Health Equity

Are We Measuring Up?
Exploring Public Health Performance and Health Equity in the United States and Canada

Research In Progress Webinar Series
Thursday, May 19, 2016   1:00-2:00pm ET/ 10:00-11:00am PT

Agenda

Welcome: **C.B. Mamaril, PhD,** *Systems for Action* National Coordinating Center*,* and Research Assistant Professor, University of Kentucky College of Public Health

Are We Measuring Up? *Exploring Public Health Performance & Health Equity in the United States and Canada*

Presenter: **Phuc Dang, MA,** Fulbright Scholar, U. of Kentucky College of Public Health, U. of Victoria, BC *phucdang@gmail.com*

Commentary: **Bernadette Pauly, RN, PhD,** Associate Director, Research and Scholarship, School of Nursing, University of Victoria, British Columbia *bpauly@uvic.ca* and

Gabriela Alcalde, DrPH, Vice President, Policy and Program, Foundation for a Healthy Kentucky *galcalde@healthy-ky.org*

Questions and Discussion

Presenter

Phuc Dang, MA

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Are We Measuring Up?
Exploring Public Health
Performance and Health Equity
in the United States and Canada

Phuc Dang, MA
PhD Student and Fulbright Scholar
University of Victoria, BC & University of Kentucky, College of Public Health

Agenda

- Introduction
- Theoretical Framework
- Relevant CFIR Constructs
- Datasets
- NLSPHS Survey Questions Selected
- Independent Variables Selected
- Research Questions
- Data Analysis
- Preliminary Results
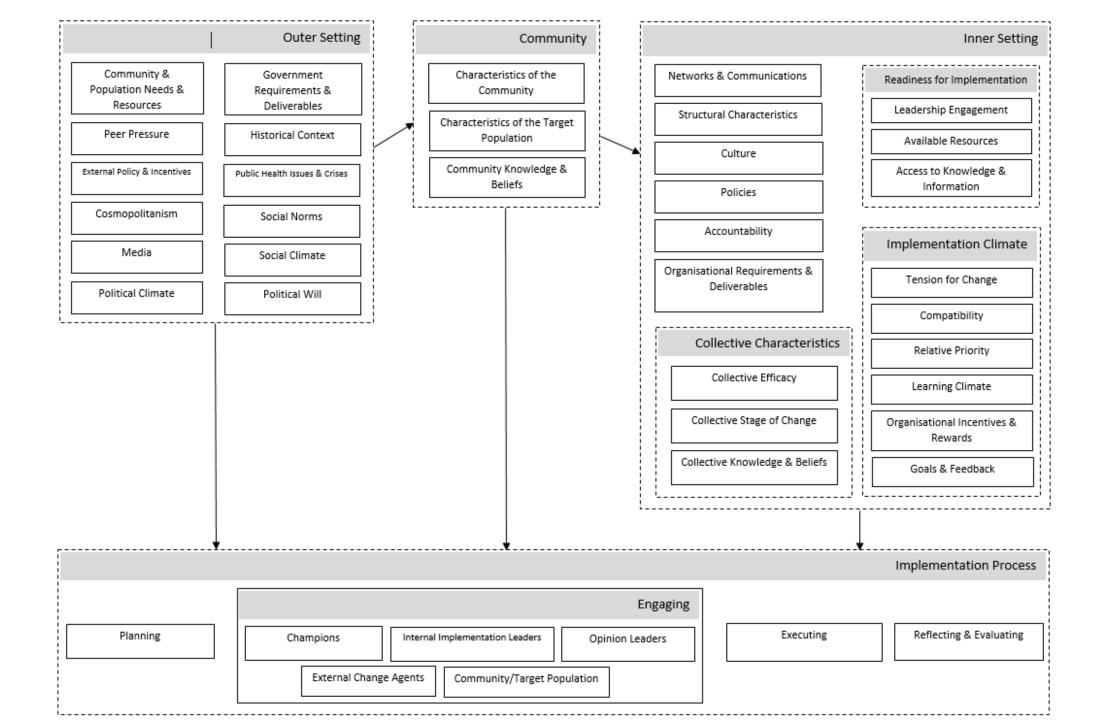- Limitations
- Next Steps

Introduction

- Fulbright Project from September 2015-May 2016 (9 months)

- Explore how accountability structures influence core public health activities

- As well as how performance influences health equity

Theoretical Framework

- Influenced by the original Consolidated Framework for Implementation Research (CFIR) by Damschroder et al. (2009)

- As well as the adapted CFIR – Initial Program Theory by MacDonald et al. (2016)

- Final theory selected CFIR constructs relevant to project

Outer Setting

Community & Population Needs & Resources	Government Requirements & Deliverables
Peer Pressure	Historical Context
External Policy & Incentives	Public Health Issues & Crises
Cosmopolitanism	Social Norms
Media	Social Climate
Political Climate	Political Will

Community

- Characteristics of the Community
- Characteristics of the Target Population
- Community Knowledge & Beliefs

Inner Setting

- Networks & Communications
- Structural Characteristics
- Culture
- Policies
- Accountability
- Organisational Requirements & Deliverables

Readiness for Implementation

- Leadership Engagement
- Available Resources
- Access to Knowledge & Information

Implementation Climate

- Tension for Change
- Compatibility
- Relative Priority
- Learning Climate
- Organisational Incentives & Rewards
- Goals & Feedback

Collective Characteristics

- Collective Efficacy
- Collective Stage of Change
- Collective Knowledge & Beliefs

Implementation Process

- Planning

Engaging

- Champions
- Internal Implementation Leaders
- Opinion Leaders
- External Change Agents
- Community/Target Population

- Executing
- Reflecting & Evaluating

Datasets

- US National Longitudinal Survey of Public Health Systems (NLSPHS)
  - 1998, 2006, 2012, 2014

- Area Resource Files
  - 1998, 2004, 2014

- National Association of County and City Health Officials (NACCHO)
  - 1995, 2005, 2010, 2013

NLSPHS Survey Questions Selected

Question 9
- In the past three years in your jurisdiction, has there been a prioritization of the community health needs that have been identified from a community needs assessment?

Question 10
- In the past three years in your jurisdiction, have community health initiatives been implemented that are consistent with priorities established from a community health needs assessment?

Question 11
- In the past three years in your jurisdiction, has a community health action plan been developed with community participation to address community health needs?

NLSPHS Survey Questions Selected

Question 12
- In the past three years in your jurisdiction, have plans been developed to allocate resources in a manner consistent with community health action plans?

Question 13
- In the past three years in your jurisdiction, have resources been deployed as necessary to address priority health needs identified in the community health needs assessment?

Question 16
- In the past three years in your jurisdiction, have there been regular evaluations of the effects of public health services on community health status?

NLSPHS Survey Questions Selected

Question 17

- In the past three years in your jurisdiction, have professionally recognized process and outcome measures been used to monitor public health programs and to redirect resources as appropriate?

Independent Variables Selected

Variables in 4 Waves

- Boh – local board of health exists?
- Exp – LHD expenditures, current year
- Emp – number of employees
- Fte – LHD FTE employees
- Ftenur – LHD FTE nurses
- Ftephy – LHD FTE physicians
- Ftenut – LHD FTE nutritionists
- Pct65 – percent population over 65
- Povpct – percent population below poverty
- Collpct – percent population with college education

Final Variables Selected for Further Testing

- Boh – local board of health exists?
- Lnexpcap – LHD expenditure per capita
- Povpct – percent population below poverty

Research Questions

- What factors are associated with health equity activities?

- What factors are associated with public health performance activities?

Data Analysis

- Random effects logistic regression

- Outcome variables from the NLSPHS Survey

- Independent variables are from ARF and NACCHO
  - Boh – local board of health exists? (NACCHO)
  - Lnexpcap – LHD expenditure per capita (NACCHO)
  - Povpct – percent of population below poverty (ARF)

Preliminary Results – Question 9

av9	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
boh	.5887708	.2436098	2.42	0.016	.1113044	1.066237
lnexpcap	.5051875	.1509936	3.35	0.001	.2092455	.8011296
povpct	-.0129733	.0211631	-0.61	0.540	-.0544523	.0285057
_cons	-.6621972	.6122845	-1.08	0.279	-1.862253	.5378583
/lnsig2u	-.0031516	.5584371			-1.097668	1.091365
sigma_u	.9984255	.2787789			.5776229	1.725786
rho	.2325445	.0996629			.0920786	.4751499

- Having a board of health is statistically significant (p<.05) and positively associated with **jurisdictions prioritizing the community health needs that have been identified from a community needs assessment**.

- Expenditure per capita is statistically significant (p<.01) and positively associated with **jurisdictions prioritizing the community health needs that have been identified from a community needs assessment**.

Preliminary Results – Question 9

av9	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
boh	.607681	.2478075	2.45	0.014	.1219871	1.093375
povpct	-.1304985	.0452793	-2.88	0.004	-.2192444	-.0417526
lnexpcapxpovpct	.0320867	.0100428	3.19	0.001	.0124032	.0517703
_cons	1.176503	.4034482	2.92	0.004	.3857591	1.967247
/lnsig2u	.1029837	.5246698			-.9253503	1.131318
sigma_u	1.052841	.2761968			.6295971	1.760607
rho	.2520208	.0989036			.1075324	.4851219

- Percent of population below poverty is statistically significant (p<.01) and negatively associated with **jurisdictions prioritizing community health needs that have been identified from a community needs assessment.**

- Interaction between expenditure per capita and percent of population below poverty is statistically significant (p<.01). Expenditure per capita moderates the interaction term.

Preliminary Results – Question 10

av10	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
boh	.4085524	.2714736	1.50	0.132	-.1235261	.940631
lnexpcap	.2702364	.1587539	1.70	0.089	-.0409156	.5813883
povpct	-.0329643	.0239356	-1.38	0.168	-.0798771	.0139486
_cons	1.032382	.68879	1.50	0.134	-.3176216	2.382386
/lnsig2u	.3819524	.4928142			-.5839456	1.34785
sigma_u	1.210431	.2982587			.7467888	1.961923
rho	.308126	.1050603			.1449473	.5391703

- Having a board of health, expenditure per capita, and percent of population below poverty were not significant with **jurisdictions that implemented community health initiatives that are consistent with priorities established from a community health needs assessment**.

- Interaction terms in subsequent analyses for question 10 were not significant.

Preliminary Results – Question 11

av11	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
boh	.756663	.2334633	3.24	0.001	.2990832	1.214243
povpct	-.1215697	.0435207	-2.79	0.005	-.2068687	-.0362707
lnexpcapxpovpct	.0285821	.0093997	3.04	0.002	.010159	.0470052
_cons	.19942	.3695982	0.54	0.590	-.5249791	.9238191
/lnsig2u	.2188601	.4287314			-.6214379	1.059158
sigma_u	1.115642	.2391554			.7329198	1.698217
rho	.2744846	.0853788			.1403621	.4671252

- Percent of population below poverty is statistically significant (p<.01) and negatively associated with **jurisdictions having a community health action plan developed with community participation to address community health needs.**

- Interaction between expenditure per capita and percent of population below poverty is statistically significant (p<.01). Expenditure per capita moderates percent of population below poverty.

Preliminary Results – Question 12

av12	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
boh	.4386326	.203792	2.15	0.031	.0392076	.8380576
povpct	-.1162669	.0378179	-3.07	0.002	-.1903886	-.0421453
lnexpcapxpovpct	.0225503	.0079524	2.84	0.005	.0069638	.0381368
_cons	-.411267	.3181134	-1.29	0.196	-1.034758	.2122237
/lnsig2u	-1.052217	.8656294			-2.748819	.6443856
sigma_u	.5909	.2557502			.2529889	1.380151
rho	.0959494	.0750874			.0190834	.3666857

- Having a board of health is statistically significant (p<.05) and positively associated with **jurisdictions that have developed plans to allocate resources in a manner consistent with community health action plans.**

- Percent of population below poverty is statistically significant (p<.01) and is negatively associated with **jurisdictions that have developed plans to allocate resources in a manner consistent with community health action plans.**

- Interaction between expenditure per capita and percent of population below poverty is statistically significant (p<.01). Expenditure per capita moderates percent of population below poverty.

Preliminary Results – Question 13

av13	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
boh	.4479616	.2164806	2.07	0.039	.0236675	.8722557
povpct	-.1298816	.0401254	-3.24	0.001	-.2085259	-.0512374
lnexpcapxpovpct	.0185739	.0083624	2.22	0.026	.0021839	.0349639
_cons	.7617241	.3449466	2.21	0.027	.0856411	1.437807
/lnsig2u	-.1544798	.5118388			-1.157665	.8487058
sigma_u	.9256678	.2368963			.5605523	1.528601
rho	.2066354	.0839094			.0871841	.4152893

- Percent of population below poverty is statistically significant (p<.01) and negatively associated with **jurisdictions that have deployed necessary resources to address priority health needs identified in the community health needs assessment**.

- Interaction between expenditure per capita and percent of population below poverty is statistically significant (p<.05). Expenditure per capita moderates percent of population below poverty.

Summary of Preliminary Results – Health Equity

- Having a board of health and expenditure per capita is statistically significant and positively associated with jurisdictions that:
  - prioritize community health needs
  - have a community health action plan
  - developed plans to allocate resources that are consistent with community health action plans
  - have deployed necessary resources to address priority health needs

- Interaction between expenditure per capita and percent of population below poverty is statistically significant for jurisdictions that:
  - prioritize community health needs
  - have a community health action plan
  - developed plans to allocate resources that are consistent with community health action plans
  - have deployed necessary resources to address priority health needs

Preliminary Results – Question 16

av16	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
boh	-.3439949	.2522468	-1.36	0.173	-.8383896	.1503997
lnexpcap	.3339508	.1476163	2.26	0.024	.0446282	.6232733
povpct	-.0400996	.0222414	-1.80	0.071	-.0836918	.0034927
_cons	-1.179996	.6339817	-1.86	0.063	-2.422577	.0625855
/lnsig2u	.5418358	.3876948			-.2180321	1.301704
sigma_u	1.311167	.2541664			.896716	1.917173
rho	.3432123	.0873932			.1964108	.5276857

- Expenditure per capita is statistically significant (p<.05) and positively associated with **jurisdictions having regular evaluations of the effects of public health services on community health status**.

- Interaction terms in subsequent analyses for question 16 were not significant.

Preliminary Results – Question 17

av17	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
boh	-.1215372	.2454582	-0.50	0.620	-.6026264	.3595519
lnexpcap	.0988737	.1417665	0.70	0.486	-.1789835	.376731
povpct	-.079696	.0226915	-3.51	0.000	-.1241705	-.0352214
_cons	.6059652	.6245375	0.97	0.332	-.6181058	1.830036
/lnsig2u	.5222461	.3730861			-.2089892	1.253481
sigma_u	1.298387	.2422052			.9007797	1.871501
rho	.3388101	.0835779			.197842	.5156534

- Percent of population below poverty is statistically significant (p<.01) and negatively associated with **jurisdictions that have used professionally recognized process and outcome measures to monitor public health programs and to redirect resources as appropriate**.

- Interaction terms in subsequent analyses for question 17 were not significant.

Limitations

- Data obtained from metropolitan communities and does not include public health activities in rural settings

- Limited health equity variables available in all four waves of data
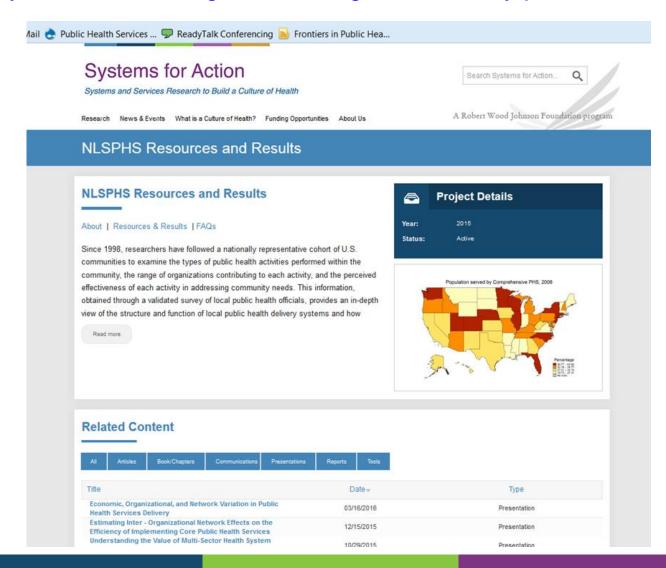
Next Steps

- Perform predicted probabilities on analyses to obtain level of association (by end of May 2016)

- Adapt NLSPHS survey to Canadian context to conduct future comparison studies (by 2017)

- Final results will be prepared for conferences and journal submissions (by end of May and June 2016)

Acknowledgements

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- Dr. Marjorie MacDonald and Dr. Bernie Pauly for contributing to the development of the project

- Lava and CB for helping to manage the dataset

Project Information & Updates

go to: *http://www.systemsforaction.org/national-longitudinal-survey-public-health-systems-nlsphs*

Commentary

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Questions and Discussion

Webinar Archives & Upcoming Events

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

Upcoming Webinars

June 1, 2016 (12-1p ET/ 9-10a PT)
Effects of Cross-Jurisdictional Resource Sharing on the Implementation, Scope and Quality of Public Health Services
Justeen Hyde, PhD, Institute for Community Health & Harvard Medical School, and Debbie Humphries, PhD, MPH, Yale School of Public Health

June 23, 2016 (12-1p ET/ 11-12a CT)
Improving the Efficiency of Newborn Screening from Collection to Test Results
Beth Tarini, MD, MS, University of Iowa College of Medicine, formerly University of Michigan Medical School

July 6, 2016 (12-1p ET/ 9-10a PT)
Developing Public Health Policy Research Frameworks with Concept Mapping
Marjorie MacDonald, RN, MSc, PhD, Applied Public Health Chair and
Bernadette M. Pauly, RN, PhD, Associate Director, Research and Scholarship,
School of Nursing, University of Victoria, British Columbia

Thank you for participating in today's webinar!

For more information about the webinars, contact:

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Speaker Bios

Phuc Dang, MA is a third year doctoral student in the Social Dimensions of Health program at the University of Victoria. She has a strong interest in public health services and systems research (PHSSR), and she is a research fellow in the Equity Lens in Public Health (ELPH) program of research at the University of Victoria. Her work focuses on public health performance and exploring priorities and strategies of health equity in British Columbia. She has received several research and leadership awards including a 2015-16 Fulbright Scholarship, an AcademyHealth Public Health Systems Research Student Scholarship, an Ontario Graduate Scholarship, and the Ida Marietta Houston Graduate Scholarship.

Bernadette M. (Bernie) Pauly, RN, PhD is an Associate Professor in the School of Nursing and a Scientist in the Centre for Addictions Research of BC. She is a member of the Renewal of Public Systems and Services Research Collaborative, and co-leads two studies of implementation of public health systems and services and integration of health equity in public health. Dr. Pauly is an inaugural University of Victoria Provost's Community Engaged Scholar and received national awards for her work in promoting health equity and social justice

Gabriela Alcalde, DrPH, MPH is Vice President of Policy and Program at the Foundation for a Healthy Kentucky where her responsibilities include implementing the Foundation's Strategic Plan. She leads the Foundation's health policy work, and has experience in the government, nonprofit, academic, and community sectors, including qualitative research, community engagement, policy analysis and development, program development and implementation, capacity building, and advocacy. Dr. Alcalde is actively involved with boards and coalitions addressing public health policy, health equity, and communities of color.