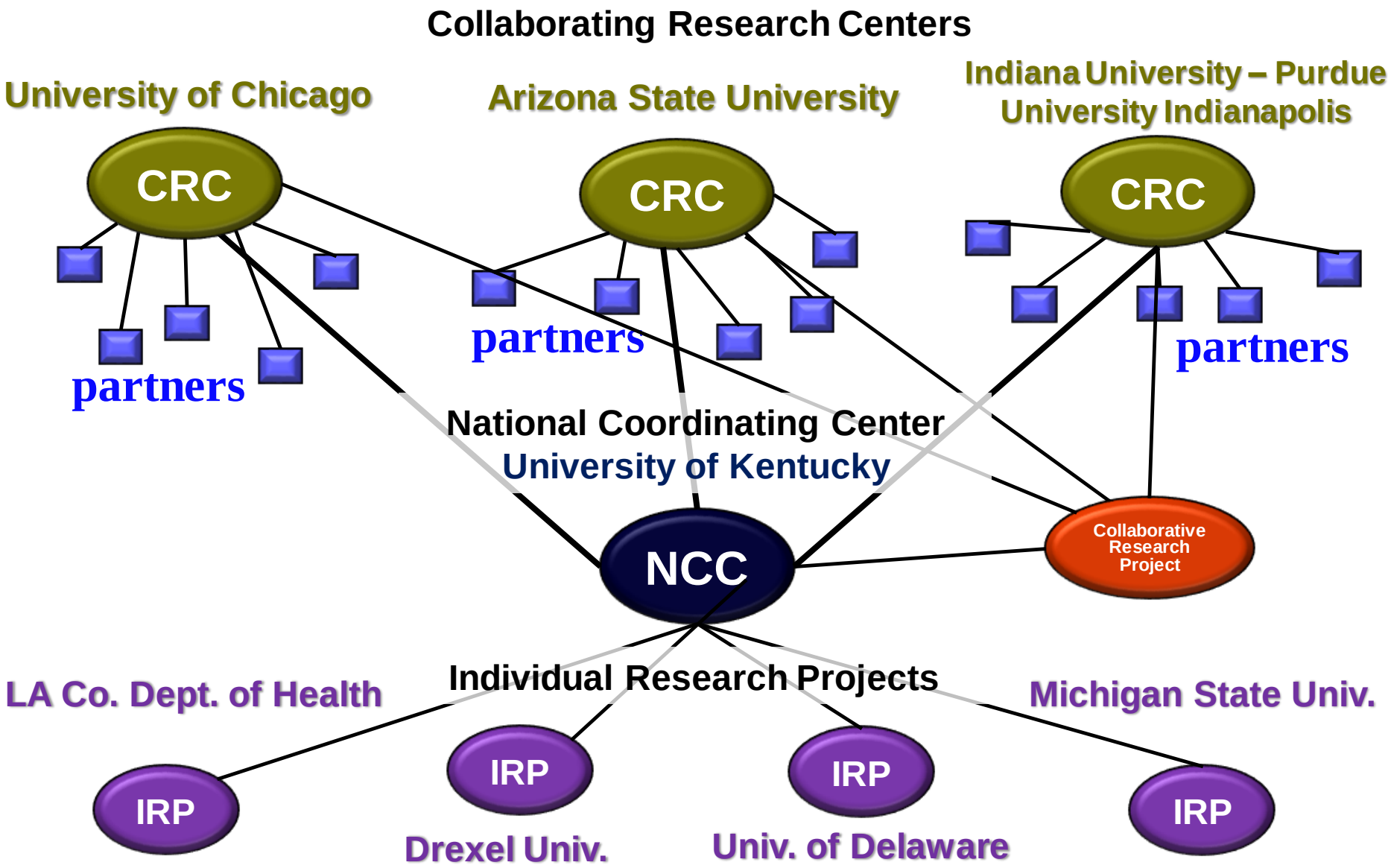
- Public health
- Medical care: ACOs, PCMCs, AHCs
- Income support
- Nutrition and food security
- Education and workforce development
- Housing
- Transportation
- Criminal justice
- Child and family services
- Community development and finance

SNAP
Putting Healthy Food Within Reach
USDA Supplemental Nutrition Assistance Program

Study novel mechanisms for aligning systems and services across sectors

- Innovative alliances and partnerships
- Inter-governmental and public-private ventures
- New financing and payment arrangements
- Incentives for individuals, organizations & communities
- Governance and decision-making structures
- Information exchange and decision support
- New technology: m-health, tele-health
- Community engagement, public values and preferences
- Innovative workforce and staffing models
- Cross-sector planning and priority-setting

S4A Program Structure



Collaborating Research Centers

- ***University of Chicago:*** Randomized trial of a Comprehensive Care, Community and Culture program
- ***Arizona State University:*** Analysis of medical, mental health, and criminal justice system interactions for persons with behavioral health disorders
- ***IUPUI:*** Evaluating integration and decision support strategies for a community-based safety net health care and public health system
- ***University of Kentucky:*** Measuring multi-sector contributions to public health services and population health outcomes.

Individual Research Projects

- ***Michigan State University:*** Randomized trial of Community Complex Care Response Team
- ***Los Angeles Department of Health:*** Evaluation of Housing for Health initiative, which provides permanent housing and supportive services for vulnerable populations
- ***University of Delaware:*** Randomized trial to test the efficacy of using the team approach to leverage different financing systems and services
- ***Drexel University:*** Evaluation of Building Wealth and Health Network within anti-poverty programming

Presenters

William J. Riley, PhD
Professor, School for Science of Health Care Delivery
College of Health Solutions
Director, National Safety Net Advancement Center
William.J.Riley@asu.edu

Michael S. Shafer, PhD
Professor, School of Social Work
Director, Center for Applied Behavioral Health Policy
Affiliate Professor, School of Criminology & Criminal Justice, College of Public Services & Community Solutions *Michael.Shafer@asu.edu*

George C. Runger, PhD
Chair, Department of Biomedical Informatics
Professor, School of Computing, Informatics, and Decision Systems Engineering *George.Runger@asu.edu*

Arizona State University

Action Research Center for a Culture of Health (ARCCOH): Financing and Service Delivery Integration

William Riley, PhD **Michael Shafer, PhD** **George Runger, PhD**

Arizona State University
November 9th, 2016

RWJF Vision
To Build Culture of Health

- Care fragmentation and conflicting financing systems are major barrier.
- The failure of integration for severe mental illness and substance abuse was selected for our study.
- Achieving lasting change will require different sectors to come together in innovative ways to solve interconnected problems.

PROJECT GOALS

Achieve better alignment among multi-sectors in Maricopa county to improve care and efficiency for high risk behavioral health populations.

Use advanced data integration, data modeling and visualization techniques to accelerate consensus on the policy-making decision processes.

FOUR AIMS

AIM 1: Create an *INTEGRATION QUOTIENT* for every individual enrolled in the Regional Behavioral Health Authority (RBHA) network as Serious Mental Illness (SMI), General Mental Health Substance Abuse (GMHSA), or children.

The *INTEGRATION QUOTIENT* would express the total Medicaid spend on an individual, the relative proportion of that spend on behavioral health versus physical health, and the composition of service procedures.

FOUR AIMS

AIM 2: Develop predictive models of psychiatric and general hospitalization based upon behavioral health and physical health utilization patterns observed prior to and following periods of hospitalization for readmission

- ✓ Focused analysis on high cost/high utilizers
- ✓ Analysis of pre- and post-hospitalization service patterns

FOUR AIMS

AIM 3: Develop predictive models of criminal justice (CJ) systems based upon behavioral health and physical health utilization patterns observed prior to, during, and following periods of CJ system involvement.

- ✓ Focused analysis of frequent users
- ✓ Analysis of pre- and post-booking service patterns
- ✓ Analysis of concurrent service patterns (probation, behavioral health, & physical health)

FOUR AIMS

AIM 4: Transform our analyses into visualizations that facilitate actionable dialogue and decision-making between multi-sector policy-makers that helps establish a culture of health for Medicaid enrolled individuals experiencing behavioral health issues.

The Context

Individuals identified as experiencing a serious mental illness, a general mental health and/or substance use disorder, and children experience mental health issues.

Frequent and recurrent involvement in the criminal justice and first response systems, frequent use of emergency room services and homeless system resources.

State Medicaid Agency (AHCCCS) transitioning from 'carve-out' to 'carve-in' and greater integration of physical and behavioral health.

Multi-Sector Stakeholders

State/County Health Policy & Funding Entities

Psychiatric/Mental health Providers

Health Plans

Hospitals

Psychiatric Crisis Response Providers

Law Enforcement (Police & Sheriff's Department

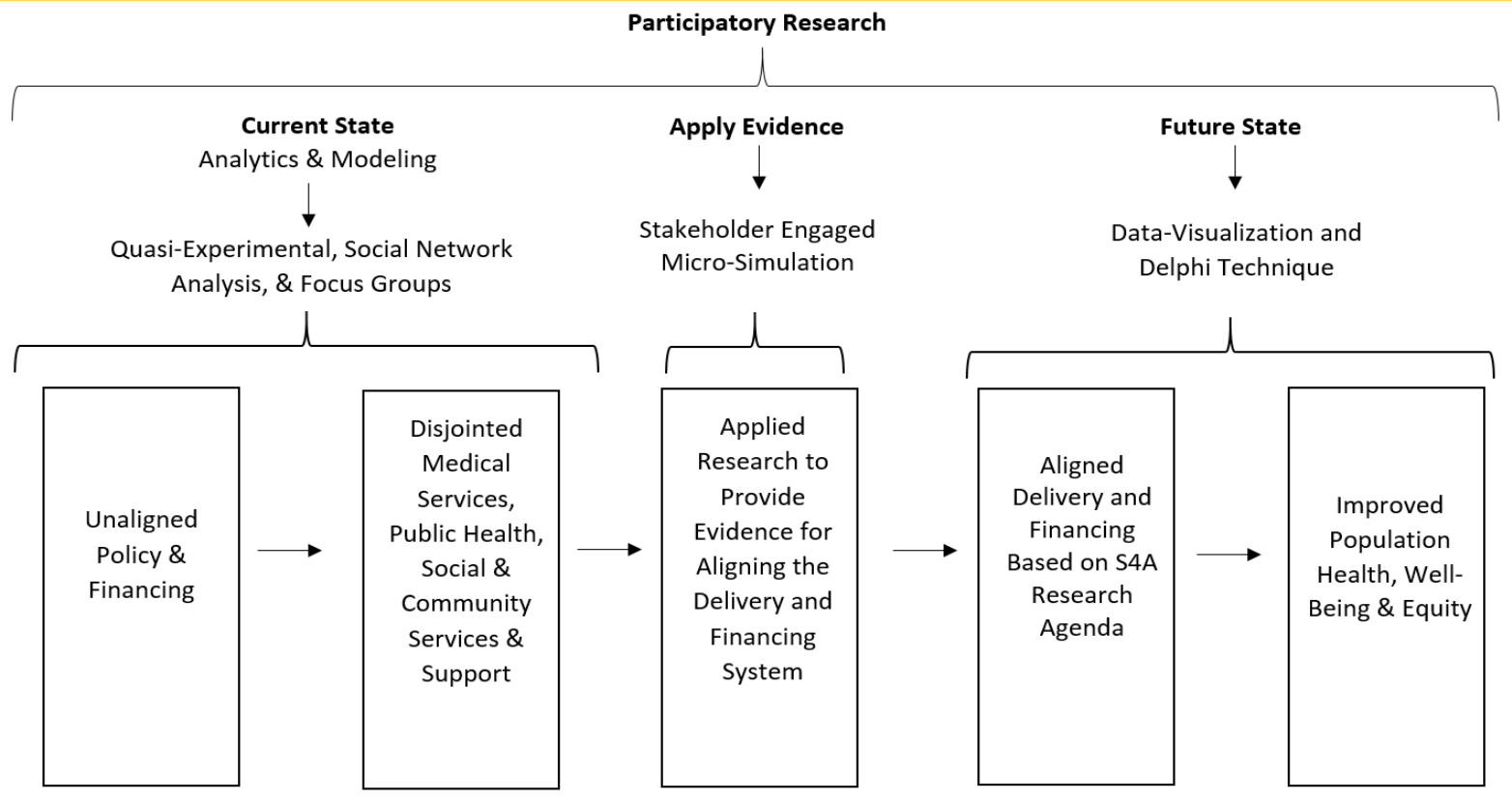
Jail & Jail-Based health Service Provider

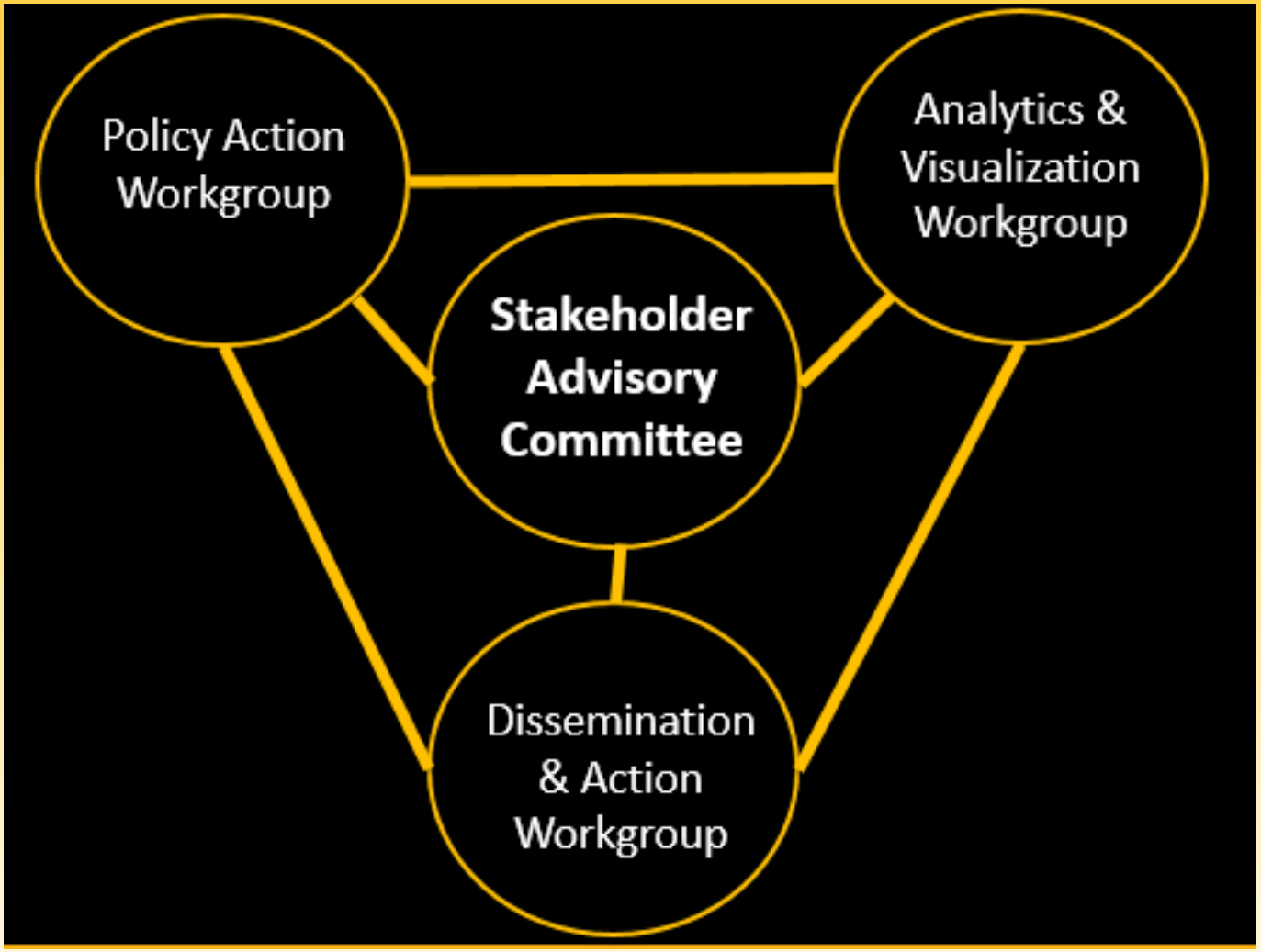
Consumer-Operated & Peer-Support Service Providers

Mental Health Advocacy Organizations (NAMI, MHA, MH P&A)

Assumptions and Actions Regarding our Stakeholders

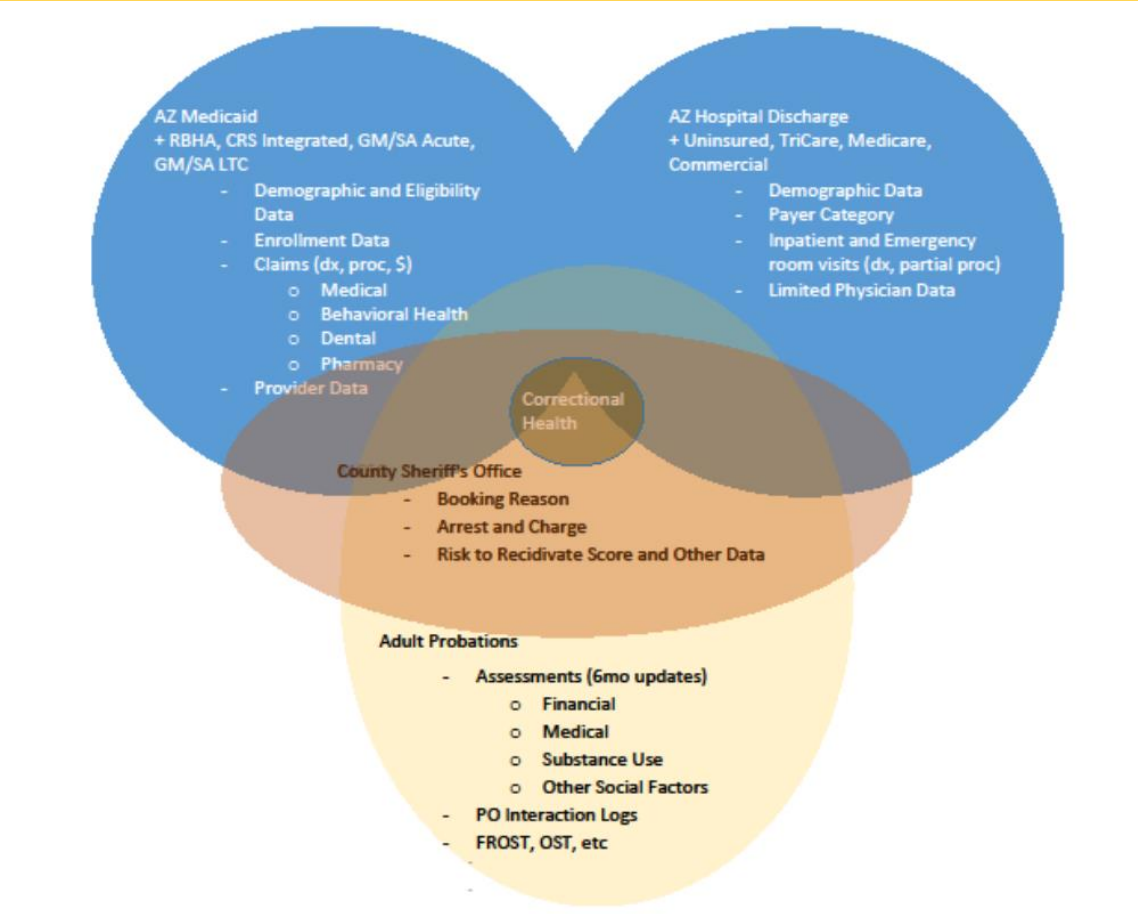
- Multiple and Competing Agendas and Perspectives
- GOAL: To Create Greater Consensus and Collaboration for Developing a Culture of Health for Persons with Significant Behavioral Health Issues
- Stakeholder Meetings & Stakeholder Survey


Participatory Research
Current State
Analytics & Modeling
Quasi-Experimental, Social Network Analysis, & Focus Groups
Apply Evidence
Stakeholder Engaged Micro-Simulation
Future State
Data-Visualization and Delphi Technique
Unaligned Policy & Financing
Disjointed Medical Services, Public Health, Social & Community Services & Support
Applied Research to Provide Evidence for Aligning the Delivery and Financing System
Aligned Delivery and Financing Based on S4A Research Agenda
Improved Population Health, Well-Being & Equity


Policy Action Workgroup
Analytics & Visualization Workgroup
Stakeholder Advisory Committee
Dissemination & Action Workgroup

Current and Additional Sectors

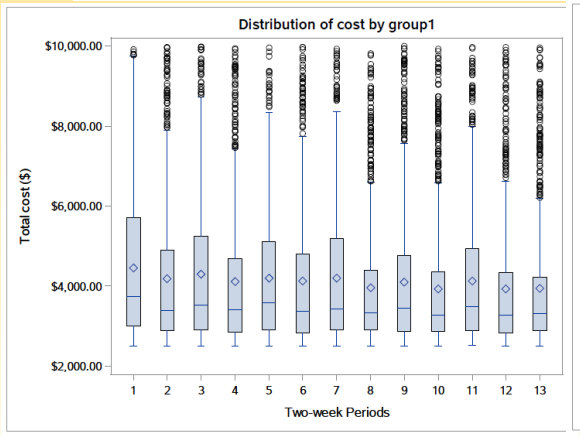
- Health
  - AZ Hospital Discharge, AZ Medicaid Claims Data
- Criminal Justice System-Maricopa County
  - Adult Probation Enterprise Tracking System
  - Jail Booking Roster
  - Integrated Criminal Justice Information System

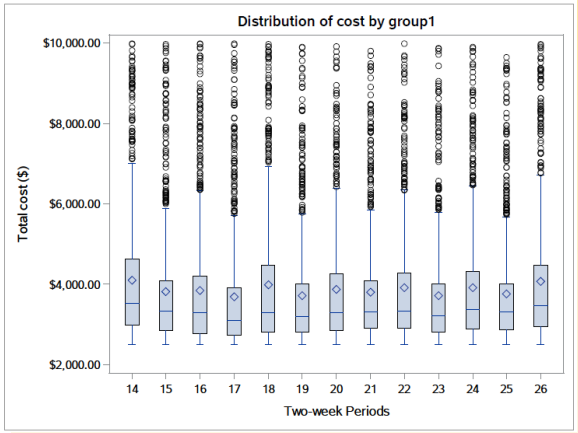


Example Summaries

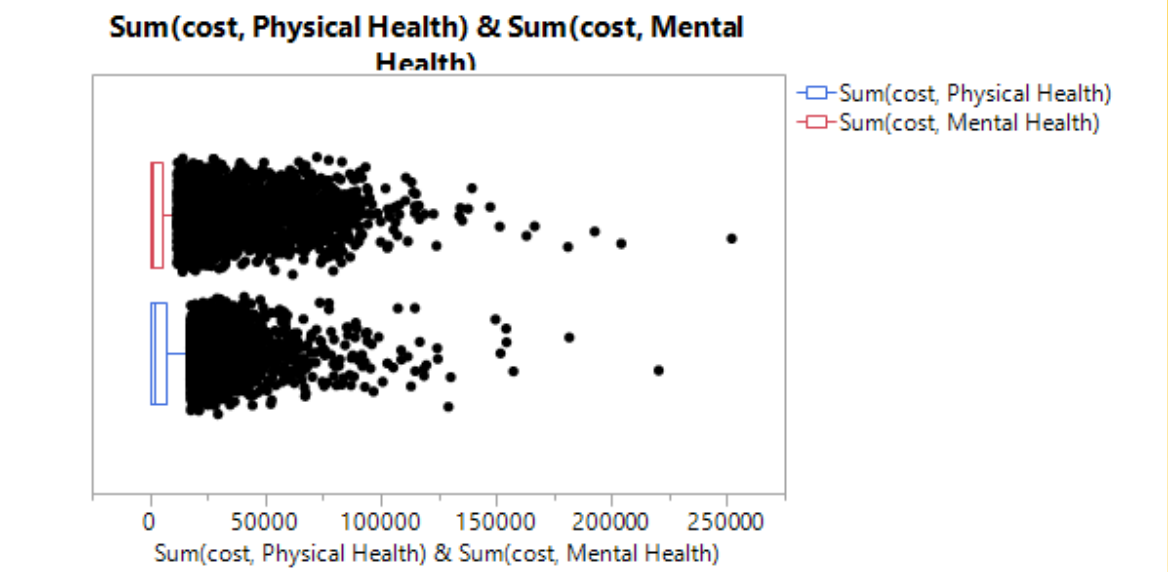
- Maricopa County
- SMI patients with physical or behavioral claims over 1 year period
- 20,693 Patients (up to 78 claims each)

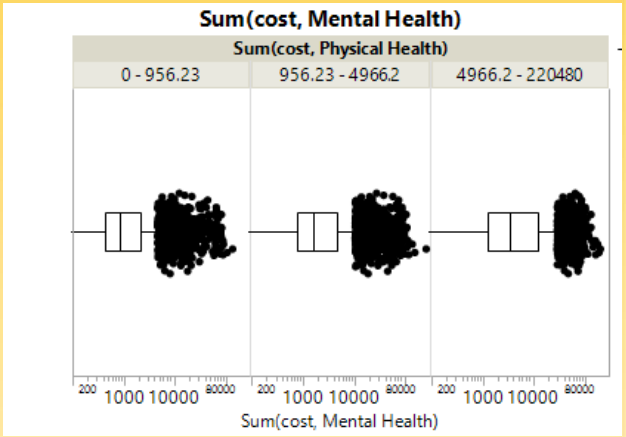
	Claims	Costs	Mean	StDev	Median
Mental Health	305135	$127,788,251	$418.79	$1343.91	98.17
Physical Health	244880	$127,051,194	$518.83	$2354.36	143.05
Substance Abuse	15572	$5,043,656	$323.89	$661.75	133.43
All	565587	$259,883,102	$459.49	$1841.01	117

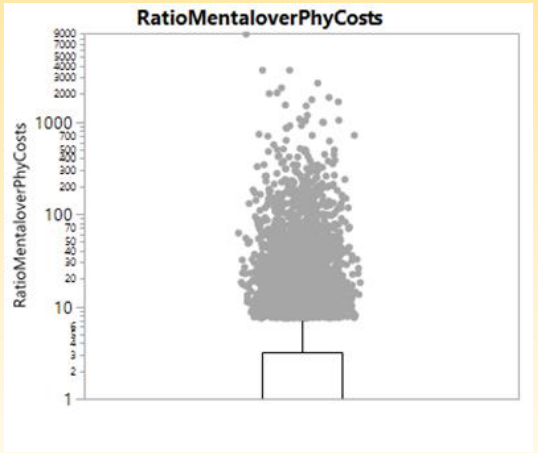




Physical and Behavioral Costs per Patient and Ratios

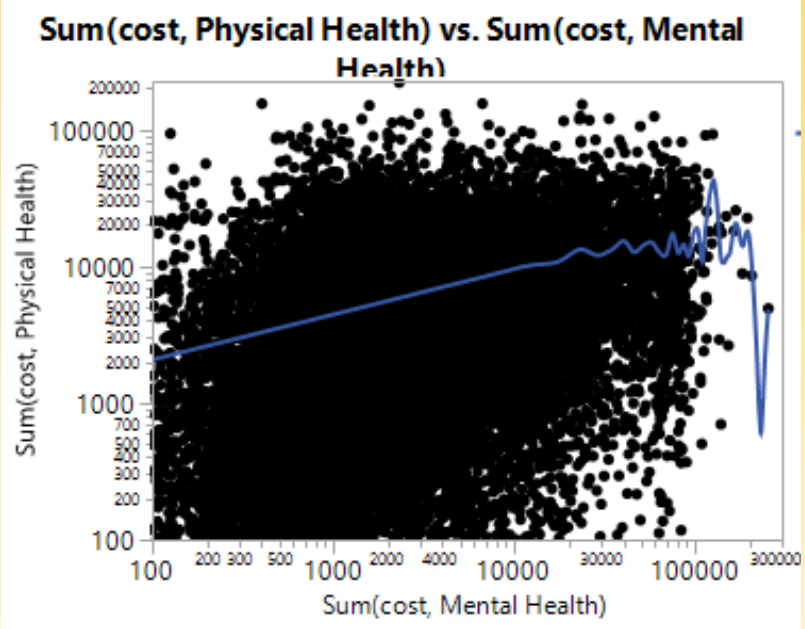




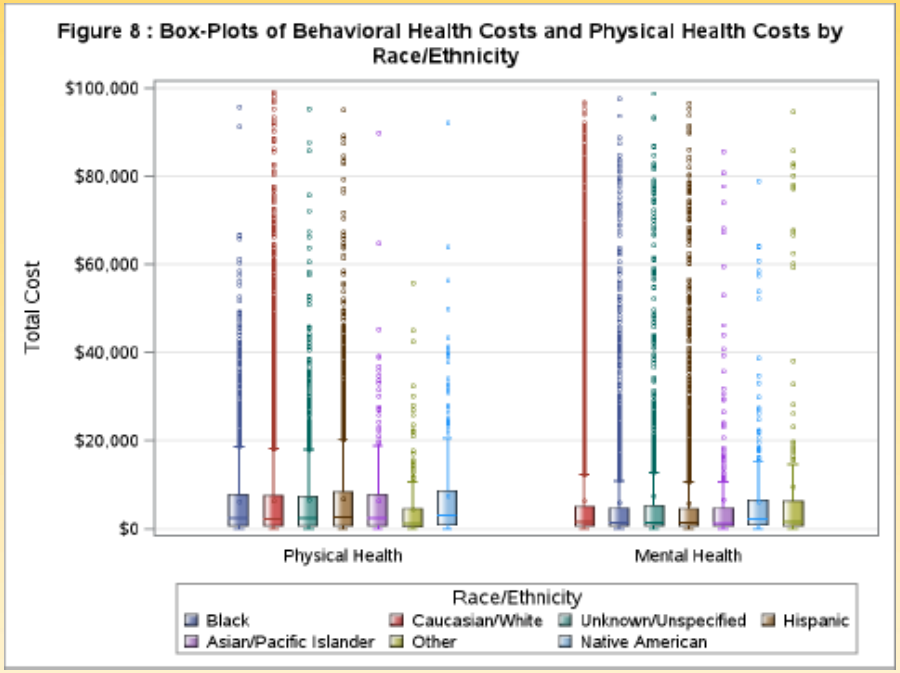


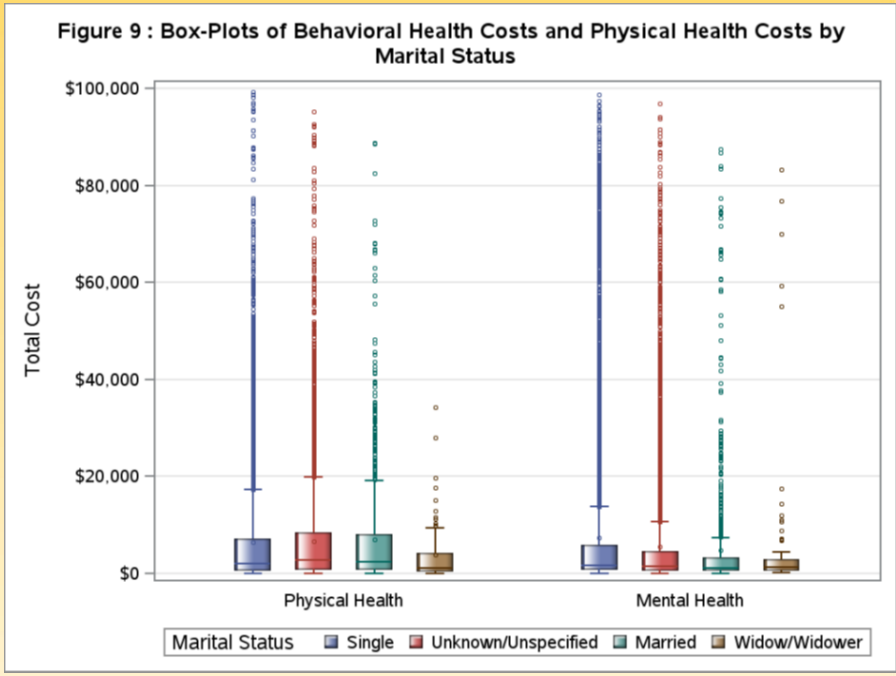
Costs per Patient on Log Scale

- Physical and behavioral costs relationship



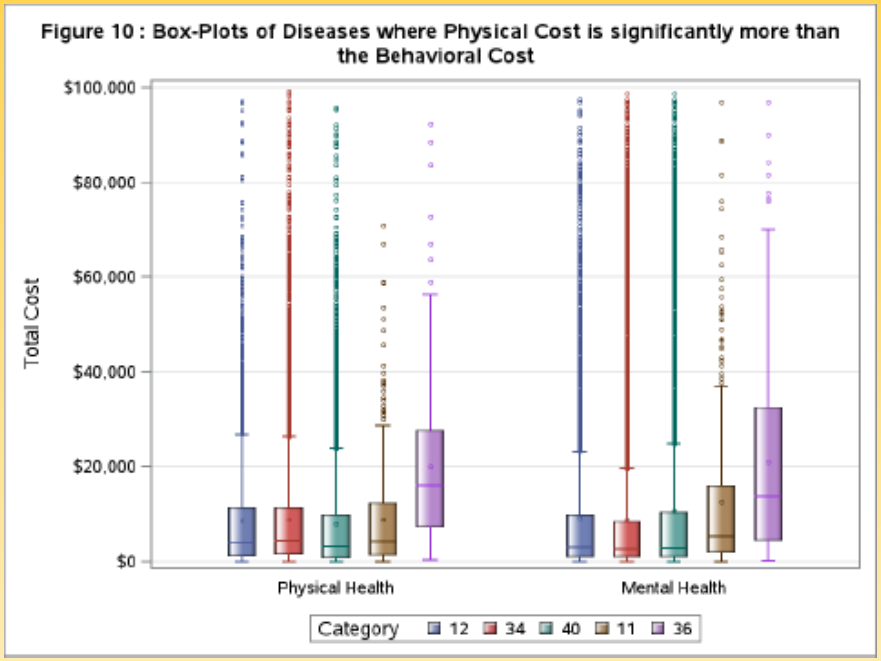
Costs by Categories per Patient





Example Additional Tasks

- Comparisons for physical & behavioral health conditions
- Analysis of population by deciles of utilization, controls
- Integration with additional non – health data



Disease Category	Disease Description
11	Alcohol dependence syndrome
12	Other mental disorders exc. psychoses & alcohol dependence
34	Symptoms, signs, & ill-defined conditions

Disease Category	Disease Description
36	Poisonings
40	Schizophrenic disorders

Timeline

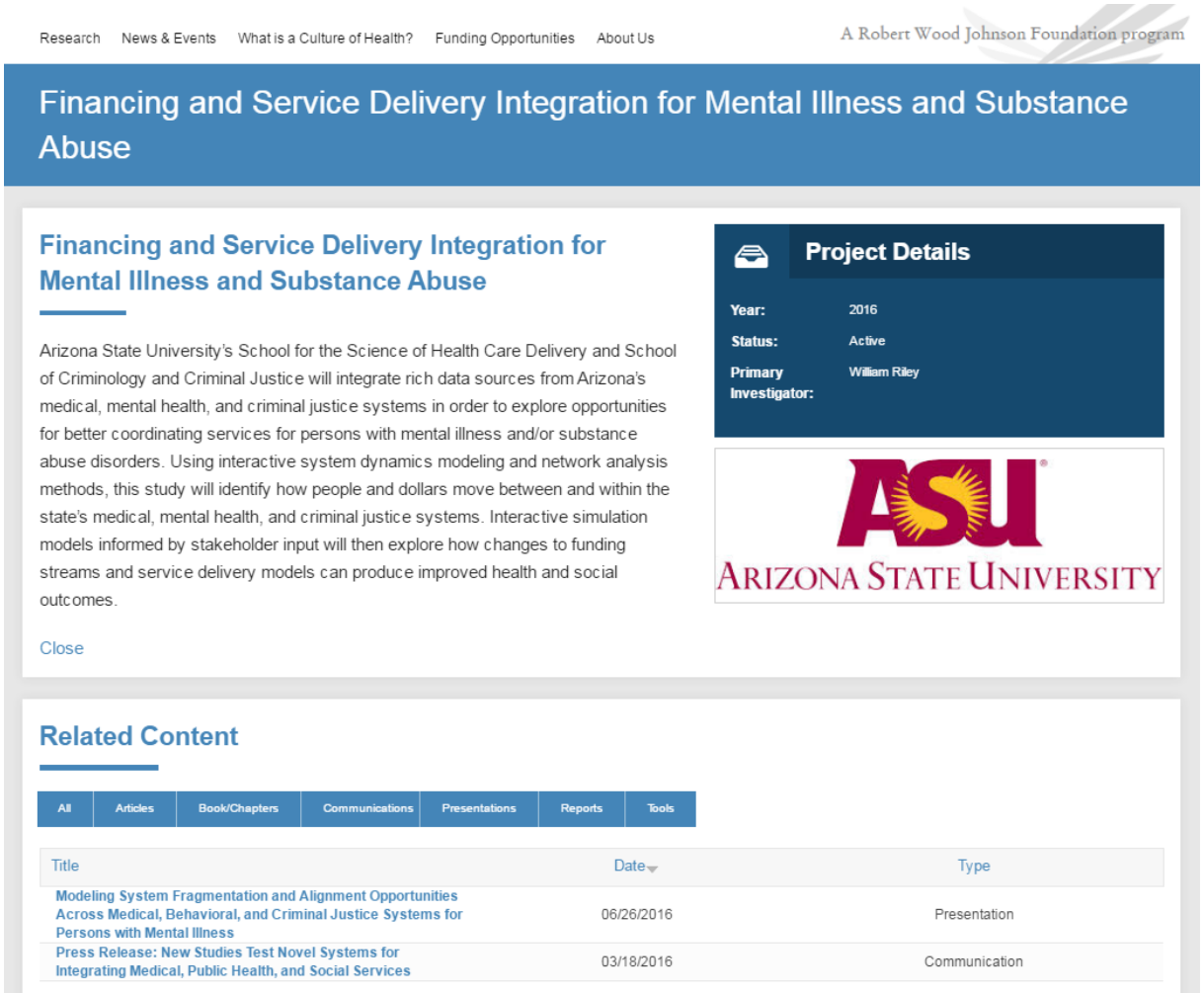
- December 2016 – Convene Stakeholder Advisory Committee
- January 2017 – Development of microsimulation models and data visualization models
- March 2017 – Convene Stakeholder Advisory Board
- April 2017 – Preliminary findings from quasi-experimental design and SNA
- July 2017 – Design and plan simulations, initiate financial modeling, identify participants of modified Delphi study
- August 2017 – Complete first round of modified Delphi study
- September 2017 – Decision Theater visualizations, complete second round of modified Delphi study
- October 2017 – Finalize causal model on integration for SMI and convene Advisory Board
- December 2017 – Develop specific recommendations about behavioral health services that would fill gaps
- January 2018 – Finalize findings
- February 2018 – Convene Advisory Board, Final Report

End of Project Deliverables

- Research design template for a multimethod multisector Systems For Analysis
  - Transform participatory research into an intervention strategy
- Model for aligning multisector policy solutions to reduce care fragmentation for vulnerable populations
  - Evidence based findings drive Increased communication and collaboration to expedite stakeholder consensus policy making

Project Updates

go to: http://systemsforaction.org/projects/financing-and-service-delivery-integration-mental-illness-and-substance-abuse



Commentary

Steven Teutsch, MD, MPH
S4A National Advisory Committee

Former Chief Science Officer,
Los Angeles County
Department of Public Health

Questions and Discussion

Webinar Archives & Upcoming Events

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

Upcoming Webinars

S4A Collaborating Research Centers

November 16, 2016, 1 pm ET

THE COMPREHENSIVE CARE, COMMUNITY, AND CULTURE PROGRAM

David Meltzer, MD, PhD, *Director of the Center for Health and the Social Sciences, and* ***Harold Pollack, PhD,*** *School of Social Service Administration, and Co-Director of The University of Chicago Crime Lab, The University of Chicago*

December 7, 2016, 12 pm ET

IMPROVING POPULATION AND CLINICAL HEALTH WITH INTEGRATED SERVICES AND DECISION SUPPORT

Paul K. Halverson, DrPH, *Dean, and* ***Joshua R. Vest, PhD****, Associate Professor, Health Policy and Management, Indiana University Richard M. Fairbanks School of Public Health in Indianapolis*

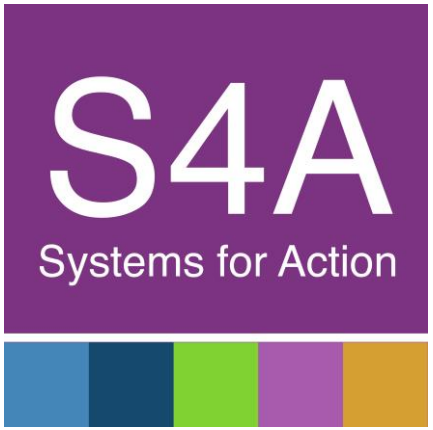
S4A National Coordinating Center Intramural Research

December 15, 2016, 1 pm ET

A NETWORK VIEW OF POPULATION HEALTH DELIVERY SYSTEMS

Rachel Hogg Graham, DrPH, MA, *Assistant Professor of Health Sciences, Education, and Research, University of Kentucky College of Health Sciences*

Thank you for participating in today's webinar!



For more information about the webinars, contact:

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111 Washington Avenue #201, Lexington, KY 40536

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Speaker Bios

Dr. William J. Riley is a Professor in the School for the Science of Health Care Delivery at Arizona State University, where he teaches process engineering, health finance, and health care quality and safety design. He previously served as the Associate Dean for the School of Public Health at the University of Minnesota and currently serves as the Director of the National Safety Net Advancement Center. Dr. Riley brings 25 years of senior executive experience in health care organizations, including serving as President and CEO of Pacific Medical Center in Seattle, Washington; CEO of Aspen Medical Group in St. Paul, Minnesota; Senior Vice President at Blue Cross Blue Shield of Minnesota in St. Paul; and Senior Vice President of St. Paul-Ramsey Medical Center/Ramsey Clinic.

Dr. Riley's research areas include quality improvement and patient safety, with several nationwide and international projects currently underway. He is the author of more than 60 articles related to quality management, patient safety and health care management, and has co-authored two books on performance improvement in health care. A past chair of the Public Health Accreditation Board, Dr. Riley serves on several boards, including the Fairview Physicians Associates (FPA), an affiliate of Fairview Health Systems.

Dr. Michael S. Shafer is a professor in the School of Social Work at Arizona State University's College of Public Service and Community Solutions where he also holds affiliate appointments in the Center for Health Information Research and the School of Criminology and Criminal Justice. Dr. Shafer is the founding director of the Center for Applied Behavioral Health Policy which has, for the past 25 years, conducted cutting edge research on the adoption and implementation of innovative practices in behavioral health care. Dr. Shafer has authored more than 40 peer-reviewed research articles and generated more than $45 million in grants and contracts that target capacity building and innovation in behavioral health services.

Dr. George C. Runger is Chair of the Department of Biomedical Informatics (BMI) and the International School of Biomedical Diagnostics and Professor in the School of Computing, Informatics, and Decision Systems Engineering at Arizona State University. He researches analytical methods for knowledge generation and data-driven improvements in systems. He focuses on machine learning for large, complex data, and real-time analysis, with applications to processes, surveillance, decision support, and population health. Previously, he was a senior engineer and technical leader for system improvements and analytics projects at IBM. He reviews for journals in the area of machine learning and statistics and he is currently the department editor for healthcare informatics for IIE Transactions on Healthcare Systems Engineering.