Systems for Action

Systems and Services Research to Build a Culture of Health

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

Thursday, February 18, 2016, 1:00–2:00pm ET/ 11:00am–12:00pm MT

Comparing State Dissemination and Implementation Strategies on Local Health Department Accreditation Readiness and Quality Improvement Maturity

Presenters

Adam J. Atherly, PhD, is an Associate Professor and Chair of 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. He has been working in public health services and systems research for several years, with an emphasis on measurement and economic issues and cost effectiveness studies, with experience in health outcomes research including scale development and evaluations of efforts to improve quality of care and patient safety. Dr. Atherly received his PhD in Health Services Research, Policy and Administration from the University of Minnesota. *adam.atherly@ucdenver.edu*

Lisa N. VanRaemdonck, MPH, MSW, is Executive Director of the Colorado Association of Local Public Health Officials as well as Co-Director for the Colorado Public Health Practice-Based Research Network. Her work is dedicated to encouraging public health system-level improvements through strategic partnerships, workforce development, peer networking, capacity building, practice-based research and dissemination, and policy development. Prior to her public health career, Lisa worked in public relations and marketing, and has experience with non-profit and business-to-business communications. She earned a Master's in Public Health and a Master's in Social Work from the University of Michigan. *lisa@calpho.org*

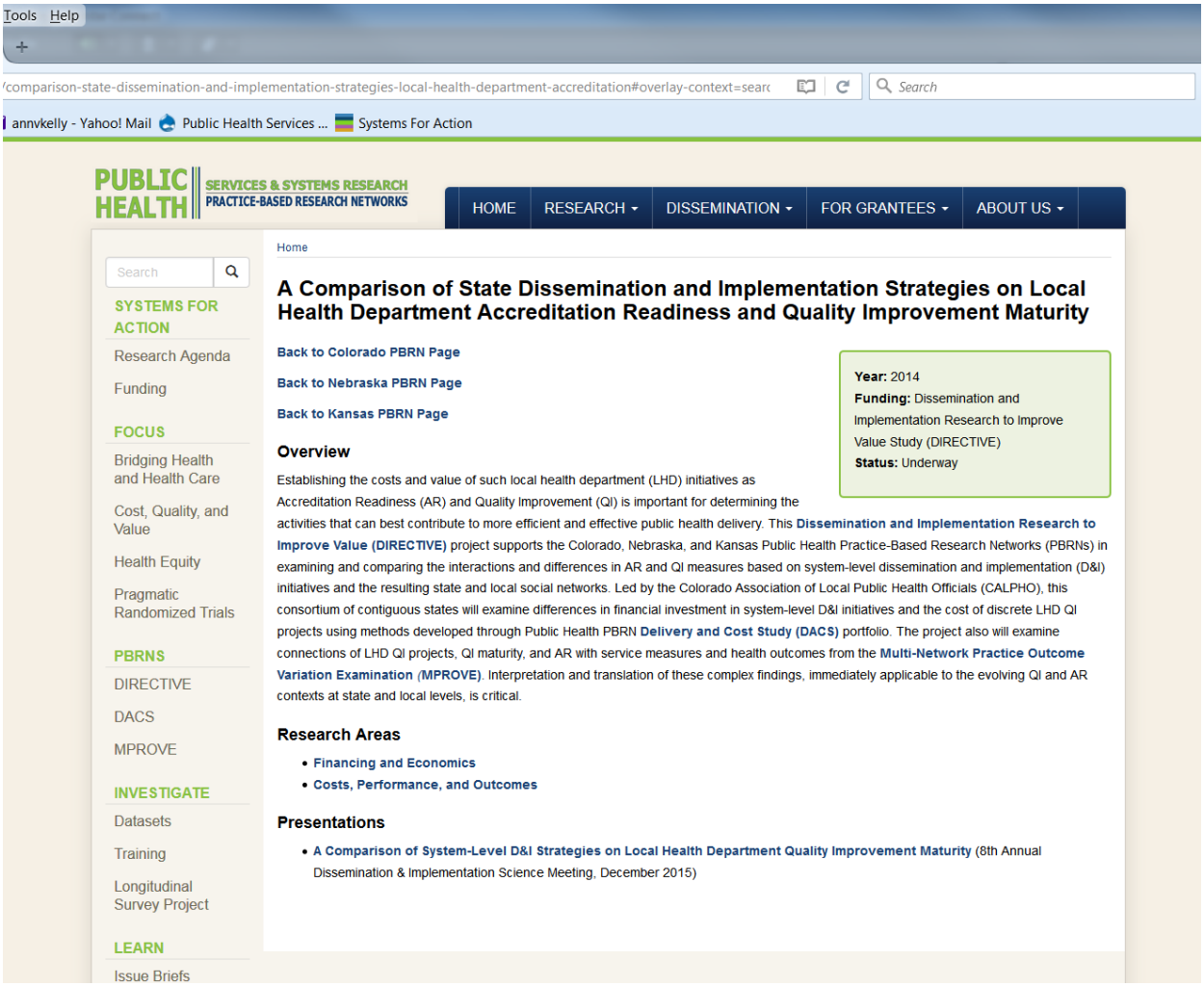
Melanie Whittington, MSPH, is a PhD Candidate in the Department of Health Systems, Management and Policy at the University of Colorado Anschutz Medical Campus where she concentrates on health economics. She is currently finishing her dissertation that investigates cost-effective solutions to detect and prevent healthcare-associated infections both at the hospital and national level. She is interested in evaluating prevention activities and policies designed to improve health outcomes to determine their cost-effectiveness. She is currently employed as the project manager of the DIRECTIVE project for the Colorado Public Health Practice-Based Research Network where she conducts evidence-based public health research to determine efficient practices in public health service delivery. *melanie.whittington@ucdenver.edu*

Commentary

Elizabeth Gyllstrom, PhD, MPH, is a Senior Research Scientist in the Public Health Practice section, Health Partnerships Division, Minnesota Department of Health (MDH). Trained as an epidemiologist, she has extensive experience working with state and local public health data. Previously, Dr. Gyllstrom worked in the MDH Center for Health Statistics, with a focus on maternal and child health research. She has been the Principal Investigator (PI) or co-PI of several public health services and systems research studies and staffs the Minnesota Public Health Practice-Based Research Network (PBRN). Currently, she is the PI on a multi-state, Robert Wood Johnson Foundation-funded study examining the relationship between primary care and public health practice based research networks at the local jurisdictional level. Dr. Gyllstrom received her PhD and MPH degrees in Epidemiology from the University of Minnesota-Twin Cities. *beth.gyllstrom@state.mn.us*

Cindan Gizzi, MPH, is the Community Assessment Manager at the Tacoma-Pierce County Health Department in Washington state. She leads the Department's quality culture and performance management initiatives through its Office of Assessment, Planning & Improvement. Ms. Gizzi serves on the Expert Panel for the Public Health QI Exchange (PHQIX) and leads the Public Health Centers for Excellence, which provide training and technical assistance on all things quality and accreditation to health departments across the country. She received an MPH in epidemiology from the University of California at Los Angeles. *cgizzi@tpchd.org*

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



Systems for Action

Systems and Services Research to Build a Culture of Health

PHSSR Research In Progress Webinar

Thursday, February 18, 2016 *1:00-2:00pm ET/ 11:00am-12:00pm MT*

Cost, Quality and Value of Public Health Services -- DIRECTIVE

Comparing State Dissemination and Implementation Strategies on Local Health Department Accreditation Readiness and Quality Improvement Maturity

Note: *Download today's presentation and speaker bios from the 'Resources' box in the top right corner of the screen.*

Funded by the Robert Wood Johnson Foundation

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Agenda

Welcome: C.B. Mamaril, PhD, RWJF *Systems for Action* program; Research Assistant Professor, U. of Kentucky College of Public Health

Comparing State Dissemination and Implementation Strategies on Local Health Department Accreditation Readiness and Quality Improvement Maturity

Presenters: **Adam J. Atherly, PhD**, Chair and Associate Professor Health Systems, Management & Policy, Colorado School of Public Health; **Lisa N. VanRaemdonck, MPH, MSW**, Executive Director, Colorado Association of Local Public Health Officials; and **Melanie Whittington, MSPH**, Colorado Practice-Based Research Network

Commentary: **Beth Gyllstrom, PhD, MPH,** Senior Research Scientist, Public Health Practice Section, Minnesota Dep't. of Health
Cindan Gizzi, MPH, Community Assessment Manager, Tacoma-Pierce County Health Department, Washington

Questions and Discussion

Dissemination and Implementation Research to Improve Value (PBRN DIRECTIVE)

- Four 24-month DIRECTIVE studies, awarded to consortia of two or more Public Health PBRNs in 2014
- Build on MPROVE and DACS measures and methods
- Examine facilitators for implementation of evidence-based prevention programs
  - Resources and infrastructures
  - ships & inter-organizational coordination

Dissemination and Implementation Research to Improve Value (PBRN DIRECTIVE)

- Studies to assess quality and costs of public health service delivery strategies
- To draw conclusions on comparative effectiveness and value of services
- DIRECTIVE study presentation series:
  - Oct. 14: CT-MA PBRN study
  - Dec. 9: CA-AL PBRN study
  - Feb. 18: CO-KS-NE PBRN study
  - Feb. 25: WA-WI-NY-OR PBRN study

Presenters

Colorado Public Health Practice-Based Research Network (PBRN)

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Project Manager, Colorado PBRN

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, MS

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, MS

NEBRASKA PBRN

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

KANSAS PBRN

- Gianfranco Pezzino, MD, MPH
- Sarah Hartsig, 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
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- 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 Maturity Results
3. Quality Improvement Inventory Results
4. Dissemination to Participants
5. Next Steps

OVERVIEW OF PROJECT

Background

- LHDs are engaging in QI and preparing for accreditation
- Quality improvement (QI) and accreditation readiness (AR) are intertwined for the improvement of public health practice
- Varied support from state-level partners

- 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

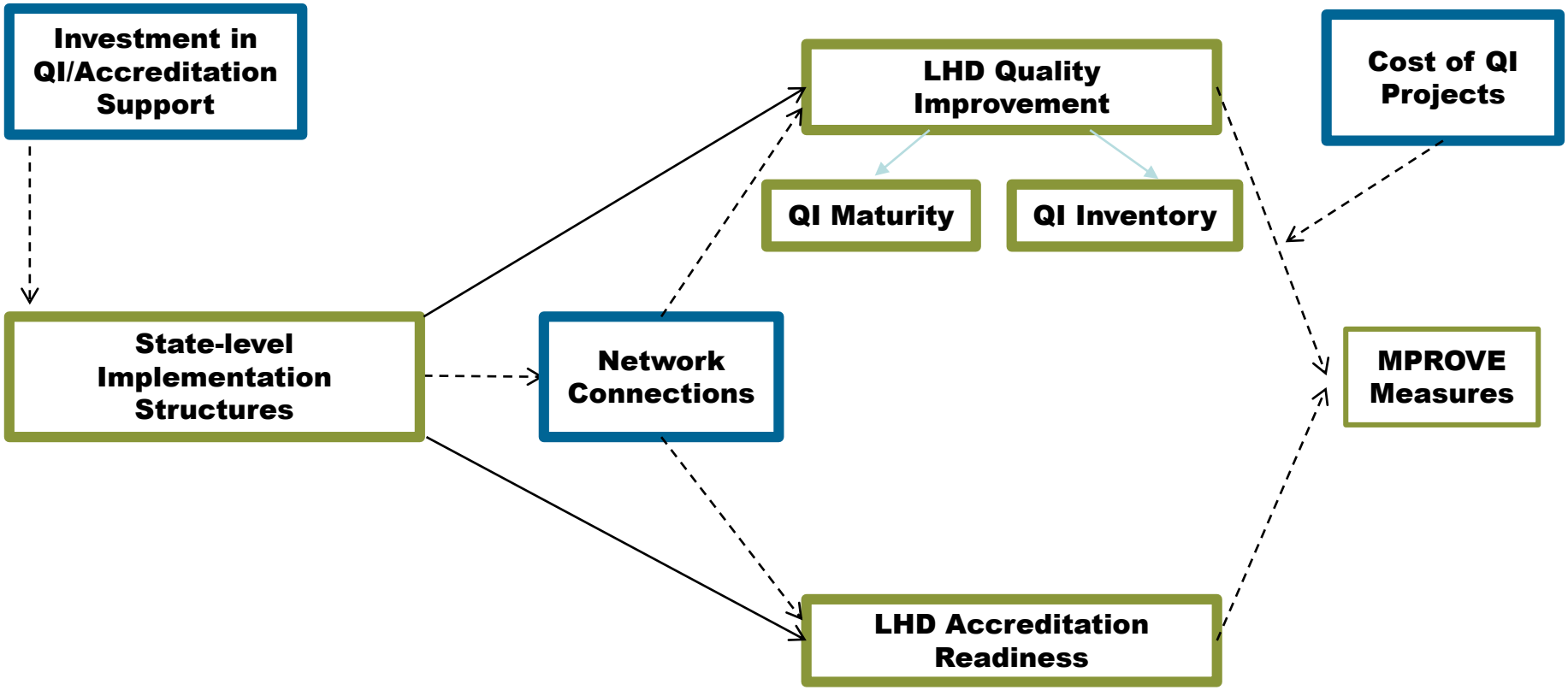
System-Level D&I Movements

- State-level partners implement system-level initiatives: 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
- Research has not been done comparing system-level initiatives and investments to each other and understanding how these investments might lead to differences in QI maturity and AR

Project Goals

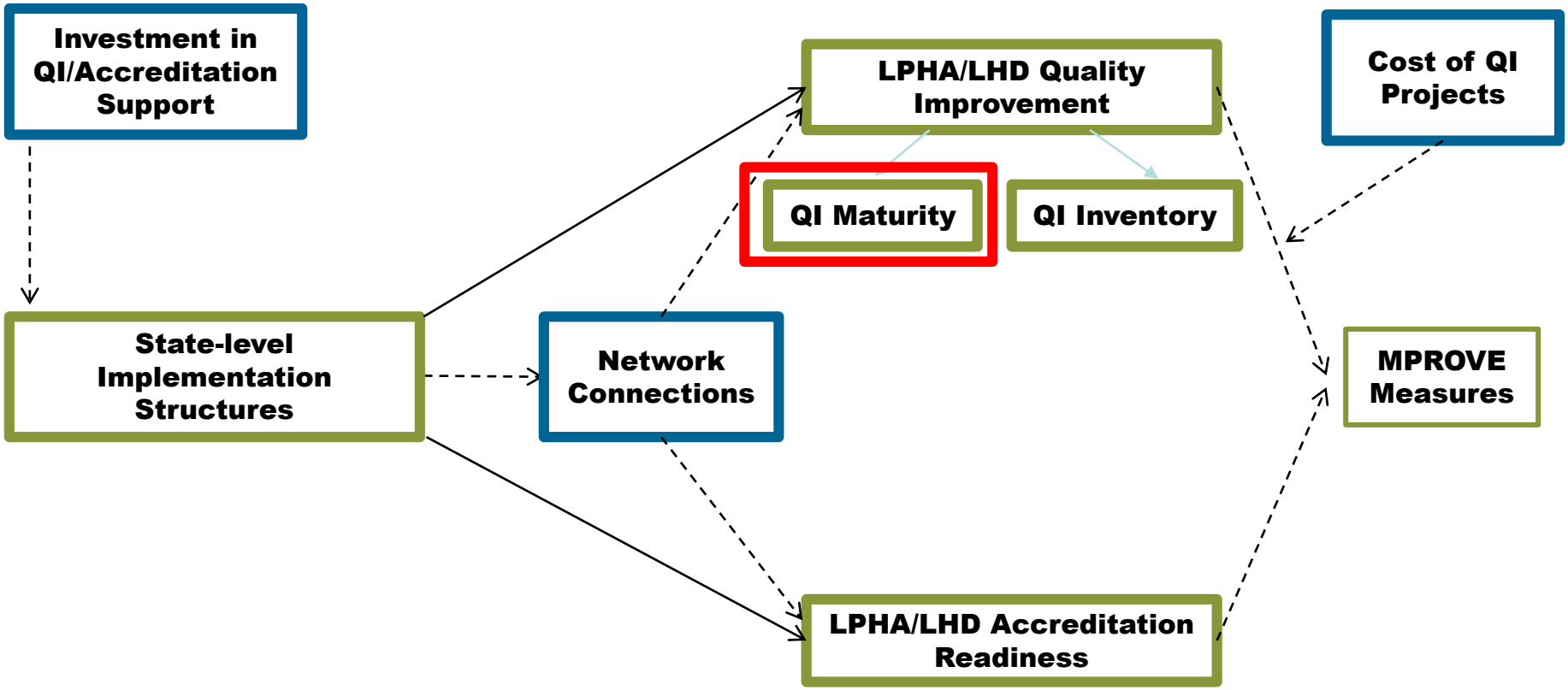
- Examine and compare the interactions and differences in LHD measures of AR and QI in three states
- Examine differences in financial investment in the system-level D&I initiatives and the cost of discrete QI projects
- Examine the connection between LHD's QI project topics, QI maturity and AR with service measures and health outcomes

Conceptual Model



QUALITY IMPROVEMENT MATURITY

Conceptual Model



Research Question

Do health departments in states with more system-level investments and initiatives for QI have higher QI maturity and less heterogeneity between LHDs serving different population sizes?

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

Data Collection

- Survey: Organizational QI Maturity Survey
  - 10 question tool
- Respondents: 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

QI MATURITY (Likert Scale: strongly agree to strongly disagree)
QI Organizational Culture
15. Staff members are routinely asked to contribute to decisions at my public health agency.
16. My public health agency currently has a pervasive culture that focuses on continuous quality improvement.
QI Capacity and Competency
17. The leaders of my public health agency are trained in basic methods for evaluating and improving quality, such as Plan-Do-Study-Act.
18. My public health agency has a quality improvement plan.
19. My public health agency currently has a high level of capacity to engage in quality improvement efforts.
QI Alignment and Spread
20. Job descriptions for many individuals responsible for programs and services at my public health agency include specific responsibilities related to measuring and improving quality.
21. Customer satisfaction information is routinely used by many individuals responsible for programs and services in my public health agency.
22. When trying to facilitate change, staff has the authority to work within and across program boundaries.
23. The key decision makers in my agency believe quality improvement is very important.
24. My public health agency currently has aligned our commitment to quality with most of our efforts, policies and plans.

QI Maturity Scoring

- Previous tools have scoring processes but didn't translate well
  - 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

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

Individualized Reports for LHDs

QI MATURITY AND ACCREDITATION READINESS REPORT

for Pine County Public Health Department (sample)

August | 2015 | Produced by *Colorado Public Health Practice-Based Research Network*

INTRODUCTION

In late 2014 and early 2015, local public health agencies (LPHAs) in Colorado were surveyed about their interest in and readiness for national, voluntary public health accreditation and about the extent to which they were using quality improvement in their work. The questions were answered by the LPHA Director and 36 LPHAs participated. The results of the survey are presented here along with the individual results from Pine.

QI MATURITY

DEFINITION OF QUALITY IMPROVEMENT MATURITY

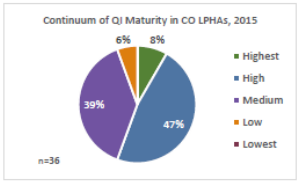
Quality Improvement Maturity is a concept that encompasses an agency's culture, capacity, and alignment of ongoing and systematic improvement efforts (Joly, 2013). The concept aligns with the Quality Improvement Roadmap, www.qiroadmap.org, a resource that helps guide LPHAs through creating a culture of quality improvement throughout their agency. For this report, QI Maturity is separated into three subsets: Organizational Culture, Capacity and Competence, Alignment and Spread.

QI IS MORE THAN JUST A STATE OF MIND

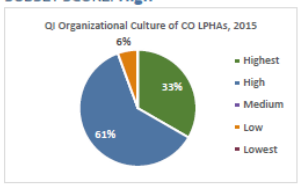
OVERALL ORGANIZATIONAL QI MATURITY

Pine: Overall QI Maturity = **Medium**

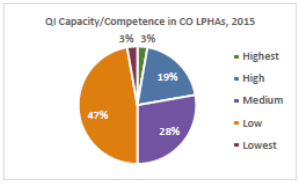
TOTAL SCORE: **Medium**



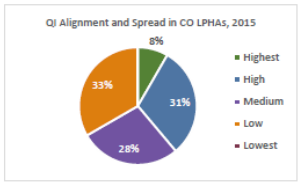
SUBSET SCORE: **High**



SUBSET SCORE: **Low**



SUBSET SCORE: **Medium**



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Analytical Approach

- Analyze differences (between states and population sizes) in overall QI Maturity and QI Maturity domains
  - ANOVA
  - OLS Regression
    - QI Score= $\beta_0 + \beta_1$Population + β_2NE+ β_3KS+ β_4Population*KS + β_5Population*NE + ε
    - 4 Dependent Variables
      - Overall QI Maturity
      - Organizational Culture
      - Capacity and Competence
      - Alignment and Spread
- Hypothesis: LHDs in states with **higher levels of system-level investments in QI** will have **higher QI maturity scores** and **less heterogeneity** across LHDs serving different population sizes.

Results: Descriptive Statistics

	QI Maturity	Organizational Culture	Capacity and Competence	Alignment and Spread
BY STATE				
Colorado	3.51	4.11	**2.72**	3.14
Nebraska	3.8	4.10	**3.35**	3.65
Kansas	3.73	4.19	**2.99**	3.43
BY POPULATION				
0-24,999	3.65	4.19	**2.83**	3.34
25,000-99,999	3.68	4.08	**2.96**	3.39
100,000-499,999	4	4.06	**4.33**	3.56
500,000+	3.71	4.36	**3.14**	3.71

Boldface indicates statistical significance from ANOVAs.

1=Lowest 2=Low 3=Medium 4=High 5=Highest

Results: OLS Regression

	QI Maturity	Organizational Culture	Capacity and Competence	Alignment and Spread
Population	0.006	0.03	0.03	0.06
NE	0.293	0.183	**0.803**	0.557
KS	0.169	0.099	0.164	0.319
KS*Population	0.2	0.04	0.5	0.1
NE*Population	-0.004	-0.2	-0.2	-0.01

Boldface indicates statistical significance.
Population coefficients are per 10,000 people.

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 different significantly in their accreditation intent
  - Across small LHDs (jurisdiction <10,000 people), responders had lower accreditation intent than non-responders

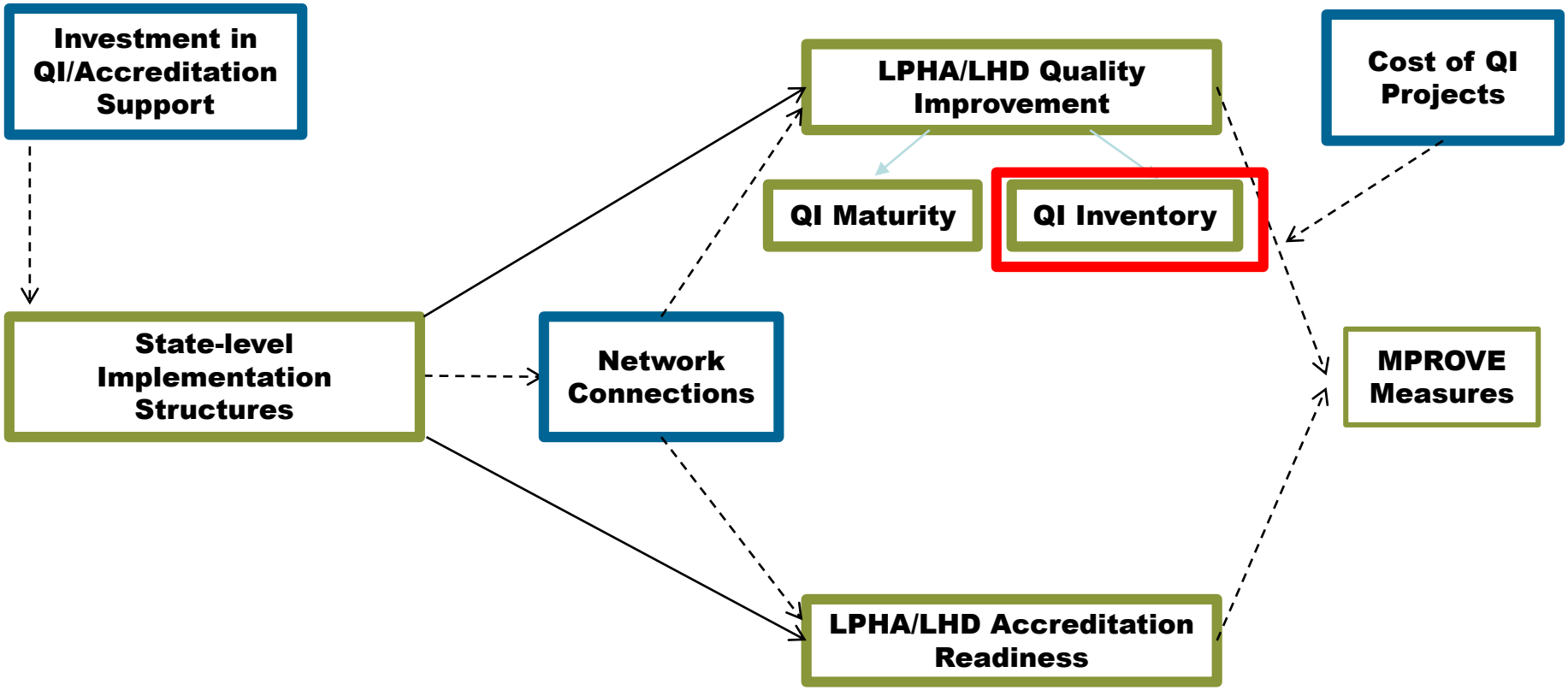
Conclusions & Implications

- Significantly higher scores for QI Capacity and Competence in Nebraska
- Potentially lower heterogeneity across population sizes in Nebraska

- System-level investments and initiatives likely **increase QI maturity** AND **reduce heterogeneity** across LHDs, mostly in the Capacity and Competence domain
- Fruitful area of further research to quantify these investments/initiatives and expand the observation of impact to accreditation readiness
- System-level efforts to improve QI in LHDs could improve the dissemination and implementation of QI at the local level and reduce heterogeneity

QUALITY IMPROVEMENT INVENTORY

Conceptual Model

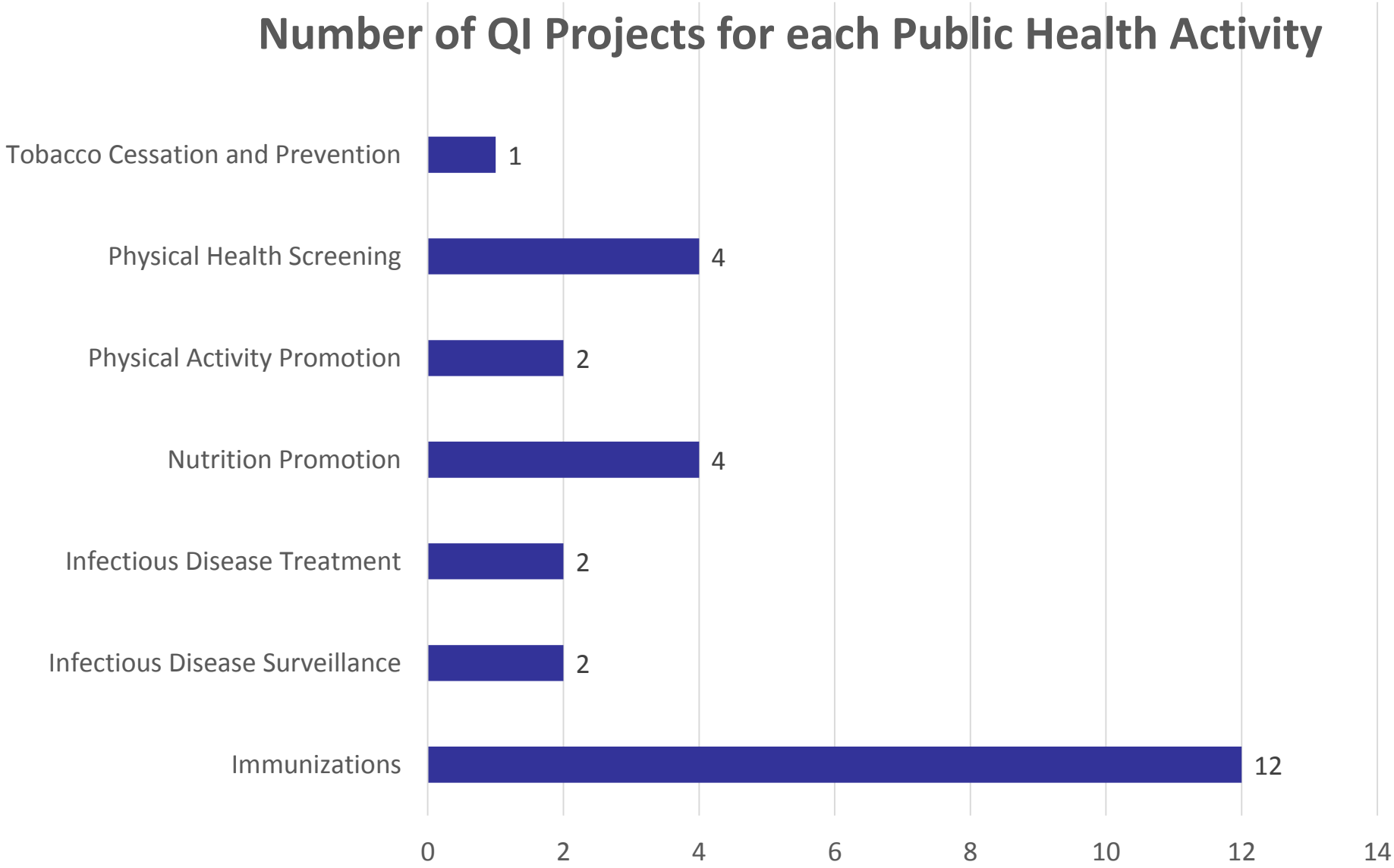


Creation of a QI Inventory

- QI Maturity survey asked: *How many QI projects has the local health department (completed or started) in the last 3 years?*
- QI inventory was sent to all agencies with at least 1 QI project
- Inventory consisted of a subset of questions in Public Health Quality Improvement Exchange (PHQIX)
  - Timeframe of Project
  - Summary of Project
  - Collaborating Partners
  - QI Method/Tool
- Projects in QI Inventory mapped to potential MPROVE measures that would be impacted

QI Inventory Results

- 42 QI projects in inventory
  - 22 from Colorado
  - 9 from Kansas
  - 11 from Nebraska
- Linking to public health activities proved challenging
  - Many projects were agency process improvements
  - Broad impact


Number of QI Projects for each Public Health Activity
Tobacco Cessation and Prevention
1
Physical Health Screening
4
Physical Activity Promotion
2
Nutrition Promotion
4
Infectious Disease Treatment
2
Infectious Disease Surveillance
2
Immunizations
12
0
2
4
6
8
10
12
14

MPROVE Measure Selection

- QI projects more clearly linked with immunization than other public health service
- 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, and children 6-18 years, during the past 12 months.

DISSEMINATION TO PARTICIPANTS

Dissemination and Use of Findings

- Quality Improvement Maturity Customized Report
  - Sent to all participating agencies
  - Presented their results, their state results, and how they compared with similar agencies
- Quality Improvement Project Inventory
  - Searchable by QI Method, Tool, and Accreditation Site Visit
  - Quality Improvement Training/Peer Learning in Colorado

NEXT STEPS

Other Recent Work

- Factor analysis for accreditation readiness
- Conducted interviews with state-level partners to capture QI/AR environment in each state
- Collected quantitative data on the amount of each system-level initiative dispersed to LHDs

Next Steps

- Analyze qualitative data from state-level partners
- Network analysis of connections among LHDs and state-level partners
- Collect immunization MPROVE measure data from three states
- Determine the degree to which system-level investments and initiatives relate to QI maturity and AR through regression analysis
- Determine the degree to which QI maturity and AR are related to immunization MPROVE measures through regression analysis
- Estimate the cost of implementing selected QI projects in LHDs that are likely to impact identified MPROVE measures

Commentary

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Questions and Discussion

Webinar Archives

http://www.publichealthsystems.org/phssr-research-progress-webinars

Upcoming Webinars

Thurs, Feb 25 (12-1p ET/ 9-10a PT)

INTER-ORGANIZATIONAL COLLABORATION IN LOCAL PUBLIC HEALTH SYSTEMS: IMPLICATIONS FOR COSTS, IMPACT, AND MANAGEMENT CAPACITY *[MULTI-PBRN DIRECTIVE STUDY]*

Justin Marlowe, PhD, MPA, and Betty Bekemeier, PhD, MPH, RN, U. of Washington and WA Public Health PBRN

Wed, Mar 16 (12-1p ET)

ECONOMIC, ORGANIZATIONAL, AND NETWORK VARIATION IN PUBLIC HEALTH SERVICES DELIVERY

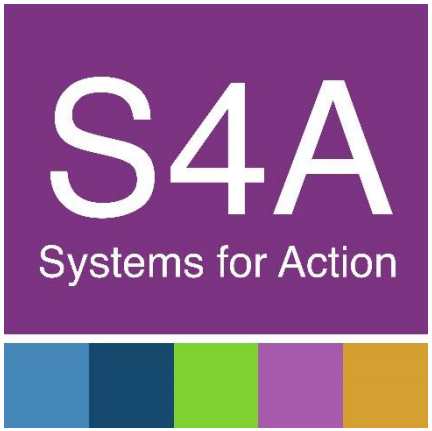
Glen Mays, PhD and Cezar B. Mamaril, PhD, U. of Kentucky College of Public Health

Thurs, Mar 24 (1-2p ET)

QUALITY IMPROVEMENT FOR COST EFFECTIVE SEXUALLY TRANSMITTED INFECTION PREVENTION SERVICES

William Livingood, PhD, and Lori Bilello, PhD, University of Florida

Thank you for participating in today's webinar!



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