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Predictors of evidence-based decision making and population health practice in LHDs

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Disclosure

• Neither we, nor our spouses or partners have had a financial, professional or personal relationship that might potentially bias and/or impact the content of the educational activity/session.

• Kay Lovelace, Robert Aronson, Kelly Rulison, Gulzar Shah, and Mark Smith
Determining what factors influence LHDs to meet their responsibility for improving population health

• To what extent do LHDs use a population health approach?

• To what extent do local health departments (LHDs) address community health issues using an EBPH approach?

• What factors predict using these approaches?
Today’s objectives

• To identify indicators of evidence-based decision making and population health practice in the 2010 NACCHO Profile Survey

• To identify multi-level predictors of LHD use of evidence-based decision making and population health practice

• To discuss recommendations for LHD and/or state practices to enhance the use of evidence-based decision making and population health practice
Methods: Dataset

• Harmonized PHSSR dataset comprised of:

  – NACCHO 2010 Profile of Local Health Departments Study
  – ASTHO 2010 Profile of State Health Departments Study
  – 2010 Census data
  – Area Resource File data
  – County Health Rankings data
Methods: Sample

- All LHDs that completed both Core Module and Module 2 (n=516) of the NACCHO Profile survey
  - 83% of those LHDs to which Module 2 was administered
Methods: Procedure

• Developed initial conceptual framework and selected variables

• Sought advice from expert panel of individual researchers, representatives of key organizations (NACCHO, ASTHO, NALBOH) and of state and local public health agencies (n=14)

• Revised conceptual framework

• Revised selection of questions to represent outcome variables using available items in 2010 NACCHO Profile Survey
  – Evidence-based Decision Making
  – Population health
Analyses

• Descriptive analysis

• Multi-level modeling with predictors at the state and local levels for outcome variables of:
  – Evidence-based decision making strategies
  – Population health strategies
PRELIMINARY RESULTS
Measures: Evidence-based decision making

- Collected surveillance and epidemiological data (7 types of surveillance – 0 - 2 points)

- Engaged the community through the use of surveillance and community context data (County Health Rankings – 1 point)

- Conducted planning based on evidence and data
  - Community Health Assessment (1 point)
  - Community Health Improvement Plan (1 point)
  - Guide to Community Preventive Services (1 point)

- Applied research findings to practices within the LHD (1 point)
Percent of LHDs that used multiple Evidence-based decision making strategies

<table>
<thead>
<tr>
<th>Total number of EBDM strategies used</th>
<th>Percent of LHDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>2.5</td>
</tr>
<tr>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>none</td>
<td>2</td>
</tr>
</tbody>
</table>
Measures: Population health strategies

- Performed population-based primary prevention activities (8 points - nutrition, tobacco, physical activity, chronic disease prevention, injury, substance abuse, violence, unintended pregnancy)

- Adopted local public health ordinances or regulations during the last 2 years (5 points)
  - Tobacco prevention and control
  - Nutrition or physical activity
  - Indoor air quality
  - Land use planning
  - Emergency preparedness or response
Percent of LHDs that used multiple population health strategies

Total number of population health strategies performed:

- 15: 0
- 14: 0.4
- 13: 0.6
- 12: 2
- 11: 4
- 10: 8
- 9: 9
- 8: 15
- 7: 13
- 6: 11
- 5: 12
- 4: 12
- 3: 13
- 2: 15
- 1: 0
- none: 8

Percent of LHDs
# Does context matter?

<table>
<thead>
<tr>
<th></th>
<th>Evidence-based decision making</th>
<th>Population health strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jurisdiction size</td>
<td>Yes 👆</td>
<td>Yes 👆</td>
</tr>
<tr>
<td>Percent in poverty</td>
<td>No relationship</td>
<td>Yes 👆</td>
</tr>
<tr>
<td>Percent &lt; 18 years</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Percent non-white</td>
<td>No relationship</td>
<td>Yes 👇</td>
</tr>
<tr>
<td>Percent with college education</td>
<td>Yes 👆</td>
<td>Yes 👆</td>
</tr>
</tbody>
</table>
## Do state strategies matter?

<table>
<thead>
<tr>
<th></th>
<th>Evidence-based decision making</th>
<th>Population health strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>State population</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Expenditures per 1000</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>FTEs per 1000</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>FTEs in Epid, Bios, HEED and Nutr per 1000</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Technical Assistance to local level</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Top executive degree, MD or PH</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Governor appoints or removes SHO</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Partnerships</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
</tbody>
</table>
Does local control make a difference?

<table>
<thead>
<tr>
<th></th>
<th>Evidence-based decision making</th>
<th>Population health strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of board of health</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Board of health can hire/fire director</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Policy-making board of health</td>
<td>Yes ↗</td>
<td>Yes ↗</td>
</tr>
<tr>
<td>State controlled LHD (compared to local)</td>
<td>Yes ↘</td>
<td>Yes ↗</td>
</tr>
<tr>
<td>Shared state-local LHD (compared to local)</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Percent revenues local</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
</tbody>
</table>
# Do resources matter?

<table>
<thead>
<tr>
<th>Resource Description</th>
<th>Evidence-based decision making</th>
<th>Population health strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditures/1000, middle 1/3 LHDs</td>
<td>Yes  ➪</td>
<td>Yes  ➪</td>
</tr>
<tr>
<td>Expenditures/1000, top 1/3 LHDs</td>
<td>Yes  ➪</td>
<td>Yes  ➪</td>
</tr>
<tr>
<td>LHD employees per 1,000 population</td>
<td>Yes  ➪</td>
<td>No relationship</td>
</tr>
<tr>
<td>Budget decrease (not including 1 time H1N1)</td>
<td>Yes  ➪</td>
<td>Yes  ➪</td>
</tr>
<tr>
<td>Percent employees laid off or lost via attrition</td>
<td>No relationship</td>
<td>Yes  ➪</td>
</tr>
</tbody>
</table>
### Does a prepared workforce matter?

<table>
<thead>
<tr>
<th></th>
<th>Evidence-based decision making</th>
<th>Population health strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top executive tenure</td>
<td>No relationship</td>
<td>Yes ▲</td>
</tr>
<tr>
<td>Top executive, public health degree</td>
<td>Yes ▲</td>
<td>Yes ▼</td>
</tr>
<tr>
<td>Top executive, medical degree</td>
<td>Yes ▼</td>
<td>No relationship</td>
</tr>
<tr>
<td>Top executive, nursing degree</td>
<td>No relationship</td>
<td>No relationship</td>
</tr>
<tr>
<td>Departmental expertise, Epidemiologist</td>
<td>Yes ▲</td>
<td>Yes ▲</td>
</tr>
<tr>
<td>Departmental expertise, Health educator</td>
<td>No relationship</td>
<td>Yes ▲</td>
</tr>
<tr>
<td>Departmental expertise, Emergency preparedness coordinator</td>
<td>Yes ▲</td>
<td>Yes ▲</td>
</tr>
<tr>
<td>Training, attended HIA training</td>
<td>Yes ▲</td>
<td>Yes ▲</td>
</tr>
</tbody>
</table>
Preliminary recommendations for Policymakers

• Resources (PH expenditures)

• Local governance for EBDM – but state governance connected to population health

• Importance of a policy making local BOH

• Prepared workforce
  • Top executive with PH degree
  • FT top executive
  • Epidemiologist
  • Health Educator
  • Designated Emergency Preparedness coordinator
  • Training (HIA)
Preliminary recommendations for PHSS research

• Investigate number of predictors with associations in opposite directions for EBPM and Population Health

• Important to look more carefully at the impact of state strategies (counter-intuitive that state factors are not showing a difference)

• Important to have conversations between researchers and national policy organizations regarding what new information might be needed in surveys
Limitations

- Cross-sectional data
- Self-report, not independently verified
- Survey questions do not directly map the constructs we are examining
- Not able to discern if population health strategies are evidence-based or how pervasive evidence-based decision making is
- How respondents interpret questions may vary (e.g. population health) – Need improved data definitions
- Count variables as proxies for EBDM and population health
Thank you!

• Co-authors

• Robert Wood Johnson Foundation

• Expert Advisory Panel Members

• National Network of Public Health Institutes

• National Coordinating Center for PHSSR

• National Association of County and City Health Officials

• Association of State and Territorial Health Officials