Local Public Health Resource Allocation
Limited Choices and Strategic Decisions

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Background: Local health department leaders are expected to improve the health of their populations as they “use and contribute to” the evidence base for practice, but effectively providing and utilizing data and evidence for local public health decision making has proven difficult.

Purpose: This study was conducted in 2011 and initiated by Washington State’s public health practice–based research network to identify factors influencing local resource allocation and programmatic decisions among public health leaders facing severe funding losses.

Methods: Quantitative data informed sampling for the collection of interview data. Qualitative methods were used to capture diverse insights of Washington State’s local public health leaders in making decisions regarding resource allocation.

Results: Local decision-making authority was perceived as greatly restricted by what public health activities were legally mandated and the categoric nature of funding sources, even as some leaders exercised deliberate strategic approaches. One’s workforce and board of health were also influential in making decisions regarding resource allocations. Challenges were expressed regarding making use of data and research evidence for decision making. Data were analyzed in 2011–2012.

Conclusions: Programmatic mandates, funding restrictions, local stakeholders, and workforce capacity appear to trump factors such as research evidence and perceived community need in public health resource allocation. Study findings highlight tensions between the literature descriptions of what “should” influence decision making in local public health and the realities of practice. Advancements in practice-based research and evidence-based decision making, however, provide opportunities for strengthening the development of evidence and research translation for local decision making to maximize resources and promote effective service provision.

Introduction

Local public health department leaders are expected by the public to improve the health of their populations as they “use and contribute to” the evidence base for public health practice and “provide expertise” within their communities regarding issues of public health importance.¹ In support of this premise, a network of statewide public health practice–based research networks (PBRNs) was launched by The Robert Wood Johnson Foundation in 2008 as “vehicles for expanding the volume and quality” of research needed in practice for evidence-based decision making.² During this same period, however, the nation’s financial crisis forced public health leaders in local health jurisdictions (LHJs) to make dramatic service and system cuts among their local health departments, while the need remained for these agencies to maintain critical public health functions such as communicable disease control, to respond to emerging public health threats, and to address health disparities.³ Effectively providing and utilizing evidence for local public health decision making regarding how to prioritize services, however, has proven difficult for local health department officials,⁴ and these difficulties can have severe consequences for marginalized communities.
populations when decisions are made in the context of major financial pressure. Brownson advocates for “scientific evidence” to be a key driver for practitioners in selecting public health programs and policies carried out by local health departments, but he also describes “contextual factors,” including the “availability of adequate resources,” that strongly influence this decision-making process. Spring and colleagues, and later Brownson et al., outline a model that captures the array of complex factors, including research evidence, involved in prioritization decisions made by public health leaders (Figure 1). Green suggests that scientific evidence in support of public health interventions often “mask” the complex and understudied influences of “real-world practice” that affect how public health leaders make decisions and allocate funds.

In national surveys of local health department directors, Washington State (WA) was among the less than 20 states that had had at least 75% of their LHJs face lower budgets and fewer staff positions than in the previous year, in 2009, 2010, and 2012. In the context of this financial crisis, local public health practice members of the WA public health PBRN established a research agenda and indicated a strong desire to understand the challenges to and opportunities for effective resource allocation among public health leaders as they made difficult decisions about services and resource allocation. The study described here investigated the factors influencing these decisions among public health leaders, to identify barriers to and opportunities for advancing effective decision making.

Methods

Study Design

In conducting this practice-based research, a participatory, user-centered research approach was used, drawing from principles of community-based participatory research and working with a “community of practice.” These principles included addressing practical questions of interest to public health practice leaders, the ongoing participation of practice leaders to ensure study relevance, the participation of non-academic partners in the research itself, and the integration of findings into action. This study was led by an academic researcher and LHJ director team and engaged an advisory committee of WA PBRN representatives throughout.

The team employed a mixed-methods approach with primary qualitative interview data collected to capture the insights of WA LHJ leaders in making decisions regarding services and the allocation of resources. Secondary quantitative data were used to inform establishment of a representative sample of WA LHJs for semi-structured interview data to be collected and to examine relationships among key variables that would complement qualitative findings. The University of Washington IRB approved this study.

Data Collection and Sampling

Eleven 1-hour telephone interviews with 13 WA leaders from 11 of WA’s 35 county- and multicounty-based LHJs were conducted by the primary investigator from December 2010 to March 2011. Each participant was the LHJ’s director and/or lead administrator. In two agencies, both the LHJ director and a separate administrator participated in a joint interview. Interviews were recorded with permission. Transcripts were reviewed by the research team for accuracy.

Local health jurisdictions were identified for inclusion based on maximum-variation sampling techniques to capture a representative sample across LHJs and include the range of extremes in resulting changes in service provision occurring among LHJs in response to budget deficits. This sampling strategy was selected to best detect the range of approaches taken by WA LHJ leaders in making programmatic decisions. Table 1 broadly describes the

Table 1. Broad characteristics of the local health jurisdictions in the study sample

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Study sample of LHJs</th>
<th>All Washington State LHJs</th>
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<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>Population size of jurisdiction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 50,000</td>
<td>5 (45.5)</td>
<td>13 (37.1)</td>
</tr>
<tr>
<td>&gt; 50,000</td>
<td>6 (54.5)</td>
<td>22 (62.9)</td>
</tr>
<tr>
<td>Full-time equivalent staff in 2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 34</td>
<td>6 (54.5)</td>
<td>20 (57.1)</td>
</tr>
<tr>
<td>&gt; 34</td>
<td>5 (45.5)</td>
<td>15 (42.9)</td>
</tr>
<tr>
<td>2008–2009 LHJ budget changes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decreased</td>
<td>7 (63.6)</td>
<td>22 (62.9)</td>
</tr>
<tr>
<td>Increased</td>
<td>4 (36.4)</td>
<td>13 (37.1)</td>
</tr>
</tbody>
</table>

LHJ, local health jurisdiction
LHJ Activities and Services Inventory Survey

Change in service provision was calculated by adding the number of increases and decreases in level of service from 2008 to 2009 per activity in each service domain, as defined by the WA LHJ Activities and Services Inventory Survey (Inventory). The Inventory’s eight service domains include areas such as assessment, environmental health, and communicable disease control and service statistics provided by local and state public health leaders. Each domain had three to eight activities, totaling 34 activities across all domains. Composite scores were calculated for service changes for each LHJ, forming a normal curve depicting the range of service change actions taken. After LHJs with the highest and lowest composite scores were selected, others were selectively identified to provide a balance of LHJs across the range of composite scores, as well as a balance of LHJs within each of these additional factors: local population size, varied geographic locations, and the 2008–2009 percentage change in LHJ budget and number of full-time equivalent (FTE) employees. Quantitative data came largely from WA’s Inventory and WA’s Budget Accounting and Reporting System.

Data Analysis

Interview data were analyzed for themes through open coding, supported by Atlas.ti (v. 5.2) software. Relevant literature and study aims served as guides in developing the initial list of codes. Coding began with a codebook based on factors depicted in Figure 1. Codes were revised and refined after additional analyses and then recoded using a final codebook. Intercoder reliability testing was conducted by research team members coding the same interviews and comparing analyses. Representative quotations were selected to represent themes and a cross-section of participants. Preliminary findings were reviewed with participants and with the study’s PBRN advisory committee for validity testing and soliciting of feedback. Linear regression was conducted with relevant quantitative data, to examine associations between 2008–2009 changes in amounts of LHJ services provided (as per the WA Inventory) and LHJ budget changes and FTE changes. Data were analyzed in 2011–2012.

Results

Key informants represented a broad range of years in their current leadership positions, with an average of 3.9 years. Five participants were clinicians (physicians and nurses), and four participants held public health degrees. Common themes were apparent regarding key factors influencing LHJ leaders in setting priorities and allocating funds. Figure 2 depicts these often overlapping themes, displaying the factors that influenced their decision-making process and the degree of influence of these factors.

The most influential factors, depicted as the largest circles (Figure 2), included legal mandates and the availability of financial resources. Workforce capacity, as well as local policymakers and one’s board of health, were also influential. Perceived community need for a specific service was an important factor to LHJ leaders, although it generally was secondary to more influential factors, depicted in the larger circles. The four most influential factors, as well as the factors of “research, evidence, data” and “community need, availability, and capacity,” are described in detail below.

Mandates

Most participants expressed that maintaining legally mandated public health activities was their first priority in making programmatic decisions. Examples of activities mandated by state and local regulations include notification of certain communicable diseases, restaurant inspections, and maintaining sewage sanitation standards. One informant explained, “If the programs are mandated, we lock them in so they would not show up as potential programs that could be cut because we have to do them. So they are not considered among the services that might be cut. Another participant reflected, “We probably considered less the population’s health and went just by the priorities given by the law. That clearly is not the way to go.” Quantitative findings reflect this stability of service delivery with regard to the mandated services. While controlling for jurisdiction population size and baseline level of services provided in 2008, multiple regression analyses with each service item tested separately indicated that differences in amounts of activity from 2008 to 2009 among “mandated services” included in WA’s Inventory were not significantly associated with 2008–2009 decreases or increases in LHJ budgets.
of individual staff people. One respondent explained, “My goal is to retain the people who represent the highest skill level because we can use them in many ways and lay off the people that represent the lowest skill level because we could get less productivity out of them.” For nearly all study LHJs with population sizes less than 50,000, a staff’s ability to fill multiple roles was influential in staffing decisions. One respondent summarized, “Being a rural county…we have to consider people’s abilities to wear those multiple hats because we don’t have the luxury of specialization here.”

Local Policymakers and Boards of Health

Interview participants described their board of health (BOH) and local policymakers, such as county commissioners, to be influential in determining their allocation of funds for public health services, although the scope of these stakeholders’ influence ranged broadly across participants. Some participants described their local policymakers and BOH as being “pretty involved” and that the BOH “made the decisions.” In such cases, the LHX’s relationship with local policymakers was influential in the outcome of proposed budget cuts. One respondent explained, “in some ways, equally important to your budget proposal is how well have you worked your relations with your County Executive or your County Council or your BOH chair?” However, others described these stakeholders as simply providing “guidance” or even expecting the LHJ leadership to “come with a decision made” such that their BOH role was to “endorse the decisions that were made by the [LHX] agency.”

Community Need, Availability, and Capacity

All of those interviewed placed high value on community need in terms of resource allocation—with “need” determined through assessment, personal experiences, and anecdotes. Community need was generally trumped, however, by the factors described above. One participant explained, “As long as the program was fulfilling a need in the community we really tried to keep it, but when the [program-specific] funding went away I had no choice but to cut it.” For another, once mandates and categorical funding were considered, then “if there was money left over, those were the programs that we would say, ‘let’s prioritize this based on the needs of the community.’” When LHJ leaders made decisions based on community need, an important consideration was whether or not the service was available through another community agency or if the capacity existed among community partners for the service to be transferred to them. For example, a participant stated that they should transfer services, when
possible, to partners in the community “who can do [the service] better, so we can free [our LHJ] up to do things that nobody is doing.”

Research, Evidence, and Data
Local health jurisdictions’ leaders valued making funding allocation decisions based on research, evidence, and data; however, many participants described this as challenging because of the limited workforce capacity they have to collect and/or interpret data. One participant stated: “We get by. It’s not excellence. We don’t have an assessment team and that sort of thing. We have one person who knows how to access the data… but we seemed to have done fine.”

Some respondents perceived trade-offs between providing services and effectively using data: “Am I going to be able to continue to pay for epidemiology? [It’s] really important [but] it’s an extra cost…when you look at something like the cost of assessment versus the value of putting that money in some kind of service…. I’m dropping back to, what does the health department need to do and have in it to survive and be of value?” Other participants expressed the importance of maintaining LHJ capacity to collect data, describing assessment and surveillance as important functions that could not be fulfilled by other local organizations. There was very little mention of utilizing research evidence for decision making, aside from two respondents who indicated they do refer to the CDC’s Guide to Community Preventive Services as a resource.26

Discussion
Findings from this study help unmask what Green refers to as the realities of “real-world” decision making.9 Apparent realities suggest that mandated practices, categoric program constraints, and an agency’s workforce drove much of the selection of programs and policies carried out by WA local public health leaders during this funding crisis. At the same time, some public health leaders interviewed discussed strategic choices made or approaches taken in the context of this restrictive environment. In particular, they described funding allocations that involved prioritizing cross-cutting staff that could fulfill “multiple roles,” making the most of political relationships with board of health members, and maintaining assessment and epidemiology capacity over other programs. The strategic decisions taken by some of these leaders in the face of strong external influences did not reflect any one LHJ setting and exposes opportunity for flexibility and creative leadership even within a particularly restrictive environment.

The heavy reliance on workforce capacity for resource allocation suggests that if retained employees have more skills, the LHJ can maintain a broad range and/or high level of complex services, while being potentially more efficient. This study has implications, therefore, for workforce training and retention such that flexible, well-trained staff meet multiple and changing local needs, particularly in more rural areas or for “highly qualified staff,” as suggested by a PBRN Advisory Committee member, to be shared across LHJs.

Study participants also reported (and showed some quantitative evidence of) attempting to maintain the same level of service, despite staffing cuts. Nationally, local health department service and job losses have been well documented along with increased staff workload and low staff morale.27 The potential for inadequate staffing puts LHJ service quality and, therefore, the health and safety of the populations they serve, at risk.27,28 These findings suggest the need to monitor the quality and outcomes of service delivery, particularly in terms of the health of the marginalized communities that LHJs tend to serve most.

This study affirms and expands on the model by Spring et al.8 (Figure 1). First, although Spring’s model outlines what Brownson refers to as domains that “should enter into” and influence evidence-based decision making,6 this study identified specific factors within those domains that appear to influence and often greatly restrict decision making (Table 2). Second, although Spring’s model illustrates what “needs to be integrated” in evidence-based decisions,8 the current study’s Figure 2 illustrates what leaders are actually taking into account in practice and what influences their approach to

Table 2. Comparing Figure 1’s domains (Spring et al.8) and Figure 2’s factors

<table>
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<tr>
<th>Figure 1: Domains that influence evidence-based decision making (Spring et al.8)</th>
<th>Figure 2: Factors that influence program prioritization</th>
</tr>
</thead>
</table>
| Environment and organizational context | Mandates 
Local policymakers and 
board of health 
Organizational history and 
philosophy |
| Best available research evidence | Research, evidence, 
data |
| Population characteristics, needs, values, and preferences | Community needs, 
availability, capacity |
| Resources, including practitioner expertise | Availability of financial 
resources 
Workforce capacity 
Partnerships |
prioritizing. Figure 2, therefore, identifies factors that fit well within Spring’s domains, but that potentially influence funding allocation decisions to a much greater degree than factors such as research, evidence, and data. In fact, the degree to which data and sources of research evidence such as the Guide to Community Preventive Services were not being used was noteworthy among these leaders.

In as much as categoric funding and available and capable staff are resources that heavily influence decision making in this sample, this echoes research by Brownson regarding the prominence of the “availability of adequate resources” in the decision making of local health officials. Brownson’s study and Spring’s model, however, did not describe the large influence of mandated practices on decision making and the impact of external influences on limiting public health practitioners’ authority. More local public health budget cuts have occurred since this study was conducted, even as local need grows for services provided by many local public health agencies. Thus, it is conceivable that the relative influence of legally mandated practices and categoric funding in relation to programmatic decision making around shrinking budgets has grown. These findings raise important questions for consideration by the public health community, regarding the degree to which mandated public health programs and policies are evidence based and the degree to which evidence-based public health programs and policies should be mandated. These questions heighten the responsibility of public health leaders, researchers, and policymakers to support PBRNs and practice-based research toward facilitating the effective dissemination and implementation of programs and practices that are supported by best available evidence.

More local public health workforce cuts also have occurred since this study was conducted, perhaps further undermining LHZ capacity for accessing and assessing evidence for practice. Despite external constraints, public health leaders in this study strongly desire the opportunity to prioritize community “needs, values, and preferences” in prioritization. This desire, along with the emergence of public health PBRNs dedicated to ensuring the translation of research to practice, creates opportunities for success with innovative strategies developed to support public health practice leaders in their own strategic leadership approaches and in creating and using evidence across all of their programs and policies. Indeed, in evidence of the translational nature of PBRN studies, WA’s practice leaders are already using findings from this study to help inform workforce priorities, to examine creative strategies for resource allocation, and to establish more statewide data-driven decision making around how public health funds are distributed.

Limitations
This study has limitations due to its inclusion of only one state and is, therefore, most applicable to WA’s organizational and political features. The sampling strategy for interview data was designed, however, to ensure a broad spectrum of LHJs and to increase study generalizability, while also addressing the specific research interests of WA’s PBRN. Findings also capture decision-making influences at only one point in time and in response to the recent budget crisis. Study findings appear synergistic with those of the other researchers described who used different samples and points in time.

Conclusion
Study findings highlight tensions between the literature descriptions of what “should” influence decision making in local public health practice and the realities of practice. Funding restrictions, programmatic mandates, local policymakers, and workforce capacity appear to trump other factors such as data, research evidence, and perceived community need—despite the recognition by local public health leaders that these latter factors ought to be critical elements in their decision-making processes. Advancements in practice-based research and the promotion of evidence-based decision making, however, provide opportunities for strengthening the development of evidence and its translation to practice in order to ensure critical relationships between local needs and effective service provision.

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References