



## **Wisconsin Public Health Research Network Priority Research Questions Update August 2015**

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## Background

The Wisconsin Public Health Research Network (WPHRN) formed in 2009 to link public health practitioners and researchers with the goal of increasing research relevant to improving public health services and systems in Wisconsin. The focus of the WPHRN is on public health systems and services research (PHSSR) which is defined as “*A field of study that examines the organization, financing, and delivery of public health services within communities, and the impact of these services on public health*” (Mays, et al., 2009).

In March 2011, WPHRN created a set of 75 priority research questions (PRQ) grouped in seven categories. A three step process was used to identify the original PRQ. This process included a literature review on PHSSR research priorities, a survey to assess relevance and importance of questions according to national and state priorities, and a brainstorming session with WPHRN partners. The WPHRN Steering Committee currently uses the PRQ to help make decisions about which research projects to endorse or support. The PRQ are also available on the WPHRN website as a guide to researchers and practitioner seeking to conduct relevant PHSSR in Wisconsin.

The [WPHRN Strategic Plan](#) (2013) includes four goals. One of the strategic goals is to increase the number of relevant and important PHSSR projects being conducted. In 2015, WPHRN conducted a survey designed to update the 2011 PRQ and identify priorities among them. The aim of this update was to provide an up-to-date list of PRQ that researchers can use when developing research projects that reflect current areas of relevance and importance for public health practice in Wisconsin.

## Methods

Feedback on ongoing relevance and importance of the 2011 PRQ was obtained through an online survey of WPHRN members (n=163). The survey was developed by interns and staff of the WPHRN under the guidance of Dr. Susan Zahner, WPHRN Co-Chair. The survey was piloted by three WPHRN members and revised based on their input. Project information was submitted to the University of Wisconsin, Institutional Review Board and the project was not considered to be research. Invitations to complete the final survey were sent via electronic mail with an embedded link to the survey on February 27, 2015. UW Qualtrics software was used to administer the survey. Two email reminders were given (March 11, 2015; March 18, 2015) and the survey closed on March 25, 2015.

Survey respondents were asked if they had used the 2011 WPHRN PRQ to guide public health practice, research or systems improvement. If the response was yes, they were asked to describe how the PRQ were utilized. Respondents were then asked to rank the seven PRQ categories in order of topics most important to improve public health services in Wisconsin. Categories were ranked from 1-7 with one being the most important and seven being the least important. The mean score for each PRQ category was used to determine overall category ranking. Categories are displayed in rank order in Appendix C.

**Table 1. PRQ Categories**

<b>Public health services and interventions</b>
<b>Organization and structure of public health departments</b>
<b>Finance</b>
<b>Workforce</b>
<b>Laws and Policies</b>
<b>Partnership strategies for health improvement</b>
<b>Public health and related systems</b>

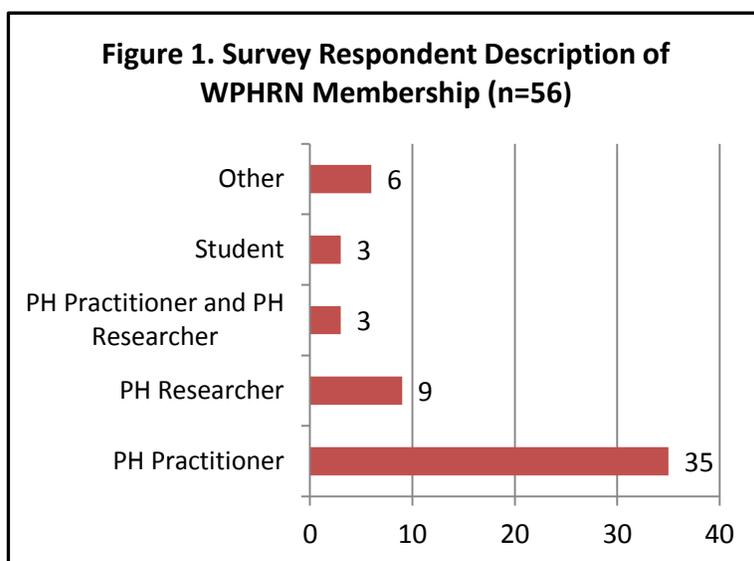
Members were asked to assess the relevance and importance of 2011 PRQ to determine which questions should be included in the update. PRQ categories were randomized during this part of the survey to reduce the possible impact of survey fatigue. Respondents were asked if the PRQ were still relevant to public health practice today. If respondents indicated the PRQ was relevant, they were then asked to select the priority level (high, medium, or low priority) that best reflected their perceptions of the PRQ most important to answer in order to improve public health services in Wisconsin. PRQ were chosen to be included in the 2015 update if they were ranked as relevant by at least 55% of the respondents and if they were ranked as a medium or high priority by at least 50% of the respondents. Survey responses indicating, “I don’t know” were not included when calculating relevance percentages.

Members were given the opportunity to answer the question, “Are there any critical research questions that should be added to the list?” Respondents that suggested new PRQ were asked to select a priority level (high, medium, or low priority) for the question. All new PRQ were included in the update with one exception for a question that was determined to be redundant. New PRQ were assessed and placed into the appropriate PRQ category.

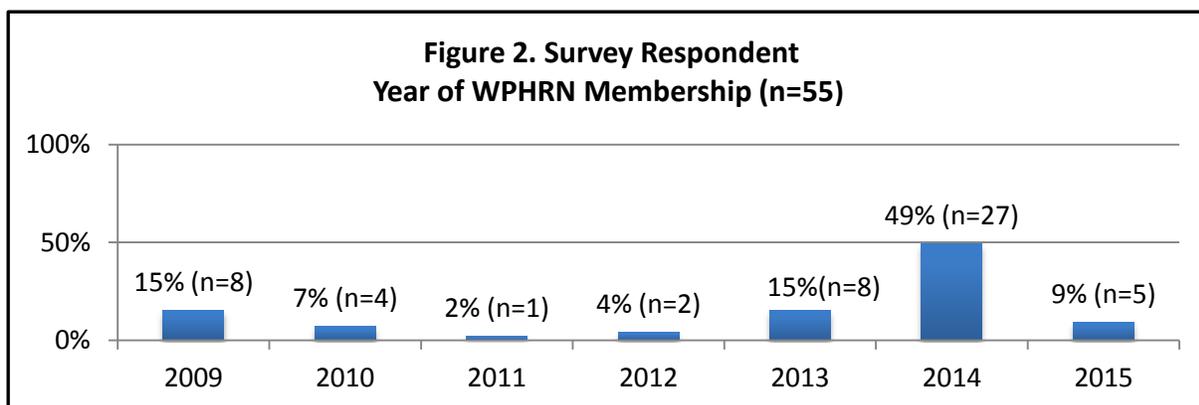
New questions were either added to a PRQ category directly, included with minor modifications for clarity, or merged with 2011 PRQ or other PRQ suggested by survey respondents. Minor edits were made to a small number of 2011 PRQ to correct grammatical errors or to provide clarity. The results of the survey were used to compile the 2015 list of WPHRN PRQ.

### Survey Results

#### *Survey respondents*



The survey had 57 respondents with a response rate of 35% (n=163). As displayed in Figure 1, the largest number of respondents identified as public health (PH) practitioners or public health practitioners and public health researchers (68%, n=38). Figure 2 shows that a large percentage reported beginning their WPHRN membership in 2014 (49%, n=27).

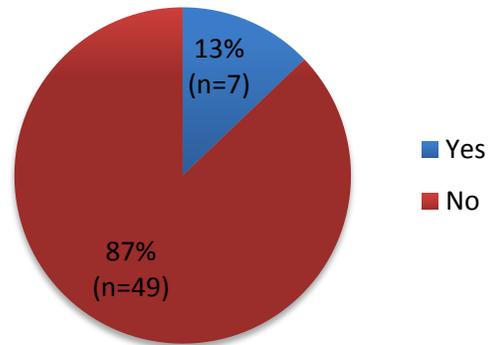


### Use of PRQ

A low percentage of survey respondents (13%, n=7) reported that they had used the 2011 Priority Research Questions to guide public health practice, research or systems improvement. Respondent descriptions of how they have used the PRQ included:

- “Improve existing shared services,”
- “Considered when talking with students and looking at potential grant projects,”
- “I’ve shared it with some of my academic partners,”
- “Review and consider when programs are being updated or eliminated,”
- “Wrote grant to attempt to address one of the PRQs,” and
- “When reviewing funding opportunities.”

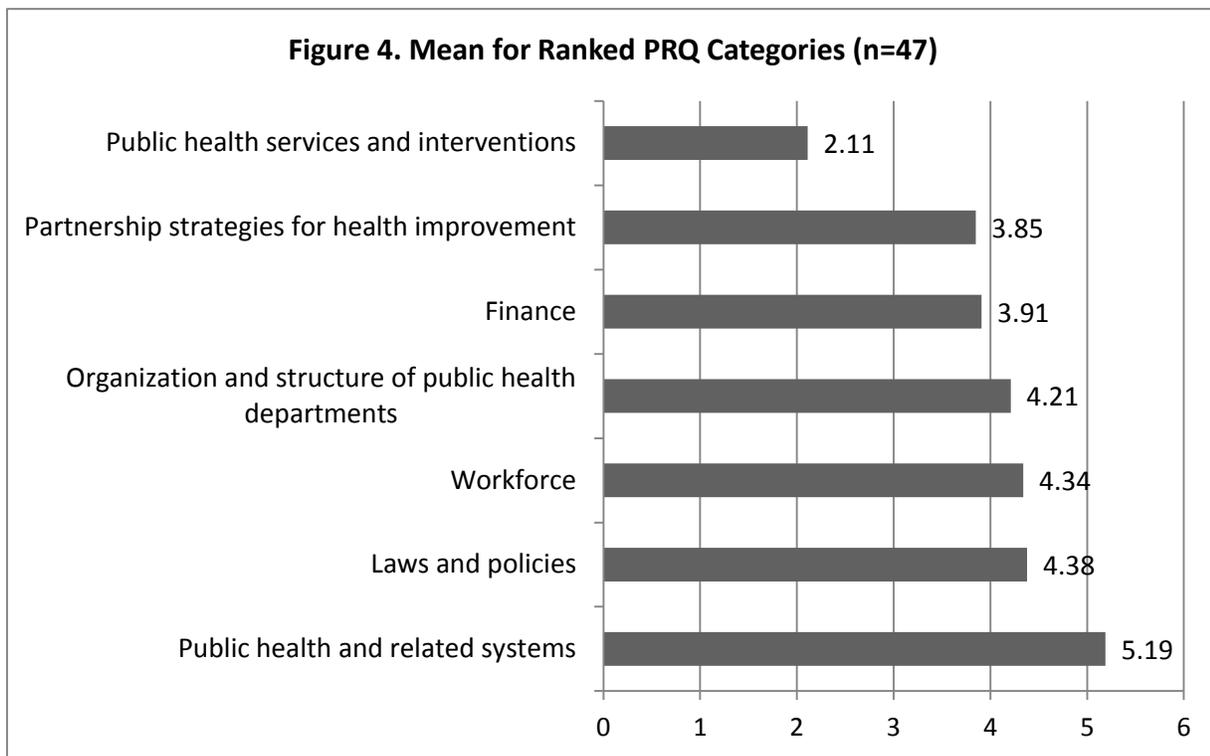
**Figure 3. Use of PRQs (n=56)**



### Rank of PRQ categories

Figure 4 shows that the mean rank for PRQ categories ranged from 2.11 to 5.19. The category receiving the highest mean rank was *Public health services and interventions* and the lowest ranked PRQ category was *Public health and related systems*.

**Figure 4. Mean for Ranked PRQ Categories (n=47)**



### *PRQ relevance and prioritization*

Sixty-three of the 2011 PRQ were still considered relevant by 55% or more of the respondents. Respondent results for PRQ prioritization varied greatly and showed inconsistent patterns. It was determined that prioritization of questions within categories could not be done for this update. PRQ relevance and medium or high priority percentage calculations are included in Appendix A.

### *2011 PRQ inclusion*

As shown in Appendix A, 62 of the 2011 PRQ (83%, n=72) were considered still relevant by at least 55% of respondents and were ranked as a medium or high priority by 50% or more of the respondents. These questions were included in the update. Only one PRQ met the criteria for relevance, but did not meet the criteria for prioritization. This PRQ was not included in the update.

### *New PRQ*

Fifty-one questions were suggested and are presented in Appendix B.

**Table 2. Number of PRQ Removed, Modified and Added**

<b>PRQ Category</b>	<b>2011 PRQ</b>	<b>PRQ Removed</b>	<b>Modified 2011 PRQ</b>	<b>New PRQ</b>	<b>2015 PRQ</b>
<b>Public health services and interventions</b>	18	1	0	5	22
<b>Partnership strategies for health improvement</b>	5	1	0	5	9
<b>Finance</b>	4	0	0	9	13
<b>Organization and structure of public health departments</b>	20	4	0	4	20
<b>Workforce</b>	13	3	0	9	19
<b>Laws and policies</b>	10	3	1	10	17
<b>Public health and related systems</b>	5	1	1	5	9
<b>Total</b>	75	13	2	47	109

## Discussion

### *Limitations*

One limitation to this survey was the low response rate (response rate=35%, n=57). A higher overall response rate would have provided a broader range of perspectives to include in the update. However, the fact that over half of the survey respondents identified themselves as being a public health practitioner or both a public health practitioner and a public health researcher (68%, n=38) is noteworthy. The public health practitioners' point of view was critical in updating the WPHRN PRQ to reflect the current needs for public health practice and to shape questions for future public health research in Wisconsin.

Survey length was considered when designing the survey. Two survey methods were originally considered for implementation; a single merged survey including questions from all PRQ categories or the administration of multiple surveys addressing one category at a time. A single, merged survey was pilot tested and administered so that all questions could be considered by respondents when setting priorities, due to the possibility of question overlap. However, it is possible that survey length impacted the extent to which respondents answered questions about PRQ relevance. Each PRQ category had between 16-18 respondents who did not answer at least 50% of the questions about PRQ relevance. PRQ categories of questions were randomized, which may have reduced the impact of survey fatigue by more equally distributing the missing responses. WPHRN may want to consider piloting a method that uses multiple surveys for future PRQ updates. However, it is unknown if the use of multiple surveys would reduce survey fatigue.

The survey was only administered to WPHRN members (n=163). The fact that only a small number of Wisconsin public health practitioners and researchers are members of WPHRN could be considered a project limitation. However, an argument could be made that the WPHRN PRQ update should be developed from the views of WPHRN members who have an interest in public health research. In addition, there are very few barriers to WPHRN membership and there is no cost to join. As there is no other known list of public research questions that focus on Wisconsin public health services and systems, participation by non-WPHRN members may be beneficial. Consideration should be given to disseminating a future survey to update WPHRN PRQ more broadly to Wisconsin public health practitioners and researchers that are not WPHRN members.

Thirteen of the original 2011 PRQ were not included in the 2015 update based on respondent perceptions of relevance and priority levels. No information was collected pertaining to reasons as to why a question was no longer relevant or a low priority. For example, Table 3 shows three questions related to local health department accreditation that were determined to no longer be of relevance to public health practice. Seven Wisconsin health departments have become accredited since the development of the 2011 WPHRN PRQ. Of the seven accredited health departments, six have at least one WPHRN member. Wisconsin health departments' experience and knowledge about accreditation has grown and may have helped to already answer these questions about accreditation. The accreditation process has also progressed to the point where some questions might no longer be of interest. In addition, the first question about health department size thresholds may not be of interest to larger health departments. Smaller health departments may have shifted more attention towards assuring that standards are met and documented through other arrangements (e.g. shared services, partnerships, etc.) instead of focusing on the number of staff needed to directly provide services or engage in activities. The second and third questions focus on accreditation readiness. Population size in and of itself may not be thought to impact accreditation readiness. Furthermore, health departments have a great deal of knowledge about the unique factors associated with population size within their jurisdictions and this information may not be of interest. Also, health educators may have been found to be valuable in the role of coordination, but accreditation readiness may be influenced by many other important factors (e.g. policy makers,

**Table 3. PRQ Removed: Organization and Structure of Public Health Departments, Local Health Department Accreditation**

<b>Is there a LHD size threshold (measured by staff, community population or other indicators) necessary to meet accreditation standards?</b>
<b>Does population size in LHD jurisdiction impact readiness for accreditation?</b>
<b>How do health educators influence readiness for accreditation?</b>

resources, etc.). Information about why PRQ are no longer relevant would be beneficial for understanding the changing needs of public health practice.

In May 2015, a literature review was completed on questions from the PRQ category, *Public health services and interventions, Maternal and child health* (Rishi, 2015). With the exception of this literature review, the level to which the WPHRN PRQ has already been addressed has not been assessed. The 2015 update was based on what WPHRN members thought were relevant and important to public health practice. WPHRN members have not been provided information about the extent to which the PRQ have already been answered and this may have impacted their survey responses. Conducting additional literature reviews on PRQ categories and disseminating this information could assist in increasing awareness about current research and future research needs.

#### *Past use of PRQ*

A low percentage of respondents (13%, n=7) reported use of the PRQ to guide public health practice, research or systems improvement. This result is not unexpected when taking into account that over half of the respondents (58%, n=32) began their WPHRN memberships between 2014 and 2015. These members may not have had sufficient time to make use of the PRQ. The WPHRN membership had dramatic growth from 2014-2015 (74 – 163 members). During this time period the WPHRN engaged in several outreach activities to recruit members and disseminate the PRQ to public health practitioners, researchers, and students. The WPHRN should continue efforts to increase the awareness and encourage use of the PRQ by public health services and systems researchers. The WPHRN should also consider broadly disseminating the PRQ to potential funders of PHSSR to promote research that addresses questions of relevance and importance to public health practice in Wisconsin.

#### *PRQ removed*

Sixty-two PRQ (82.7%, n=75) were included in the 2015 update and 13 PRQ (17.3%) were removed based upon the questions' relevance and importance. It is unknown why specific PRQ were no longer considered of relevance or were of lower priority. As already mentioned, understanding the rationale behind why certain questions were deemed less relevant or a lower priority could lead to greater understanding of trends and future needs.

#### *Modified and new PRQ*

As reported in Appendix B, survey respondents identified 51 critical research questions that should be added to the 2015 WPHRN PRQ update. This led to the modification of two 2011 PRQ and the addition of 47 new questions that are included in Appendix C. One question was not included because it was already addressed in the 2011 PRQ and met criteria to be included in the update.

A large proportion of new PRQ (60%, n=47) were from the categories of *Finance, Workforce, and Laws and policies*. Emphasized in these categories were resource efficiency, ensuring competency levels of public health workers, public health nurses in the workforce, and emerging environmental concerns.

#### *PRQ prioritization*

One of the WPHRN strategic goals is to increase the amount of research conducted. This goal was approved by the WPHRN Steering Committee in the [WPHRN strategic plan](#) (2013). One method to help achieve this goal is to identify priorities among the WPHRN PRQs. PRQ categories were ranked in order of importance to improve public health in Wisconsin. Based upon the category mean, the highest

ranking PRQ category topic was *Public health services and interventions* (mean 2.11) and the lowest ranked category was *Public health and related systems* (mean 5.19). It is not surprising that health departments want more evidence to guide the services and interventions that they provide on regular basis. However, it is important to continue research in the area of public health and related systems. Questions included in the category, *Public health and related systems* incorporate broader and more complex concepts that if answered, have the potential to cross multiple areas of interest to public health practice.

Individual PRQ prioritization responses varied greatly and showed no clear, consistent pattern. Individual questions were not able to be prioritized in the 2015 update. Other methods to prioritize the PRQ should be explored. If the PRQ are prioritized, researchers interested in having a greater impact on public health practice could then focus their efforts on PRQ with higher priority levels.

## Conclusions

Funding to conduct PHSSR is limited and there is an abundance of research questions to explore. Therefore, it is important for public health researchers to be aware of and consider research questions of relevance and importance to public health practice when planning research proposals. The WPHRN PRQ was updated in August 2015, and is the only known list of research questions that specifically addresses public health services and systems research in Wisconsin. The 2015 WPHRN PRQ Update reflects the dynamic and changing needs for information to improve public health practice in Wisconsin.

## References

- Rishi, K. (2015). *Literature Review: Assessing Wisconsin Public Health Research Network's Maternal And Child Health Priority Research Questions*. Madison, WI: University of Wisconsin-Madison, School of Medicine and Public Health.
- Wisconsin Public Health Research Network. (2013). *Wisconsin Public Health Research Network Strategic Plan*. Wisconsin Public Health Research Network.

## Appendix A

### Determining 2011 Priority Research Question (PRQ) Inclusion

2011 PRQ relevance and priority level were used as criteria for inclusion in the 2015 PRQ update. Survey respondents were asked if the 2011 PRQ are still relevant today. Respondents were then asked to prioritize each question they identified as being relevant as a low, medium, or high priority of importance.

Sixty-two (82.7%, n=75) of the 2011 PRQ were included in the 2015 update. PRQ considered still relevant by 55% or more of the respondents and ranked as medium or high priority by at least 50% of the respondents were included in the 2015 update. Responses indicating, "I don't know" were not included when calculating relevance percentages. PRQ relevance and medium or high priority percentages are provided after each question. PRQ that were not included in the update are listed.

#### Results: PRQ relevance and medium or high priority percentages

##### Public health services and interventions

###### *Environmental health*

- Does a program of active sampling and testing improve overall water quality of private drinking water wells? **(Relevance =81.2%, n=32) (Medium or high priority=66.7%, n=21)**
- Do risk-based inspections of facilities result in fewer cases of food borne illness? **(Relevance=86.8%, n=38) (Medium or high priority=61.5%, n=26)**

###### *Maternal and child health*

- Does participating in prenatal care coordination (PNCC) and/or WIC reduce the rates of very premature birth? **(Relevance=86.8%, n=38) (Medium or high priority =85.2%, n=27)**
- Does providing "wrap-around" services at WIC clinics result in improved birth outcomes compared to WIC only services? **(Relevance=82.4%, n=34) (Medium or high priority =95.5%, n=22)**
- Does integrating additional services with WIC programs (i.e., PNCC, Health Check, immunizations) result in better program outcomes for WIC and/or the integrated services? **(Relevance=78.8%, n=37) (Medium or high priority=95.7%, n=23)**
- What components (services) within PNCC are associated with positive birth outcomes (e.g., greater gestational age)? **(Relevance=74.3%, n=35) (Medium or high priority =73.7%, n=19)**
- What outreach strategies are most effective in increasing participation in PNCC? **(Relevance=76.5%, n=34) (Medium or high priority =84.2%, n=19)**
- What are the hidden cost expenses to a reduction in infant mortality? **(Relevance=67.9%, n=28) (Medium or high priority =75.0%, n=12)**

###### *Communicable disease*

- Did implementation of WEDSS increase health care provider compliance w/communicable disease reporting requirements? **(Relevance=73.0%, n=37) (Medium or high priority =87.0%, n=23)**

- Do STI reinfection rates differ by type of LHD follow-up? **(Relevance=76.8%, n=34) (Medium or high priority =59.1%, n=22)**
- Are LHD services (e.g. immunizations, STI prevention and control) provided according to USPSF clinical guidelines? **(Relevance=61.8%, n=34) (Medium or high priority =70.6%, n=17)**

#### *Service/program priorities*

- What proportion of services provided by LHDs in Wisconsin is supported by evidence? **(Relevance=80.6%, n=36) (Medium or high priority =88.0%, n=25)**
- Are characteristics of CHIPP processes (e.g., leadership, partnerships, data types, formality) associated with greater likelihood or more effective action on identified priorities? **(Relevance=76.5%, n=34) (Medium or high priority =77.3%, n=22)**
- How do population level services influence health outcomes? **(Relevance=81.1%, n=37) (Medium or high priority =96.0%, n=25)**
- What are the best methods for documenting population level activities? **(Relevance=88.6%, n=35) (Medium or high priority =85.2%, n=27)**
- Do LHDs effectively address AODA issues in both rural and urban communities? **(Relevance=79.4%, n=34) (Medium or high priority =65.0%, n=20)**
- What LHD programs or services provide the best financial return on investment? **(Relevance=91.9%, n=37) (Medium or high priority =86.2%, n=29)**

### **Organization and structure of public health departments**

#### *Local health department accreditation*

- How does structure/staffing of LHD influence readiness for accreditation? **(Relevance=61.8%, n=34) (Medium or high priority =70.6%, n=17)**
- Does LHD accreditation result in improved LHD outcomes or outputs? **(Relevance=91.4%, n=35) (Medium or high priority =89.3%, n=28)**
- Does LHD accreditation result in community health improvement? **(Relevance=88.9%, n=36) (Medium or high priority =96.6%, n=29)**

#### *Merger*

- How do LHD mergers influence local health priorities? **(Relevance=72.7%, n=33) (Medium or high priority =68.4%, n=19)**
- What are the costs, benefits, and cost savings of LHD mergers, acquisitions, and shared service arrangements? **(Relevance=82.9%, n=35) (Medium or high priority =84.0%, n=25)**
- Do mergers increase effectiveness of public health programs? **(Relevance=87.9%, n=33) (Medium or high priority =68.0%, n=25)**

#### *Organizational structure*

- How does health and human service organizational structure compared to independent public health organizational structure influence public health staffing and programs? **(Relevance=71.4%, n=35) (Medium or high priority =72.7%, n=22)**
- How does health and human service organizational structure influence population health outcomes? **(Relevance=74.3%, n=35) (Medium or high priority =70.8%, n=24)**

- How does organizational structure influence service quality? **(Relevance=77.8%, n=36)**  
**(Medium or high priority =95.8%, n=24)**
- Do LHDs organized as independent agencies compared to human services agencies produce higher quality community health assessments? **(Relevance=63.9%, n=36)**  
**(Medium or high priority =77.8%, n=18)**
- Does having an organizational strategic plan influence LHD effectiveness? **(Relevance=75.8%, n=33)** **(Medium or high priority =66.7%, n=21)**
- What LHD and community attributes contribute to improving community health status (e.g. greater life expectancy, specific risk indicators)? **(Relevance=81.8%, n=33)** **(Medium or high priority =95.5%, n=22)**
- Is the typical governmental structure of LHD's conducive to modern day PH practice? **(Relevance=77.1%, n=35)** **(Medium or high priority =73.9%, n=23)**
- What LHD organizational provide the greatest return on investment? **(Relevance=75.0%, n=36)** **(Medium or high priority =90.5%, n=21)**

#### *Performance management*

- What LHD performance management processes are associated meeting performance targets? **(Relevance=71.4%, n=35)** **(Medium or high priority =84.2%, n=19)**
- What are the best quality indicators for measuring performance of LHDs? **(Relevance=94.7%, n=38)** **(Medium or high priority =76.7%, n=30)**

#### **Finance**

- What LHD characteristics are associated with increasing revenues over time? **(Relevance=72.7%, n=33)** **(Medium or high priority =78.3%, n=23)**
- What is the cost of creating a community assessment, a CHIP, and a LHD strategic plan in Wisconsin? **(Relevance=60.6%, n=33)** **(Medium or high priority =75.0%, n=20)**
- What level of LHD funding is necessary (optimal) for improving or sustain health outcomes? **(Relevance=81.6%, n=38)** **(Medium or high priority =100.0%, n=29)**
- Does increased LHD spending result in improved health outcomes? **(Relevance=83.8%, n=37)** **(Medium or high priority =93.1%, n=29)**

#### **Workforce**

##### *Competency*

- What work and worker characteristics are associated with LHD workforce competency? **(Relevance=68.4%, n=38)** **(Medium or high priority =88.9%, n=18)**
- What is the current level of LHD workforce competency? **(Relevance=78.4%, n=37)** **(Medium or high priority =88.5%, n=26)**
- What policy and workforce development programs are needed to improve LHD workforce competency? **(Relevance=88.9%, n=36)** **(Medium or high priority =96.0%, n=25)**
- How do workforce education and experience influence public health service delivery? **(Relevance=80.0%, n=35)** **(Medium or high priority =82.6%, n=23)**
- How does health officer educational level and experience influence LHD performance compared to PHAB standards? **(Relevance=67.7%, n=31)** **(Medium or high priority =88.2%, n=17)**

- What type of provider is required to provide effective PNCC services? **(Relevance=60.6%, n=33) (Medium or high priority =53.3%, n=15)**
- What leadership characteristics and skills are associated with a highly functioning LHD? **(Relevance=92.7%, n=41) (Medium or high priority =84.4%, n=32)**

#### *Capacity*

- Does meeting the recommended PHN to population ratio of 1/5000 have an impact on health outcomes? **(Relevance=77.8%, n=36) (Medium or high priority =79.2%, n=24)**
- What is the impact of hiring freezes on public health service delivery in a community? **(Relevance=70.6%, n=34) (Medium or high priority =85.7%, n=21)**
- How do LHD hiring processes influence LHD ability to attract a workforce with the knowledge and skills necessary for contemporary and future public health practice? **(Relevance=78.1%, n=32) (Medium or high priority =90.5%, n=21)**

### **Laws and Policies**

#### *Policy-makers*

- What type of training for local policy makers is most effective in increasing public health knowledge? **(Relevance=91.9%, n=37) (Medium or high priority =72.8%, n=29)**
- How does policy-maker knowledge influence local decisions? **(Relevance=80.6%, n=36) (Medium or high priority =84.6%, n=26)**

#### *Tobacco policy*

- What was the fiscal impact of smoke-free statutes on newly regulated entities? **(Relevance=57.1%, n=35) (Medium or high priority =72.2%, n=18)**

#### *Healthcare reform legislation*

- Did implementation of the Patient Protection and Affordable Care Act (PPACA) decrease utilization of individual-level LHD services (e.g., immunization, PNCC, WWWP, etc.)? **(Relevance=90.2%, n=41) (Medium or high priority =87.9%, n=33)**
- How did implementation of the PPACA change services provided by LHD? **(Relevance=97.5%, n=40) (Medium or high priority =86.1%, n=36)**

#### *Other policies*

- What effect could unhealthy food taxes have on the consumption of unhealthy foods and obesity? **(Relevance=82.1%, n=39) (Medium or high priority =88.9%, n=27)**
- What level of taxation on unhealthy foods is associated with achieving decreasing consumption of unhealthy foods and reducing obesity? **(Relevance=77.8%, n=36) (Medium or high priority =83.3%, n=24)**

### **Partnership strategies for health improvement**

- What partnership models are most effective for attaining full integration of community health improvement planning within a jurisdiction? **(Relevance=71.9%, n=32) (Medium or high priority =95.2%, n=21)**

- What partnership models have been most effective in improving public health outcomes? **(Relevance=86.1%, n=36) (Medium or high priority =96.4%, n=28)**
- What shared services models have been most effective in improving public health service delivery? **(Relevance=88.6%, n=35) (Medium or high priority =92.6%, n=27)**
- What are the characteristics of public health activities that are improved by delivery through shared service, multi-jurisdictional arrangements versus those that are most effectively provided through highly localized (e.g. every county) arrangements? **(Relevance=87.9%, n=33) (Medium or high priority =84.0%, n=25)**

#### **Public health and related systems**

- How should local, governmental public health systems be organized in Wisconsin to best meet emerging challenges? **(Relevance=82.9%, n=35) (Medium or high priority =88.5%, n=26)**
- How should local, governmental public health systems be organized in Wisconsin to most effectively leverage multi-sector participation and resources? **(Relevance=81.8%, n=33) (Medium or high priority =88.0%, n=25)**
- How should local, governmental public health systems be organized in Wisconsin to most effectively improve population health outcomes within a given jurisdiction? **(Relevance=86.5%, n=37) (Medium or high priority=96.7%, n=30)**
- Where is the message of prevention most effectively delivered? **(Relevance=76.5%, n=34) (Medium or high priority =88.0%, n=25)**

### **2011 PRQ not included in the 2015 update**

#### **Public health services and interventions**

##### *Maternal and child health*

- Does decreasing the number of WIC clinics decrease the no-show rate? **(Relevance=48%, n=25) (Medium or high priority 70.0%, n=10)**

#### **Organization and structure of public health departments**

##### *Local health department accreditation*

- Is there a LHD size threshold (measured by staff, community population or other indicators) necessary to meet accreditation standards? **(Relevance=39.4%, n=33) (Medium or high priority =60.0%, n=10)**
- Does population size in LHD jurisdiction impact readiness for accreditation? **(Relevance=35.5%, n=31) (Medium or high priority =60.0%, n=10)**
- How do health educators influence readiness for accreditation? **(Relevance=32.3%, n=31) (Medium or high priority =75.0%, n=8)**

##### *Performance management*

- Is LHD participation in MLC and adoption of QI performance management approaches associated with improved efficiency and/ cost savings? **(Relevance=53.3%, n=30) (Medium or high priority =91.7%, n=12)**

## **Workforce**

### *Competency*

- Are public health workers receptive to developing a credentialing process for the public health workforce in Wisconsin? **(Relevance=51.4%, n=35) (Medium or high priority =60.0%, n=15)**

### *Capacity*

- What is the most efficient and effective ratio of providers to clients home visiting case management (PNCC) programs? **(Relevance=50.0%, n=30) (Medium or high priority =63.7%, n=11)**
- How does workforce turnover influence the implementation of QI initiatives? **(Relevance=57.1%, n=35) (Medium or high priority =43.7%, n=16)**

## **Laws and Policies**

### *Tobacco policy*

- What impact did the statewide smoking ban have on LHD tobacco prevention programs? **(Relevance=37.1%, n=35) (Medium or high priority =75.0%, n=12)**

### *Other policies*

- What health effects are associated with outdoor wood burning furnaces? **(Relevance=29.0%, n=31) (Medium or high priority =37.5%, n=8)**
- What factors can alter the impact of outdoor wood burning furnaces on health? **(Relevance=29.0%, n=31) (Medium or high priority =50.0%, n=8)**

## **Partnership strategies for health improvement**

- How effective has the public health consortia model in Wisconsin been on addressing emergency preparedness? **(Relevance=48.4%, n=31) (Medium or high priority =71.4%, n=14)**

## **Public health and related systems**

- What methods are most effective in improving healthcare provider treatment for contacts of people with reported STDs? **(Relevance=41.4%, n=29) (Medium or high priority =60.0%, n=10)**

## Appendix B

### Suggested Research Questions

Survey respondents were asked, “Are there any critical research questions that should be added to the list?” Fifty-one suggestions were made by respondents and are listed below. Some questions have been modified to provide grammatical corrections and clarity.

#### Public Health Services and Interventions

- How are LHDs in Wisconsin assuring the foundational PH services and cross-cutting competencies?
- Has the 317 rule change that affected LHDs ability to immunize all residents decreased the overall immunization rates of school aged children in Wisconsin?
- How has the implementation of the Affordable Care Act impacted public health services and interventions?
- What are the overall costs to society when LHDs continue to conduct clinic services that are redundant with what clients can access through medical providers in the community?
- What are the costs to society of having a segregated health care infrastructure (patients who receive governmental care vs. main stream health care)?

#### Organization and structure of public health departments

- What do LHDs need to effectively address policy, systems and environmental change?
- What is the best LHD structure to assure foundational PH services?
- How can LHDs manage their budgets most effectively?
- What LHD providers are most effective in promoting accreditation?
- How do the outcomes differ between a LHD staffed with primarily public health nurses vs other professionals?
- How are the LHDs structure/organization related to their outcomes/budgets?

#### Finance

- How can LHDs spur more innovative funding models, such as social innovation or impact investing, in the community?
- What is the impact of soft money, grants, on community health assessments, community health improvement plan and process, and improved health outcomes?
- What state funding most effectively fills gaps for PH services?
- Does an accredited LHD function better than a non-accredited LHD?
- What is the difference in LHDs that have a director with an educational background in budget management and finance vs a director without this educational background?
- How should LHD partner with accountable care organizations to achieve the triple aim of improved population health outcomes, better quality patient experience of care, and lower cost per person?

- As GPR and state contributions to LHD budgets decline, how do LHDs shift focus and responsibility to public/private partnerships?
- How are WI LHDs doing with funding foundational PH services?
- Does becoming an accredited LHD improve health outcomes?
- What is the difference between counties in WI regarding how much they each spend on executing the same programs?
- In what ways do LHDs have to change their practice to be viable in the future?

### **Workforce**

- How do effective public health departments work across sectors?
- What impact do wage studies have on quality and capacity of the public health nurse workforce?
- Has the public health nurse to population ratio decreased due to increased population based services compared to individual services?
- How does the trend toward exempt pay for public health nurses influence the ability for LHD to recruit new nurses?
- What is the impact of a team of PH professionals vs all or majority of public health nurses on staff?
- What is the optimal per capita staffing ratio (including PH educators, planners, strategists, etc.) to positively impact local health?
- What are the most important competencies for public health leadership?
- How many public health workers have systems thinking capabilities or training?

### **Laws and Policies**

- How can LHDs help boost uptake of anti-poverty programs such as Earned Income Tax Credit and Foodshare?
- What is the impact of 317 rule changes on immunization statuses of communities?
- What impact could alcohol/beer tax have on consumption?
- Something on WI pilot programs regarding race disparities
- Do the economic benefits of frac sand industry outweigh the unknown health effects?
- How does the impact of the tobacco ban impact the use of other addictive substances?
- What are the predicted health effects in WI of emerging industries (open pit metallic mining, wind turbines, frac/silica mining, agriculture)?
- How should elected officials and corporations be engaged to address the social determinants of health?
- How has the movement away from public health in school nursing impacted immunization coverage rates among school-aged children?
- How do policies on green space impact community health outcomes?
- How has the rate of the use of other drugs and obesity increased as tobacco bans, taxation increased?
- How can a more balanced approach of interventions effectively take place on all levels?

**Partnership strategies for health improvement**

- What is the return on investment (ROI) for non-traditional partners to engage in community health improvement?
- What outcomes would demonstrate the financial value in retaining PNCC programming for health departments?
- What partnership models exist outside of WI that yield the largest impact and outcomes for the lowest cost in tax levy?

**Public health and related systems**

- How do partners view their responsibility in achieving public health outcomes?
- How does regional structure improve or impede local public health alignment?
- What is most effective prevention message?
- How may public health services be articulated to support policy change?
- How and to what level should local governmental public health departments be funded to assure operational capacity?
- What system partners are essential in assuring prevention outcomes?

## Appendix C

### Wisconsin Public Health Research Network 2015 Priority Research Questions

The Wisconsin Public Health Research Network (WPHRN) priority research questions (PRQ) were updated in August 2015 using information from an online survey of WPHRN members. A report about the survey and update, *Wisconsin Public Health Research Network Priority Research Questions Update, August 2015* can be found on the [WPHRN website](#).

The 2015 WPHRN PRQ are listed below. Questions or categories have been coded where possible to identify research questions that are also included in the [National Research Agenda for Public Health Services and Systems](#)<sup>1</sup>, [Building a Comprehensive Research Agenda: Potential Research Questions for Accreditation](#)<sup>2</sup>, are addressed in the Wisconsin state health plan, [Healthiest Wisconsin 2020, Health Focus Areas](#)<sup>3</sup>, or are related to the short and long-term priorities of the [Robert Wood Johnson Foundation's Culture of Health](#)<sup>4</sup>. Questions new to the 2015 version of the WPHRN PRQ are so noted.

#### **Public health services and interventions**

##### *Environmental health*<sup>4</sup>

- Does a program of active sampling and testing improve overall water quality of private drinking water wells?
- Do risk-based inspections of facilities result in fewer cases of food borne illness?

##### *Maternal and child health*<sup>4</sup>

- Does participating in prenatal care coordination (PNCC) and/or the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) reduce the rates of very premature birth?
- Does providing “wrap-around” services at WIC clinics result in improved birth outcomes compared to WIC only services?
- Does integrating additional services with WIC programs (i.e., PNCC, Health Check, immunizations) result in better program outcomes for WIC and/or the integrated services?
- What components (services) within PNCC are associated with positive birth outcomes (e.g., greater gestational age)?
- What outreach strategies are most effective in increasing participation in PNCC?
- What are the hidden cost expenses to a reduction in infant mortality?
- What outcomes would demonstrate the financial value in retaining PNCC programming for health departments? **(New question)**

##### *Communicable disease*<sup>3</sup>

- Did implementation of the Wisconsin Electronic Disease Surveillance System (WEDSS) increase health care provider compliance with communicable disease reporting requirements?
- Do the reinfection rates of sexually transmitted infections differ by type of LHD follow-up?
- Are LHD services (e.g. immunizations, sexually transmitted infections prevention and control) provided according to the U.S. Preventive Services Task Force (USPSTF) clinical guidelines and the Guide to Community Preventive Services?

- How has the movement away from public health in school nursing impacted immunization coverage rates among school-aged children? **(New question)**

#### *Service/program priorities* <sup>4</sup>

- What proportion of services provided by local health departments (LHD) in Wisconsin is supported by evidence?
- Are characteristics of community health improvement plan and processes (e.g., leadership, partnerships, data types, formality) associated with greater likelihood or more effective action on identified priorities?
- How do population level services influence health outcomes?
- What are the best methods for documenting population level activities?
- Do LHD effectively address Alcohol and Other Drug Abuse (AODA) issues in both rural and urban communities?
- What LHD programs or services provide the best financial return on investment (ROI)?
- How are LHD in Wisconsin assuring the foundational PH services and cross-cutting competencies? **(New question)**
- How can a more balanced approach of interventions effectively take place on all levels? **(New question)**
- What do LHD need to effectively address policy, systems and environmental change? **(New question)**

#### **Partnership strategies for health improvement** <sup>3, 4</sup>

- What partnership models are most effective for attaining full integration of community health improvement planning within a jurisdiction?
- What partnership models have been most effective in improving public health outcomes?
- What shared services models have been most effective in improving public health service delivery?
- What are the characteristics of public health activities that are improved by delivery through shared service, multi-jurisdictional arrangements versus those that are most effectively provided through highly localized (e.g. every county) arrangements?
- How should LHD partner with accountable care organizations to achieve the triple aim of improved population health outcomes, better quality patient experience of care, and lower cost per person? **(New question)**
- How do effective public health departments work across sectors? **(New question)**
- What is the return on investment for non-traditional partners to engage in community health improvement? **(New question)**
- What partnership models exist outside of Wisconsin that yield the largest impact and outcomes for the lowest cost in tax levy? **(New question)**
- How do partners view their responsibility in achieving public health outcomes? **(New question)**

#### **Finance** <sup>3, 4</sup>

- What LHD characteristics are associated with increasing revenues over time?
- What is the cost of creating a community assessment, a community health improvement plan (CHIP) and a LHD strategic plan in Wisconsin?
- What level of LHD funding is necessary (optimal) for improving or sustaining health outcomes? <sup>1</sup>

- Does increased LHD spending result in improved health outcomes? <sup>1</sup>
- How can LHD manage their budgets most effectively? **(New question)**
- How can LHD spur more innovative funding models, such as social innovation or impact investing, in the community? **(New question)**
- What is the impact of soft money (grants) on CHA/CHIPP and improved health outcomes? **(New question)**
- What state funding most effectively fills gaps for PH services? **(New question)**
- As general purpose revenue (GPR) and state contributions to LHD budgets decline, how do LHDs shift focus and responsibility to public/private partnerships? **(New question)**
- How are Wisconsin LHD doing with funding foundational PH services? **(New question)**
- What is the difference between counties in Wisconsin regarding how much they each spend on executing the same programs? **(New question)**
- In what ways do LHD have to change their practice in order to be to be viable in the future? **(New question)**
- How and to what level should local governmental public health departments be funded to assure operational capacity? **(New question)**

## **Organization and structure of public health departments**

### *Local health department accreditation*

- How does structure/staffing of LHD influence readiness for accreditation?
- Does LHD accreditation result in improved LHD outcomes or outputs? <sup>2</sup>
- Does LHD accreditation result in community health improvement? <sup>2</sup>
- What LHD providers are most effective in promoting accreditation? **(New question)**
- Does an accredited LHD function better than a non-accredited LHD? **(New question)**

### *Merger*

- How do LHD mergers influence local health priorities?
- What are the costs, benefits, and cost savings of LHD mergers, acquisitions, and shared service arrangements? <sup>4</sup>
- Do mergers increase effectiveness of public health programs?

### *Organizational structure*

- How does health and human service organizational structure compared to independent public health organizational structure influence public health staffing and programs?
- How does health and human service organizational structure influence population health outcomes? <sup>1</sup>
- How does organizational structure influence service quality?
- Do LHD organized as independent agencies produce higher quality community health assessments as compared to human services agencies?
- Does having an organizational strategic plan influence LHD effectiveness? <sup>1</sup>
- What LHD and community attributes contribute to improving community health status (e.g. greater life expectancy, specific risk indicators)?
- Is the typical governmental structure of LHD conducive to modern day PH practice?
- What LHD organizational structure provides the greatest return on investment?

- What is the best LHD structure to assure foundational PH services? **(New question)**
- How are the LHDs structure/organization related to their outcomes/budgets? **(New question)**

#### *Performance management*

- What LHD performance management processes are associated with meeting performance targets?
- What are the best quality indicators for measuring performance of LHDs?

### **Workforce**<sup>3</sup>

#### *Competency*<sup>4</sup>

- What work and worker characteristics are associated with LHD workforce competency?
- What is the current level of LHD workforce competency?
- What policy and workforce development programs are needed to improve LHD workforce competency?
- How does workforce education and experience influence public health service delivery?
- How does health officer educational level and experience influence LHD performance compared to PHAB standards?
- What type of provider is required to provide effective PNCC services?
- What are the differences in LHD that have a director with an educational background in budget management and finance vs a director without this educational background? **(New question)**
- What are the most important competencies for public health leadership? **(New question)**
- How many public health workers have systems thinking capabilities or training? **(New question)**

#### *Capacity*<sup>4</sup>

- Does meeting the recommended public health nurse (PHN) to population ratio of 1/5000 have an impact on health outcomes?
- How does workforce turnover influence the implementation of QI initiatives?
- What is the impact of hiring freezes on public health service delivery in a community?
- How do LHD hiring processes influence LHD ability to attract a workforce with the knowledge and skills necessary for contemporary and future public health practice?
- What impact do wage studies have on quality and capacity of PHN workforce? **(New question)**
- Has the PHN to population ratio decreased due to increased population based services compared to individual services? **(New question)**
- How does the trend toward exempt pay for public health nurses influence the ability for LHD to recruit new nurses? **(New question)**
- What is the impact of a team of PH professionals vs all or majority of PHNs on staff? **(New question)**
- How do the outcomes differ between a LHD staffed with primarily PHNs vs other professionals? **(New question)**
- What is the optimal per capita staffing ratio (including PH educators, planners, strategists, etc.) to positively impact local health? **(New question)**

### **Laws and Policies**

#### *Policy-makers*

- What type of training for local policy makers is most effective in increasing public health knowledge?

- How does policy-maker knowledge influence local decisions?
- How should elected officials and corporations be engaged to address the social determinants of health? **(New question)**

#### *Tobacco policy*<sup>3,4</sup>

- What was the fiscal impact of smoke-free statutes on newly regulated entities?
- How do tobacco bans impact the use of other addictive substances? **(New question)**
- How has the rate of the use of other drugs and obesity increased as tobacco bans, and taxation have increased? **(New question)**

#### *Environmental policy*<sup>4</sup>

- Do the economic benefits of frac sand industry outweigh the unknown health effects? **(New question)**
- What are the predicted health effects in Wisconsin of emerging industries (e.g. open pit metallic mining, wind turbines, frac/silica mining, and agriculture)? **(New question)**
- How do policies on green space impact community health outcomes? **(New question)**

#### *Healthcare reform legislation*<sup>4</sup>

- Did implementation of the Patient Protection and Affordable Care Act (PPACA) decrease utilization of individual-level LHD services (e.g. immunization, PNCC, Wisconsin Well Woman Program, etc.)?
- How has implementation of the PPACA changed or impacted public health services and interventions provided by LHD? **(Modified 2011 question)**
- Has the Public Health Services Act, Section 317 rule change that affected LHD ability to immunize all residents decreased the overall immunization rates of school aged children in Wisconsin? **(New question)**
- What is the impact of Public Health Services Act, Section 317 rule changes on immunization statuses of communities? **(New question)**

#### *Obesity prevention policy*<sup>4</sup>

- What effect could unhealthy food taxes have on the consumption of unhealthy foods and obesity?
- What level of taxation on unhealthy foods is associated with achieving decreasing consumption of unhealthy foods and reducing obesity?

#### *Other policies*<sup>4</sup>

- What impact could alcohol/beer tax have on consumption? **(New question)**
- What Wisconsin pilot programs have been effective in addressing racial disparities and how has this been accomplished? **(New question)**

### **Public health and related systems**<sup>4</sup>

- How should local, governmental public health systems be organized in Wisconsin to best meet emerging challenges?
- How should local, governmental public health systems be organized in Wisconsin to most effectively leverage multi-sector participation and resources?

- How should local, governmental public health systems be organized in Wisconsin to most effectively improve population health outcomes within a given jurisdiction?
- What is most effective prevention message? Where is the message of prevention most effectively delivered? What system partners are essential in assuring prevention outcomes? **(Modified 2011 question)**
- How does regional structure improve or impede local public health alignment? **(New question)**
- How may public health services be articulated in order to support policy change? **(New question)**
- What are the overall costs to society related to redundant services provided by local health departments and medical providers? **(New question)**
- What are the overall costs to society of having a segregated health care infrastructure (patient who receive governmental care vs. main stream health care)? **(New question)**
- How can LHDs encourage use of programs such as Earned Income Tax Credit and Foodshare for those that have socioeconomic challenges? **(New question)**