Accountable Community of Health Structures and Cross-Sector Coordination

Research In Progress Webinar

Wednesday, June 21, 2017  12:00-1:00pm ET/ 9:00-10:00am PT

Funded by the Robert Wood Johnson Foundation
Agenda

Welcome: Anna G. Hoover, PhD, Systems for Action Coordinating Center, and Assistant Professor, University of Kentucky College of Public Health

Accountable Community of Health Structures and Cross-Sector Coordination

Presenter: Eli Kern, MPH, Epidemiologist, Public Health - Seattle and King County  eli.kern@kingcounty.gov

Commentary: JudyAnn Bigby, MD, Senior Fellow, Mathematica Policy Research, Systems for Action Research National Advisory Committee Member  JBigby@mathematica-mpr.com

Elya Moore, PhD, Executive Director, Olympic Community of Health, Port Townsend, Washington  elya@olympicch.org

Questions and Discussion
Presenter

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Accountable Community of Health Structures and Cross-Sector Coordination

Final Report

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The Story
In King County, many initiatives work across sectors to improve health and well-being throughout the life course.

**Things that influence our health and happiness**

**Social:** school, work, money, housing, crime, family and community bonds

**Behavior:** choices around diet, exercise, sex, drugs, safety and stress

**Environment:** harmful substances in air, food, and water, structural hazards

**Genetics:** what we’re born with

**Crises we try to avoid**

- Homelessness
- Jail and prison
- Avoidable visits to hospital and Emergency Department
- Disease, injury and disability – physical, behavioral and chemical dependency

**Best Starts for Kids**

**Youth Action Plan**

**Equity & Social Justice**

**Accountable Community of Health**

**cross-cutting initiatives**

- Communities of Opportunity
- Health-Housing Partnership
- Familiar Faces
- Physical and Behavioral Health Integration

**born or move into King County**

infant toddler preschooler school-age adolescent young adult middle age old age

**optimal quality of life**
Data fragmentation limits our collective ability to improve health & well-being

Data fragmentation

Agency A  Agency B

Agency C  Agency D

data systems are program specific and largely do not talk with each other

Providers struggle to:
- Provide whole person care
- Avoid care gaps and overlaps
- Alert other providers to significant events
- See impact of social determinants of health
- Understand full context of health

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- Measure meaningful progress
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Impact on health & human services providers

Impact on analysts

Population health analysts struggle to:
- Provide actionable and timely information
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Current cross-sector strategies

ACH

Catalyze cross-sector strategies

Collective Impact

1. Backbone function
2. Common agenda
3. Shared measurement system
4. Mutually reinforcing activities
5. Continuous communication

Impact

Triple Aim

Intermediate Outcomes

Examples:
1. Improved utilization of clinical preventive services
2. Decreased avoidable ED visits
3. Decreased jail involvement

Short-term Outcomes

Examples:
Regional, cross-sector:
1. Shared data assets
2. Care coordination strategies

Theory of change

= developmental evaluation (1a)
= developmental evaluation (1a) process evaluation (1b)
= outcome evaluation (2a/b)
Two of nine ACHs included in study

[Map of Washington state with two highlighted ACHs: North Sound ACH and King County ACH]
Our research questions

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<td>1</td>
<td>What factors support or inhibit local health &amp; human services departments’ (LHHSDs) ability to develop shared data?</td>
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<td>2</td>
<td>Role of LHHSDs in building shared data through ACH context?</td>
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<td>3</td>
<td>Is care coordination (King County - Familiar Faces, Whatcom County – Intensive Case Management) associated with better health care and jail outcomes?</td>
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Methods
## LHHSDs building shared data in ACH context

- **Primary and secondary data collection and analysis between June 2015 - July 2016**
- **Document review (n=60):** ACH-related meetings on fiscal, legal and political environment, guiding principles, roles and responsibilities, regional health improvement priorities
- **Participant observations (n=60):** ACH-related meetings on developing cross sector relationships, governance and decision making, and building shared and linked data
- **Shared learning sessions (n=54):** Monthly meetings between study partners, quarterly regional convening, and bi-weekly project improvement huddles
- **Systems mapping:** Created multiple study visualizations to depict pre-ACH data sharing and options for future data sharing and linkage

## Care coordination outcome evaluation

- **Outcome evaluation of care coordination program in Whatcom County and continuity of care program in King County**
- **Whatcom County – Intensive Case Management System:**
  - Retrospective cohort design with no comparison group
  - Outcomes: Pre/post change in ED visit and hospitalization rate (and associated charges)
  - 130 enrollees between Jan 2014 and Mar 2016
- **King County – Jail Health Services Release Planning:**
  - Difference in differences analysis comparing intervention group and propensity score matched comparison group
  - Outcomes: Pre/post change in jail bookings, jail days, ED visits, voluntary and involuntary hospitalizations for behavioral health (BH) concerns, outpatient BH service utilization, and time to 1st BH service post-release
  - 112 individuals who received intervention between Mar 2014 and Mar 2015, and 127 individuals in propensity score matched comparison group
ACHs, local health & human services departments, and the path towards improved data sharing, linkage and dissemination
ACHs embrace a population health perspective

**History**
King County ACH Performance Measurement Work Group established in June 2015 to meet data, information and evaluation needs of King County ACH

**Value statement**
- Providing the right people the right information at the right time can promote evidence-based decision making for health policy and programs
- By making available a current, fuller picture of health and well-being at the individual and community level, decision makers will be better able to both gauge and make progress towards our collective goals

**Short-term goals**
- Improved data sharing
- Improved data linkage
- Improved data dissemination

**Long-term goals**
- Improved social determinants of health - where we live, learn work and play
- Triple Aim - better health & care at lower costs
- Equity & social justice

Data to action
Multi-disciplinary approach to addressing data fragmentation

Data Creators
- analysts / evaluators
- criminal justice agencies
- health plans
- health delivery system
- housing providers
- most state agencies
- non-profits
- the public
- and many more...

Data Enablers
- contracts staff
- IT staff
- legal professionals
- leadership
- privacy officers
- and many more...

Data Consumers
- analysts / evaluators
- criminal justice agencies
- health plans
- health delivery system
- housing providers
- most state agencies
- non-profits
- the public
- and many more...

Performance Measurement Work Group services
- Convener role & relationship building
- Regional & multi-ACH data advocacy
- Recommendations for improved data sharing & linkage
- Regional Health Needs Inventory
- Project-specific data support

Data creators, enablers and consumers theme adapted from Toward a Structure for Classifying a Data Ecosystem, Seeder A., Smart Chicago, 2014, http://www.smartchicagocollaborative.org/toward-a-structure-for-classifying-a-data-ecosystem/
Medicaid transformation: Overlapping target populations and multiple data perspectives

Data perspectives include...

- Community members
- Community-based organizations
- Data privacy officers
- Health and human service providers
- Health insurance plans
- IT professionals
- Population health
- State health and human services agencies
Data governance is essential for data to action

Adapted from Prashant, Kumar (2011). *An overview of architectures and techniques for integrated data systems implementation*. Actionable Intelligence for Social Policy, University of Pennsylvania.
Data sharing and data linkage are essential components for supporting equity and social justice
In an era of data fragmentation, data systems are program specific and largely do not talk with each other.

This forces us to depend on population-based surveys and vital statistics for much of our health information.

While some vital statistics are linked routinely (e.g. birth and hospitalization), many vital statistics databases and most survey databases are not allowed to be linked for routine public health assessment, monitoring and evaluation.

If all-payer claims were linked to electronic health data and human services data on all King County residents, this would create an environment in which we could better understand a fuller picture of individual and community health and identify disparities.
Care coordination program in Whatcom County reduces ED and hospital use

**Sample interpretation**

Given that total ED visits in pre period were ~408 per 200 days (the median enrollment period) for our cohort of 132 enrollees, a 38.8% reduction translates to a total of 158 prevented visits for a median enrollment period of 200 days. Or averting 1.2 ED visits per person during this time period.
Prevented healthcare costs associated with care coordination program

Sample interpretation

Given that total ED charges in pre period were $1,048,801 per 200 days (median enrollment period) for our cohort of 132 enrollees, a 35.5% reduction translates to a total savings of $372,324 for a median enrollment period of 200 days. Or savings of $2,821 per person during this time period. Note that this is not net savings as cost of ICM program is not considered.
Robust data linkage used to evaluate King County continuity of care program

A. Jail EHR data on individuals who did and did not receive Release Planning during 1-year intervention period
   Source: King County Jail Health Services
   
   linked by inmate number

B. Jail booking data
   Source: King County Department of Adult & Juvenile Detention
   
   probabilistic matching using unique identifiers

C. Medicaid eligibility data
   Source: WA State Health Care Authority
   
   linked by Medicaid recipient number

D. Medicaid claims data
   Source: WA State Health Care Authority
   
   linked by inmate number, Medicaid recipient number, or determinist matching algorithm

E. Behavioral health treatment data
   Source: King County Behavioral Health & Recovery Division

1st cut: exclude individuals who received Release Planning outside of 1-year intervention period during 3-year study period

2nd cut: exclude individuals with < 33/36 months Medicaid coverage per year during 3-year study period

final analytic data set
Propensity score matching used to identify a comparison group.

Balance of covariates:

- **Age**: Differences were not significant in the unmatched comparison.
- **Sex**: Differences were not significant in the unmatched comparison.
- **Race**: Differences were not significant in the unmatched comparison.
- **Hispanic ethnicity**: Differences were not significant in the unmatched comparison.
- **Baseline bookings**: Differences were significant.
- **Baseline jail days**: Differences were significant.
- **Behavioral health concern**: Differences were significant.
- **Chemical dependency concern**: Differences were significant.
- **Number of chronic disease diagnoses**: Differences were significant.

The bar chart shows the standardized difference between unmatched and matched comparisons, with significant differences indicated for baseline bookings, baseline jail days, behavioral health concern, chemical dependency concern, and number of chronic disease diagnoses.
Effect of Release Planning on criminal justice and health care outcomes

Compared to a matched comparison group*, individuals who received Release Planning services one or more times between 2013 and 2014 experienced the following changes over one year...

- **Jail bookings**: No significant difference
- **Jail days**: No significant difference
- **ED visits**: 1.8 more visits
- **Voluntary hospitalizations for BH concern**: No significant difference
- **Involuntary hospitalizations for BH concern**: No significant difference
- **Outpatient behavioral health services**: 21.7 more services
- **Days to 1st outpatient BH service after release from jail**: 54.8 days sooner

*Propensity score model included age at true/mock intervention, sex, race, Hispanic ethnicity, pre-intervention jail bookings and jail days, and behavioral health concern, chemical dependency concern and # chronic disease diagnoses (all as defined for Familiar Faces initiative)

Note: For all outcomes other than jail bookings and days, only days NOT in jail were included in the denominator for calculating the pre and post-intervention rates.
Implications
Pre-ACH Landscape of King County data assets to measure progress towards the Triple Aim

**King County**
- Department of Adult & Juvenile Detention
  - Juvenile booking data
  - Adult booking data
- Department of Community & Human Services – BHRD
  - Chemical dependency treatment
  - High Utilizer Integrated Database
  - Medicaid eligibility
  - Mental health treatment (RSN)
  - PRISM
- Public Health – Seattle & King County
  - APDE – VS, survey, admin data, BoD
  - JHS EHR (PEARL)
  - CD – syndromic, notifiable dx, imms.
  - CHS – PHCs, Access & Outreach
  - Emergency Medical Services
  - Environmental Health
  - Medical Examiner
- Other Seattle/King County agencies
  - Criminal justice (e.g. police, courts)
  - Department of Assessments
  - Division of Aging & Disability Services
  - Public Housing Authorities
  - Safe Harbors

**WA State**
- OFM
  - All-Payer Claims Database
- HBE
  - WA Health Plan Finder
- HCA
  - HIE – Link4Health - CDR
- DSHS
  - Automated Client Eligibility System (ACES)
  - TARGET & PRISM
- DSHS
  - ProviderOne claims
- OFM
  - Education Research Data Center
- DSHS
  - RDA Integrated Client Database
- DOH
  - Vital stats, surveys, hospitalization

**Non-profit and private sector**
- WA Health Alliance
- Hospital systems
- Community Health Centers
- ED Information Exchange
- Health plans

**Legend**
- Established
- In process

Click for glossary of terms
Data moves at the speed of trust
Acknowledgements

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- No other financial disclosures or conflicts of interest

Research team

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- Tamara Babasinian
- Evan Buckley

**North Sound ACH:**
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Glossary of Terms

ACH – Accountable Community of Health
APDE – Assessment, Policy Development & Evaluation, PHSKC
BHRD – Behavioral Health & Recovery Division, DCHS
CD – Communicable disease
CDR – Clinical Data Repository, Link4Health
CHS – Community Health Services, PHSKC
DAJD – King County Department of Adult and Juvenile Detention
DCHS – King County Department of Community and Human Services
DSHS – WA State Department of Social and Health Services
ED – Emergency department
EHR – Electronic health record
ERDC – WA State Education Research & Data Center
HBE – WA Health Benefit Exchange
HCA – WA State Health Care Authority
HIE – Health Information Exchange
ICM - Intensive Case Management System
KCIT – King County Information Technology
LHHS – Local health and human service department
OFM – WA State Office of Financial Management
PHC – Public Health Center
PHSKC – Public Health – Seattle & King County
PMW – Performance Measurement Workgroup, King County ACH
PRISM – Predictive Risk Intelligence System, DSHS
PSB – King County Office of Performance, Strategy, and Budget
RDA – Research & Data Analysis Division, DSHS
RSN – Regional Support Network
SIM – State Innovation Model
TARGET – Treatment & Assessment Report Generation Tool, DSHS
VS – Vital statistics
WAHA – Whatcom Alliance for Health Advancement
WHA – WA Health Alliance
Commentary

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Questions and Discussion
# Webinar Archives

[http://systemsforaction.org/research-progress-webinars](http://systemsforaction.org/research-progress-webinars)

## Upcoming Webinars

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<td>Friday, June 23</td>
<td>12-1pm ET/ 9-10am PT</td>
<td><strong>LARGE SCALE REAL TIME ASTHMA EVENT MONITORING: CIVIC TECH AND PUBLIC POLICY</strong></td>
<td>Ted Smith, PhD, Chief Executive Officer, Revon Systems, Louisville, Kentucky</td>
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<td>Wednesday, July 19</td>
<td>12-1pm ET/ 9-10am PT</td>
<td><strong>IMPROVING THE EFFICIENCY OF NEWBORN SCREENING FROM COLLECTION TO TEST RESULTS</strong></td>
<td>Beth Tarini, MD, MS, University of Iowa College of Medicine</td>
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<td>Thursday, July 27</td>
<td>1-2pm ET/ 10-11am PT</td>
<td><strong>CLINICAL-COMMUNITY PARTNERSHIPS &amp; 2-1-1 TECHNOLOGY TO IMPROVE EARLY CHILDHOOD DEVELOPMENT</strong></td>
<td>Bergen Nelson, MD, MSHS, Virginia Commonwealth University School of Medicine</td>
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<td>Thursday, August 10</td>
<td>12-1pm ET/ 10-11am MT</td>
<td><strong>HOSPITAL INVESTMENT AND INTERACTION IN PUBLIC HEALTH SYSTEMS</strong></td>
<td>Danielle Varda, PhD and Adam Atherly, PhD, University of Colorado</td>
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<td>Wednesday, August 23</td>
<td>12-1pm ET/ 9-10am PT</td>
<td><strong>COMPREHENSIVE POPULATION HEALTH SYSTEMS &amp; HOSPITAL UNCOMPENSATED CARE COSTS</strong></td>
<td>C.B. Mamaril, PhD, Senior Scientist, University of Kentucky College of Public Health</td>
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Thank you for participating in today’s webinar!

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For more information about the webinars, contact:
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Acknowledgements

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Speaker Bios

**Eli Kern, MPH**, is an Epidemiologist in the Assessment, Policy Development & Evaluation Unit at Public Health - Seattle and King County. He is a Public Health Epidemiologist, and a Clinical Instructor of Health Services at the University of Washington. Mr. Kern focuses primarily on health reform monitoring, cross sector data sharing and linkage, and measuring equity gains at a local level.

**JudyAnn Bigby, MD**, is a health policy expert with a broad range of experience, including more than 25 years of primary care internal medicine practice. Her areas of expertise include primary care design and integration with public health; state health policy; primary care transformation; and integration of physical and behavioral health, with a special focus on women’s health, minority health, and disparities. Dr. Bigby led a project for the Ohio Department of Health to assess the effect of Medicaid expansion under the Affordable Care Act on public health programs, and an evaluation of the Oregon 1115 Medicaid waiver demonstration on how the demonstration transforms the delivery of health care to improve access and quality. Previously, Dr. Bigby served as secretary of health and human services for the Commonwealth of Massachusetts, where she was responsible for implementing many aspects of the 2006 Massachusetts health care reform law. She served as a director of Brigham and Women’s Hospital’s community health programs, in addition to designing clinical programs and conducting community-based research to eliminate health disparities among low-income and minority women, particularly related to breast and cervical cancer.

**Elya Moore, PhD**, is Executive Director of the Olympic Community of Health in Port Townsend, Washington. With 12 years of training as an epidemiologist and 6 years of experience leading a local nonprofit health collaborative, Dr. Moore is grounded by the belief that health care is local, and therefore solutions to the problems that exist today must derive from the local experience. She drives toward improved population health by blending her experience and training with her passion for supporting communities.