



State Dissemination and Implementation Strategies and LHD Accreditation Readiness & QI Maturity

Research In Progress Webinar

Thursday, February 16, 2017

1:00-2:00pm ET/ 11:00am-12:00pm MT

Funded by the Robert Wood Johnson Foundation

Agenda

Welcome: CB Mamaril, PhD, Research Assistant Professor,
University of Kentucky College of Public Health

State Dissemination and Implementation Strategies and
LHD Accreditation Readiness & QI Maturity

Presenters: Adam J. Atherly, PhD, Health Systems, Management &
Policy, Colorado School of Public Health adam.atherly@ucdenver.edu and
Lisa VanRaemdonck, MPH, MSW, School of Public Affairs Institute for
Governance lisa.vanraemdonck@ucdenver.edu, University of Colorado Denver

Commentary: Leslie M Beitsch, MD, JD, Center for Medicine and
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Questions and Discussion

Presenters



Adam J. Atherly, PhD

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A Comparison of State Dissemination and Implementation Strategies on Local Health Department Accreditation Readiness and Quality Improvement Maturity

Adam Atherly, PhD

Lisa VanRaemdonck, MSW, MPH

Melanie Whittington, PhD

A DIRECTIVE Project

Research Team Members

COLORADO PBRN

- Adam Atherly, PhD
- Lisa VanRaemdonck, MPH, MSW
- Julie Marshall, PhD
- Danielle Varda, PhD
- Rachel Hogg, DrPH
- Melanie Whittington, PhD
- Peter Manetta, MPH

KANSAS PBRN

- Gianfranco Pezzino, MD, MPH
- Sarah Hartsig, MS

NEBRASKA PBRN

- Li-Wu Chen, PhD, MHSA
- David Palm, PhD
- Anh Nguyen, PhD
- Abbey Gregg, MPH
- Niodita Gupta, MD, MPH
- Sarbinaz Bekmuratova, MS

Acknowledgements

- A Public Health Dissemination and Implementation Research to Improve Value (DIRECTIVE) Project
- Funded by the Robert Wood Johnson Foundation (Grant #72053) through the Systems for Action National Program Office
- No other financial disclosures or conflicts of interest
- Many thanks to the local public health agencies and state level partners that generously provided us with their data and expertise

Presentation Outline

1. Overview of Project
2. Quality Improvement and Accreditation Readiness
 - Measurement
 - Descriptive Statistics
 - Regressions
3. Immunizations
 - Relation to QI / AR
4. Conclusions

OVERVIEW OF PROJECT

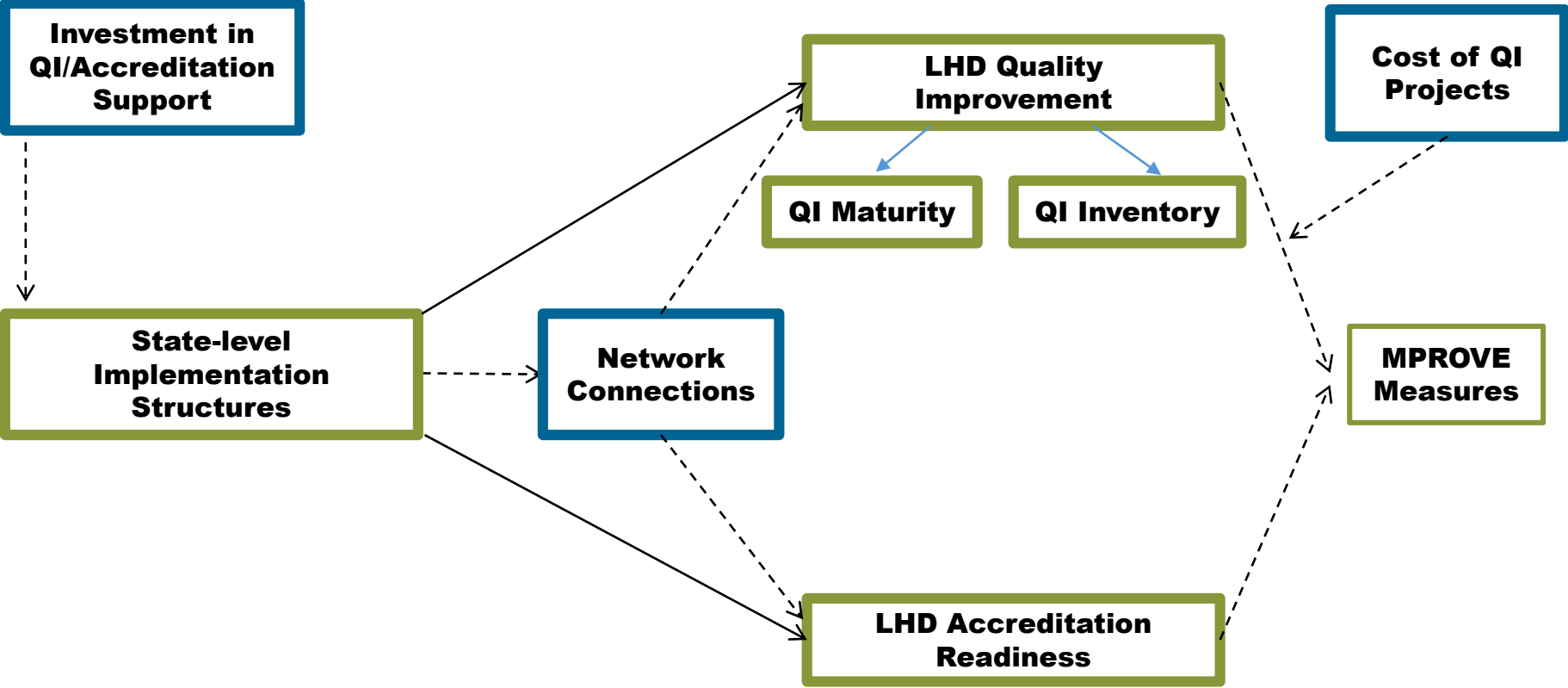
Background

- Quality improvement (QI) and accreditation readiness (AR) are intertwined for the improvement of public health practice
- Varied support from state-level partners
 - Training, Technical Assistance, Funding, Learning Community Facilitation, etc.
- Leverage national funding to support activities
 - Preventive Block Grant, National Public Health Improvement Initiative (NPHII), NACCHO Accreditation Initiative, & Multi State Learning Collaborative, Gaining Ground Initiative
- Relevant to all public health departments to create a culture of performance measurement and increase the use of evidence-based decision making
- Relevant to state-level partners with a role in supporting LHDs

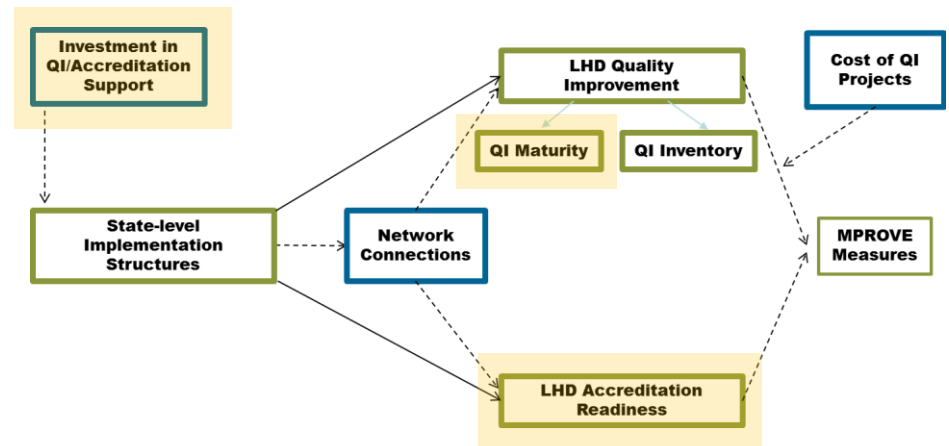
Research Questions

- Understand differences in AR and QI by LHD within and across three states
- Examine differences in financial investment in the system-level D&I initiatives
 - Impact on AR / QI
- Examine the connection between LHD's QI project topics, QI maturity and AR with health outcomes
 - Immunization Rates

Conceptual Model



QUALITY IMPROVEMENT & ACCREDITATION READINESS: *MEASUREMENT*



Measuring Quality Improvement

- QI efforts can be measured by a validated measure of QI maturity
 - Tool created by Brenda Joly and amended by Minnesota Department of Health
- Domains of QI Maturity:
 - Organizational Culture: values and norms of an agency
 - Capacity and Competence: skills and approaches
 - Alignment and Spread: diffusion of QI

QI Maturity Scoring

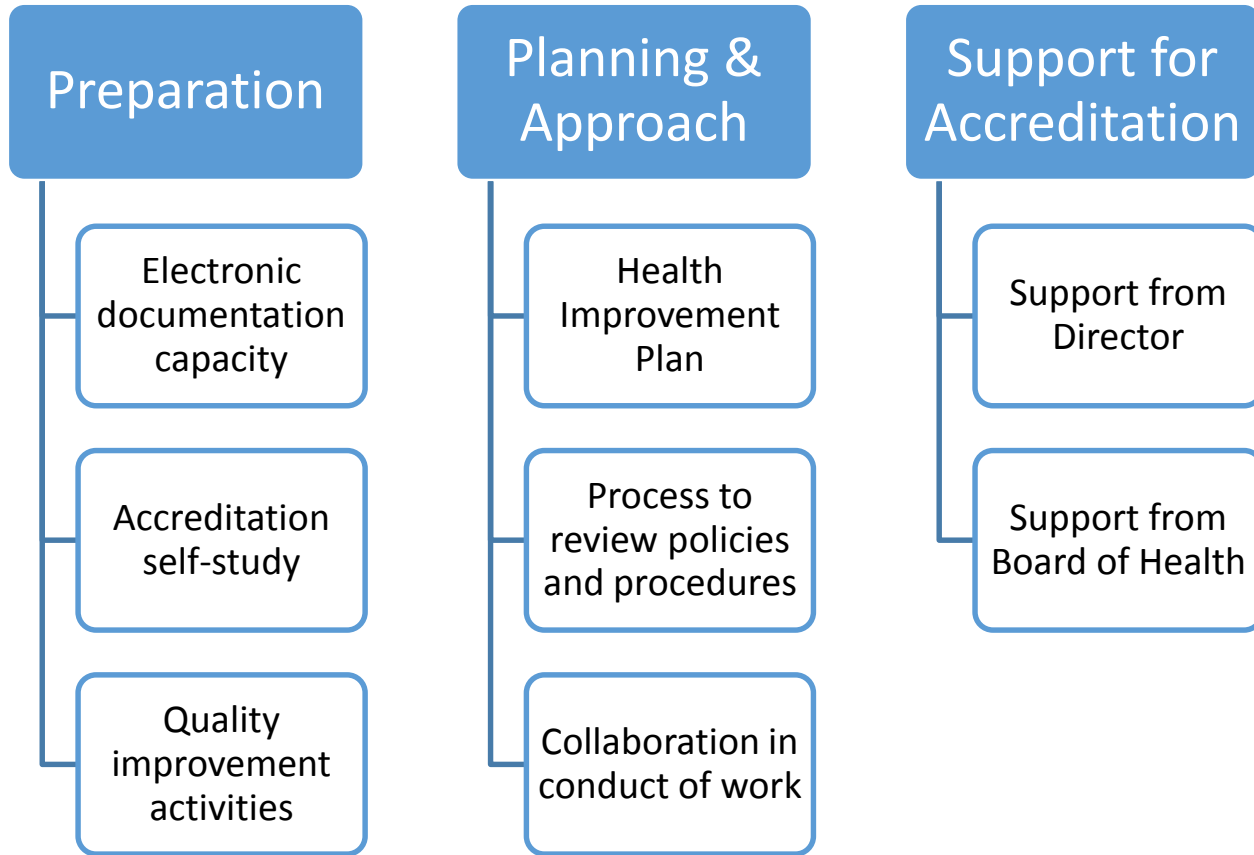
- Previous tools have scoring processes but didn't translate well in our states
 - put LHDs into categories with specific labels related to their maturity
- Used the median score across each of the 3 subsets to create a score in each subset area
- Used the median across all 10 questions to create a total QI Maturity score
 - did not include specific labels because we could not define labels that we felt accurately reflected each agency's status

<u>Median Score</u>	<u>Category</u>
5	Highest
4 – 4.9	High
3 – 3.9	Medium
2 – 2.9	Low
1 – 1.9	Lowest

Measuring Accreditation Readiness

- AR efforts can be measured by a validated measure
- Questions from AR drawn from:
 - NACCHO Profile
 - PHAB Checklist
 - Key Informant Interviews
- Survey developed with 15 Questions
- Used Confirmatory Factor Analysis to test domains
 - Acceptable reliability and validity
- Final Survey
 - 3 Domains, 8 Questions

Scoring Accreditation Readiness



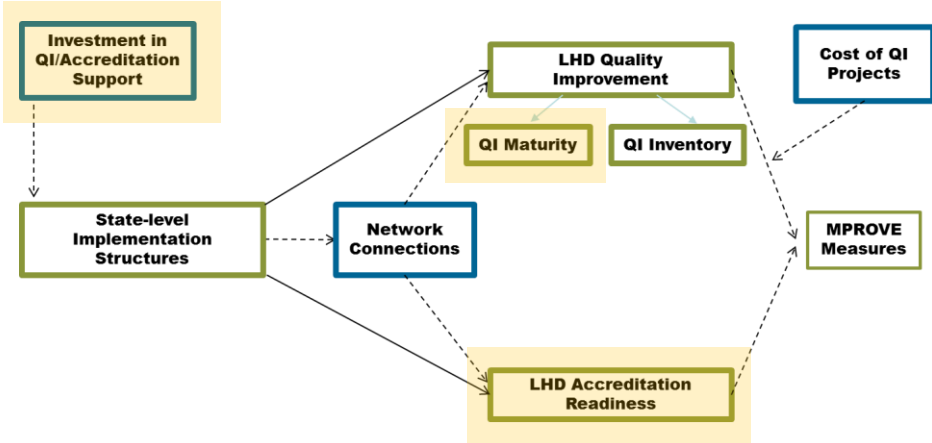
Data Collection

- Survey:
 - Organizational QI Maturity Survey: 10 questions
 - Organizational AR Survey: 15 questions
- Respondents: 156 Public Health Directors
- Sample: Local Health Departments (LHDs) in Colorado, Kansas, and Nebraska
 - Colorado: 36 LHDs (67% response rate)
 - Kansas: 100 LHDs (100% response rate)
 - Nebraska: 20 LHDs (100% response rate)
 - Total Sample Size: 156
- Time Period: January to March 2015

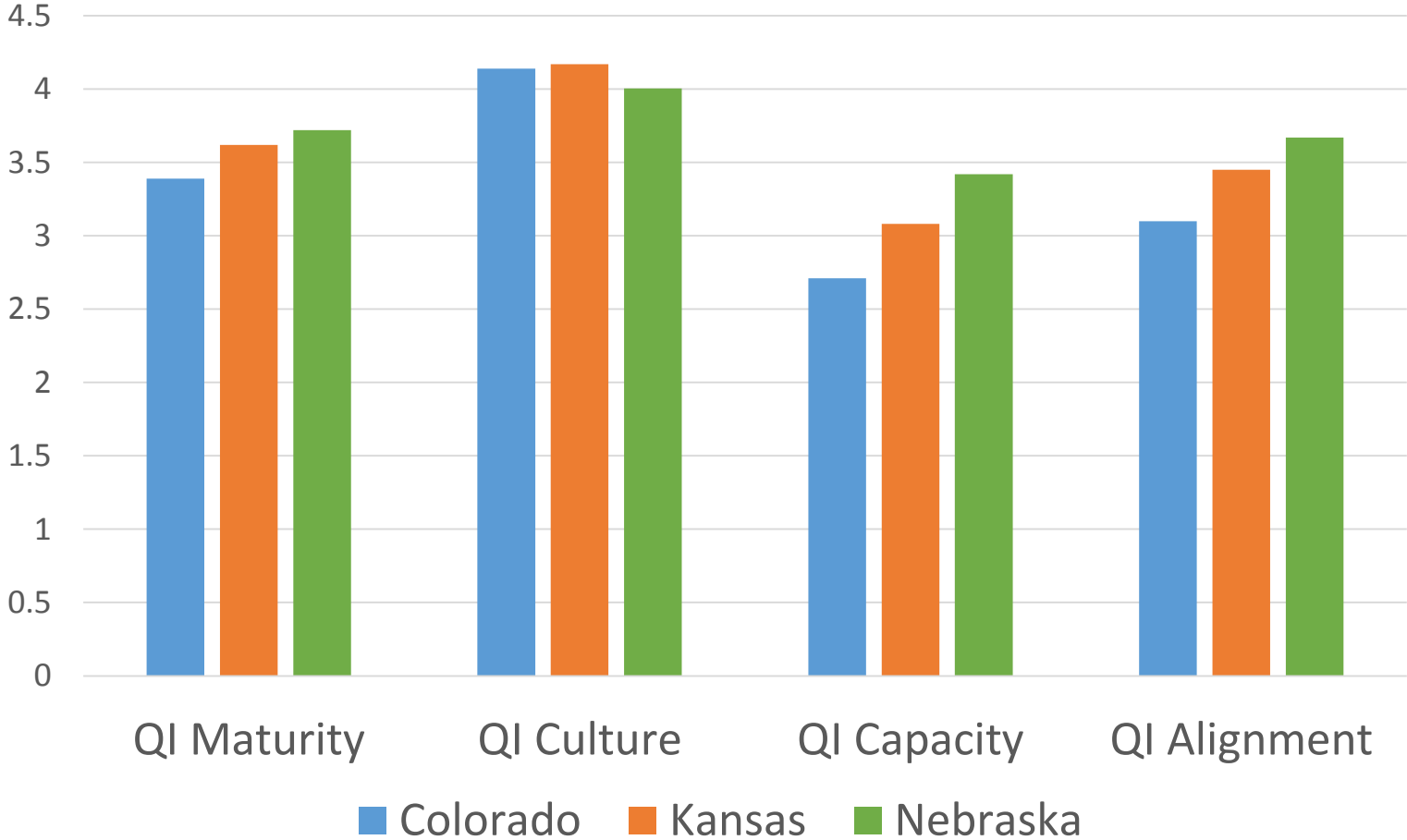
State Level Activities and Investments

- Key informant interviews and data collection with state-level partners in each state
 - State Health Departments
 - State affiliates of NACCHO
 - Public Health Institutes
 - Schools of Public Health/Centers for Public Health Practice
 - State affiliates of APHA
- Collected information on:
 - State champions, Legal requirements, State Leadership support, Other environmental and political factors, QI/AR initiatives
 - Specific aspects of the QI/AR initiatives including funding provided to LHDs

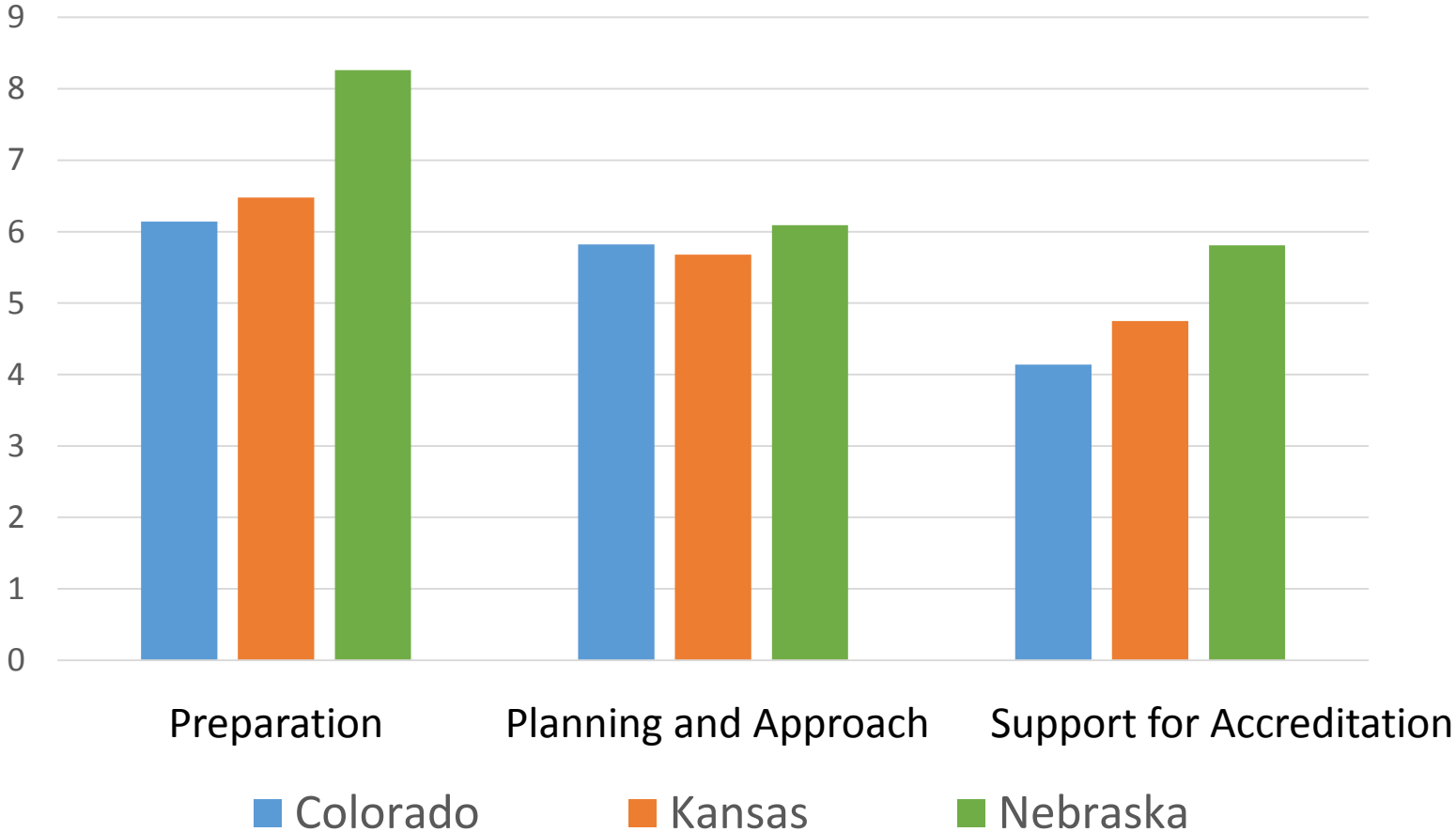
QUALITY IMPROVEMENT & ACCREDITATION READINESS: *EXPLAINING DIFFERENCES*



Descriptive Statistics: Quality Improvement



Descriptive Statistics: Accreditation Readiness



Descriptive Statistics: Heterogeneity

SIGNIFICANT DIFFERENCES ACROSS POPULATION SIZES

Measure	Colorado	Kansas	Nebraska
QI Capacity	✓	✓	
QI Maturity		✓	
AR Preparation	✓	✓	
AR Planning & Approach	✓	✓	
AR Support for Accreditation	✓	✓	

Descriptive Statistics: State Investments

	Colorado	Kansas	Nebraska
Mean	\$30,492	\$31,380	\$57,937
Standard Deviation	\$25,541	\$17,368	\$15,862
25th Percentile	\$15,000	\$21,571	\$49,436
50th Percentile	\$20,000	\$27,559	\$59,136
75th Percentile	\$40,000	\$33,895	\$66,836

Summary of Descriptive Results

- Accreditation Readiness:
 - Differences in *Preparation and Support for Accreditation*
 - No Differences in *Planning & Approach*
- QI:
 - Differences in *Maturity, Capacity, Alignment & Spread*
 - No Differences in *Culture*
- Differences in QI and AR across population sizes in CO and KS.
 - Not Nebraska
- Differences between states in investments.

Regression Analyses

- Objective: Determine the degree to which system investments relate to QI maturity and AR.
- Dependent Variables:
 - AR: Preparation, Planning & Approach, Support for Accreditation
 - QI: Maturity, Culture, Capacity, Alignment & Spread
- Independent Variables:
 - Investment Amount
 - State: Kansas, Nebraska
 - LHD Population
 - Population*KS, Population*NE,
 - Control Variables: FTE, Expenditures per Capita, Landmass, Director Longevity, Director Master's or Above, Director Public Health Trained, Director Clinically Trained, Board of Health

Regression Results: AR Preparation

- Significant Independent Variables:
 - Investment Amount ($\beta=0.000031$, $p=0.023$)
 - Nebraska ($\beta=1.74$, $p=0.031$)
 - Director Public Health Trained ($\beta=1.27$, $p=0.043$)
- Interpretation:
 - \$32,258 raises score by 1 point
 - LHDs in Nebraska scored 1.74 points higher than CO LHDs
 - Having a director that is public health trained raises score by 1.27 points

Regression Results: AR Planning & Approach

- Significant Independent Variables:
 - Investment Amount ($\beta=0.000021$, $p=0.051$)
- Interpretation:
 - \$47,619 raises score by 1 point

Regression Results: AR Support for Accreditation

- Significant Independent Variables:
 - Investment Amount ($\beta=0.000023$, $p=0.047$)
 - Kansas ($\beta=1.39$, $p=0.001$)
 - Nebraska ($\beta=1.94$, $p=0.005$)
 - FTE ($\beta=0.016$, $p=0.024$)
 - Director Public Health Trained ($\beta=1.57$, $p=0.003$)
- Interpretation:
 - \$43,478 raises score by 1 point
 - LHDs in Kansas scored 1.39 points higher and LHDs in Nebraska scored 1.94 points higher than CO LHDs
 - Having additional FTE increases score
 - Having a director that is public health trained raises score by 1.57 points

Regression Results: QI

- Dependent Variable: QI Maturity
 - Significant Independent Variables:
 - Population ($\beta=-0.00000175$, $p=0.050$)
 - FTE ($\beta=0.006$, $p=0.031$)
 - Landmass ($\beta=0.0000685$, $p=0.039$)
- Dependent Variable: QI Culture
 - Significant Independent Variables:
 - Landmass ($\beta=0.0000612$, $p=0.051$)

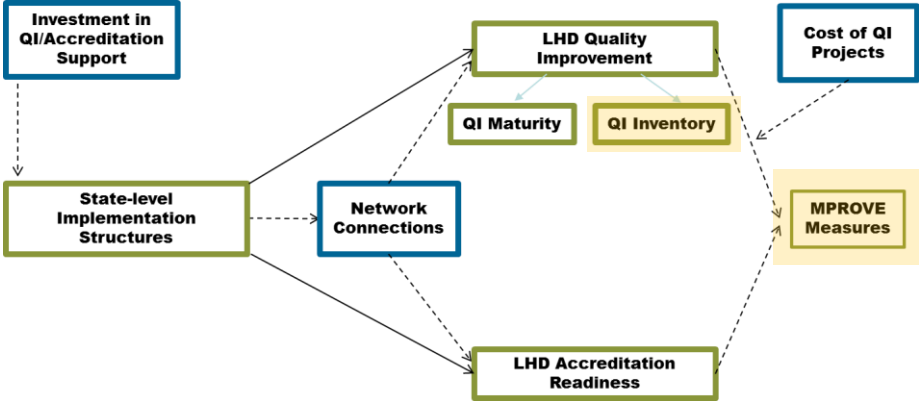
Regression Results: QI

- Dependent Variable: QI Capacity
 - Significant Independent Variables:
 - Kansas ($\beta=0.582$, $p=0.019$)
 - Population ($\beta=-0.00000492$, $p=0.001$)
 - Kansas*Population ($\beta=0.00000389$, $p=0.013$)
 - FTE ($\beta=0.017$, $p=0.001$)
 - Landmass ($\beta=0.00011$, $p=0.023$)
- Dependent Variable: QI Culture
 - Significant Independent Variables:
 - Kansas ($\beta=0.574$, $p=0.011$)
 - Nebraska ($\beta=0.045$, $p=0.045$)

Summary of Regression Results

- For AR:
 - Investment
 - Director PH Trained (Preparation, Support for Accreditation)
 - Nebraska! (Preparation, Support for Accreditation)
- For QI:
 - FTE (Capacity, Maturity)
 - Size

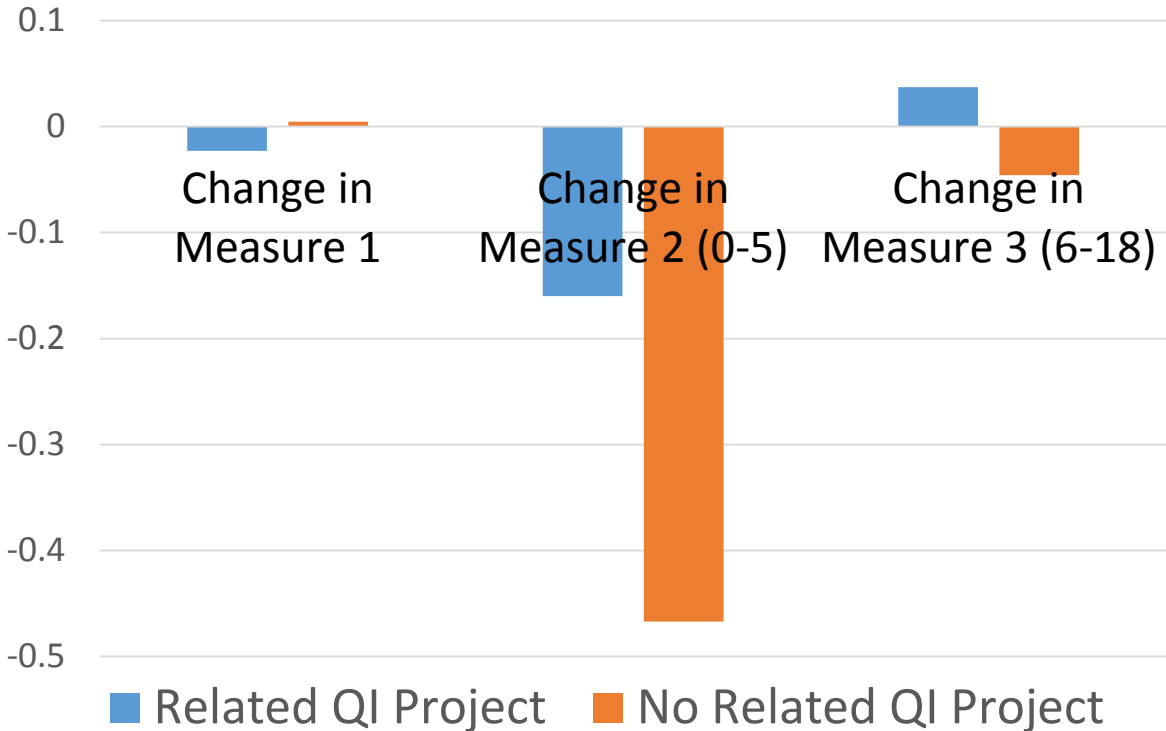
QUALITY IMPROVEMENT & ACCREDITATION READINESS: *IMPACT*



MPROVE Measure Selection

- QI projects more clearly linked with immunization than other public health services
- Every state (CO, KS, and NE) had a project that could be linked to immunizations
- Immunization MPROVE Measures:
 - Immunization MPROVE measure 1: Proportion of children vaccinated with complete series as required by state law upon entry into kindergarten for the most recent school year.
 - Immunization MPROVE measure 2: Number of immunizations administered by the LHD to children 0-5 years, during the past 12 months
 - Immunization MPROVE measure 3: Number of immunizations administered by the LHD to children 6-18 years, during the past 12 months.

Descriptive Statistics: Immunization Delivery



Regression Analyses

- Objective: Determine the degree to which QI maturity and AR are related to measures of immunization delivery.
- Dependent Variables:
 - Change in Immunization Measure 1
 - Change in Immunization Measure 2 (0-5)
 - Change in Immunization Measure 2 (6-18)
- Independent Variables:
 - QI project related to immunizations
 - QI: Maturity, Culture, Capacity, Alignment
 - AR: Preparation, Planning & Approach, Support for Accreditation
 - Kansas, Nebraska
 - Population, Population*KS, Population*NE
 - Control Variables: FTE, Expenditures per Capita, Landmass, Director Longevity, Director Master's or Above, Director Public Health Trained, Director Clinically Trained, Board of Health

Regression Results

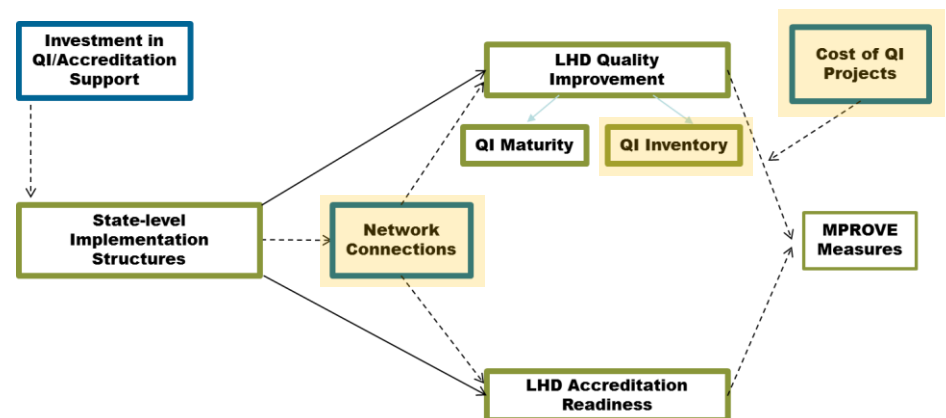
- Measure 1: Change in Overall Immunization Rate
- Significant Independent Variables:
 - Kansas ($\beta=0.127$, $p=0.001$)
 - Nebraska ($\beta=0.139$, $p=0.008$)
- Measure 2: Change in Immunization 0-5 year olds
- Significant Independent Variables:
 - None
- Measure 3: Change in Immunization 6-18 year olds
- Significant Independent Variables:
 - Immunization QI Project

Limitations

- Endogeneity
 - There is a potential for the estimates to be biased due to omitted variables
 - Could there be other state-level factors that affect QI scores?
- Potential for response bias in Colorado
 - Tested using additional data from LHD annual report to Colorado state health department
 - Across all CO LHDs, responders and non-responders did not differ significantly in their accreditation intent
 - Across small LHDs (jurisdiction <10,000 people), responders had lower accreditation intent than non-responders

Other Pieces

- Network Analysis
- Quality Improvement Inventory
- Cost Analysis
- Rural / Urban Analysis



Conclusions & Implications

- It is possible to measure both QI and AR using valid and reliable tools
- More centralized funding mechanisms can reduce variation in QI capacity
- Increased AR is associated with state investments and training of director
 - Priorities?
- Limited evidence that QI projects focused on immunization rates may lead to positive outcomes
- No impact of AR / QI on immunization rates

Project Updates

go to: <http://www.publichealthsystems.org/comparison-state-dissemination-and-implementation-strategies-local-health-department-accreditation>

Home

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SYSTEMS FOR ACTION

Research Agenda

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Bridging Health and Health Care

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Pragmatic Randomized Trials

PBRNS

DIRECTIVE

DACS

MPROVE

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TOOLS

A Comparison of State Dissemination and Implementation Strategies on Local Health Department Accreditation Readiness and Quality Improvement Maturity

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Year: 2014

Funding: Dissemination and Implementation Research to Improve Value Study (DIRECTIVE)

Status: Completed

Overview

Establishing the costs and value of such local health department (LHD) initiatives as Accreditation Readiness (AR) and Quality Improvement (QI) is important for determining the activities that can best contribute to more efficient and effective public health delivery. This [Dissemination and Implementation Research to Improve Value \(DIRECTIVE\)](#) project supports the Colorado, Nebraska, and Kansas Public Health Practice-Based Research Networks (PBRNs) in examining and comparing the interactions and differences in AR and QI measures based on system-level dissemination and implementation (D&I) initiatives and the resulting state and local social networks. Led by the Colorado Association of Local Public Health Officials (CALPHO), this consortium of contiguous states will examine differences in financial investment in system-level D&I initiatives and the cost of discrete LHD QI projects using methods developed through Public Health PBRN [Delivery and Cost Study \(DACS\)](#) portfolio. The project also will examine connections of LHD QI projects, QI maturity, and AR with service measures and health outcomes from the [Multi-Network Practice Outcome Variation Examination \(MPROVE\)](#). Interpretation and translation of these complex findings, immediately applicable to the evolving QI and AR contexts at state and local levels, is critical.

Research Areas

- [Financing and Economics](#)
- [Costs, Performance, and Outcomes](#)

Presentations

- [A Comparison of System-Level D&I Strategies on Local Health Department Quality Improvement Maturity](#) (8th Annual Dissemination & Implementation Science Meeting, December 2015)
- [Comparing State Dissemination and Implementation Strategies on Local Health Department Accreditation Readiness and Quality Improvement Maturity](#) (PHSSR Research in Progress Webinar, February 2016 *recording*)
- [Comparison of System-Level Dissemination and Implementation Strategies on Local Health Department Improvement Maturity](#) (Poster presentation, AcademyHealth Annual Research Meeting, June 2016)
- [Measurement of a Public Health Department's Accreditation Readiness](#) (Poster presentation, AcademyHealth Annual Research Meeting, June 2016)

Tools

- [Accreditation Readiness Survey Instrument](#)
- [Customized Report for Each Local Health Department](#)

Commentary



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Questions and Discussion

Webinar Archives

<http://systemsforaction.org/research-progress-webinars>

Upcoming Webinars

Wednesday, March 8, 12-1 pm ET/ 9-10am PT

IMPROVING EFFECTIVENESS OF STD PREVENTION, SCREENING, AND TREATMENT IN LOCAL PUBLIC HEALTH SYSTEMS

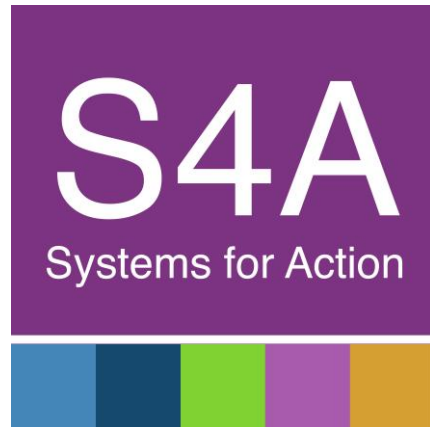
*Lynn Silver, MD, MPH, Public Health Institute, California Public Health PBRN;
Robert Weech-Maldonado, PhD, University of Alabama at Birmingham,
Alabama Public Health PBRN*

Thursday, March 16, 1-2pm ET/ 10-11am PT

UNDERSTANDING RURAL-URBAN DIFFERENCES IN THE IMPLEMENTATION OF POPULATION HEALTH ACTIVITIES

*Lava Timsina, PhD, MPH, Center for Outcomes Research in Surgery (CORES)
School of Medicine, Indiana University*

Thank you for participating in today's webinar!



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For more information about the webinars, contact:

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Acknowledgements

Systems for Action is a National Program Office of the Robert Wood Johnson Foundation and a collaborative effort of the Center for Public Health Systems and Services Research in the College of Public Health, and the Center for Poverty Research in the Gatton College of Business and Economics, administered by the University of Kentucky, Lexington, Ky.

Support for this webinar was provided by the Robert Wood Johnson Foundation. The views expressed here do not necessarily reflect the views of the Foundation.



Speaker Bios

Adam Atherly, PhD, is a Professor in the Department of Health Systems, Management and Policy in the Colorado School of Public Health. Dr. Atherly's main area of research is health economics, with an emphasis on the economics of aging and consumer decisions regarding health plan choice and health. Dr. Atherly has been working in public health services and systems research for several years, with an emphasis on measurement and economic issues. Dr. Atherly has also completed many cost effectiveness studies and has experience in health outcomes research including scale development and evaluations of efforts to improve quality of care and patient safety.

Lisa VanRaemdonck, MPH, MSW, is Executive Director, School of Public Affairs Institute for Governance at the University of Colorado Denver, as of January 2017. Previously, she served as Executive Director of the Colorado Association of Local Public Health Officials (CALPHO) as well as Co-Director for the Colorado Public Health Practice-Based Research Network. Her work is dedicated to supporting the intersection of the school and public service professionals through strategic partnerships, leadership development and training, peer networking, capacity building, and policy communication.

Leslie M. Beitsch, MD, JD, is on the faculty at the Florida State University College of Medicine as Professor of Health Policy and Director of the Center for Medicine and Public Health. He is currently Chair of the Department of Behavioral Sciences and Social Medicine. He also serves as a member of the board of directors for the Public Health Accreditation Board. Previously Dr. Beitsch was the Commissioner of the Oklahoma State Department of Health and worked for the Florida Department of Health at the state and local level for a dozen years.

Jessica Wehle, MPH, serves as Senior Manager for Performance Improvement Initiatives at the National Network of Public Health Institutes. Ms. Wehle works closely with the Centers for Disease Control and Prevention (CDC) and the Robert Wood Johnson Foundation managing a variety of quality improvement and performance management projects, including a peer learning network and a community of practice focused on performance improvement and accreditation.