4-18-2012

Patterns of Interaction in Public Health Research Networks: Insight from Network Analysis

Glen P. Mays
University of Kentucky, glen.mays@cuanschutz.edu

Right click to open a feedback form in a new tab to let us know how this document benefits you.

Follow this and additional works at: https://uknowledge.uky.edu/hsm_present

Part of the Econometrics Commons, Health and Medical Administration Commons, Health Economics Commons, Health Policy Commons, Health Services Administration Commons, and the Health Services Research Commons

Repository Citation
https://uknowledge.uky.edu/hsm_present/54

This Presentation is brought to you for free and open access by the Health Management and Policy at UKnowledge. It has been accepted for inclusion in Health Management and Policy Presentations by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.
Patterns of Interaction in Public Health Research Networks: Insight from Network Analysis

Glen P. Mays, PhD, MPH
University of Kentucky

Keeneland Conference on Public Health Services & Systems Research • Lexington, KY • 17 April 2012
The Logic of Public Health PBRNs

Common questions of interest

Engaged practice settings

Identify

Translation & application

Research partner

Apply Rigorous research methods

Data exchange

Analysis & interpretation
The Robert Wood Johnson Foundation’s Public Health PBRN Program

- First cohort (December 2008 start-up)
- Second cohort (January 2010 start-up)
- Affiliate/Emerging PBRNs
PBRN Network Analysis Methods

- Used to take an early “snapshot” of network structure and interaction
- Draft instrument developed and validated with Round I networks
- Fielded with first cohort of five PBRNs in 2010, second cohort of 9 PBRNs in 2011
PBRN Network Analysis Methods

- Responses from 356 of 420 individuals meeting case definition for PBRN participant (85%)
- 391 separate organizational participants identified
- 4376 organizational ties
- Constructed network summary measures and diagrams from responses to question about *frequency* and *types* of interaction for research
Types of Public Health PBRN Participants

- Local government agency: 48%
- State government agency: 11%
- Academic institution: 27%
- Other: 6%
- Federal agency: 1%
- Professional association: 7%
Roles played by participants in PBRN activities

- Identifying research topics/ideas
- Designing/planning studies
- Seeking funding for studies
- Implementing research studies
- Disseminating findings
- Applying findings within own organization
- Helping others apply findings

Research organizations vs. Practice organizations

*p<0.05
PBRN Network Structures - CT

Network Centralization = 35.4%

Local practice
State practice
Professional assoc.
Research
Network Centralization = 42.5%
## Network Measures and Organization Type

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>Degree Centrality</th>
<th>Betweenness Centrality</th>
</tr>
</thead>
<tbody>
<tr>
<td>All practice organizations</td>
<td>31.84 (16.16)</td>
<td>0.04 (0.08)</td>
</tr>
<tr>
<td>All research organizations</td>
<td>41.37 (19.43)</td>
<td>0.13 (0.21)</td>
</tr>
<tr>
<td>All organizations</td>
<td>34.84 (17.56)</td>
<td>0.07 (0.14)</td>
</tr>
</tbody>
</table>
## Network Structures Associated with Perceived Benefit

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Coeff.</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network density</td>
<td>0.341</td>
<td>0.112**</td>
</tr>
<tr>
<td>Degree centrality</td>
<td>-0.521</td>
<td>0.227**</td>
</tr>
<tr>
<td>Betweenness centrality</td>
<td>0.148</td>
<td>0.108</td>
</tr>
<tr>
<td>Practice orientation</td>
<td>0.283</td>
<td>0.144*</td>
</tr>
</tbody>
</table>

Estimates from hierarchical ordered logit model controlling for PBRN random effects  
**p<0.05  *p<0.10
## Network Structures Associated with Engagement in Dissemination and Translation Activities

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Coeff.</th>
<th>S.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network density</td>
<td>0.325</td>
<td>0.109**</td>
</tr>
<tr>
<td>Degree centrality</td>
<td>0.673</td>
<td>0.318**</td>
</tr>
<tr>
<td>Betweenness centrality</td>
<td>0.914</td>
<td>0.231**</td>
</tr>
<tr>
<td>Practice orientation</td>
<td>0.883</td>
<td>0.274***</td>
</tr>
</tbody>
</table>

Estimates from hierarchical logit model controlling for PBRN random effects  
**p<0.05    *p<0.10
Perceived Value of PBRN Participation

Benefits outweigh costs

Likelihood of continuing

Practitioners

Researchers
Conclusions and Implications

- Roles and patterns of interaction within PBRNs vary widely.
- PBRNs can serve as effective mechanisms for research engagement and translation.
- Practice agencies that locate peripherally within networks are especially likely to benefit.
- Due to their peripheral location, practice agencies may require targeted resources and incentives to sustain their research engagement.