

A Needs Assessment for Data and Methods in Public Health Systems Research

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Executive Summary

As defined by Mays et al., “public health systems research (PHSR) is a field of study that examines the organization, financing, and delivery of public health services within communities, and the impact of these services on population health.” PHSR has emerged as a “sister” discipline to health services research; both fields share a related set of research questions, have a common base of methods, and often rely on similar or related data sources to develop meaningful research on population health. The two fields are closely linked and often draw upon the same pool of researchers, which greatly adds to the range of multidisciplinary perspectives in PHSR. However, as can be expected of any emerging line of inquiry, it remains difficult to define the boundaries of PHSR, and to identify its most appropriate methods and data. Thus, it has been suggested that the evidence base is limited and a range of rigorous methodological approaches have not yet been attempted. This study is the first assessment of data and methods needs for the field of PHSR.

This needs assessment draws on three data collection efforts: a review of the literature; a survey of members of the AcademyHealth PHSR Interest Group; and key informant interviews. These three sources provide insights to guide discussion as well as recommendations for addressing data and methods gaps in PHSR.

The literature review demonstrates that, at present, there are only a small number of PHSR papers focused on methods and methodological developments, though trends indicate this number is growing. Nearly two-thirds of the research articles reviewed use quantitative methods, more

than a third use qualitative methods, and more than half of the research articles identified were published in the following four journals: *Journal of Public Health Management & Practice*; *Public Health Reports*; *American Journal of Public Health*; and *American Journal of Preventive Medicine*.

Results of the survey also indicate that researchers engaged in PHSR are likely to use a wide range of methods and types of data. When asked to identify the major barriers to advancing methods in PHSR, close to three out of four respondents reported funding as the main barrier, while nearly two-thirds cited the availability of data. Slightly more than one-third of respondents commented on the lack of training opportunities and three in 10 mentioned leadership.

The majority of researchers surveyed said they have individuals on staff conducting PHSR; however, most have not hired staff members to do this work. Among those who had staff who do PHSR, only half of PHSR researchers said their organizations provide PHSR training either in a formal academic setting, or on the job. Likewise, most researchers were not aware of masters’ or doctoral-level training programs focused on training in PHSR. Even though most respondents reported they were not aware of formal PHSR training programs, three-quarters of respondents considered continuing education in PHSR beneficial for the field. Several specific methods were mentioned as topics for continuing education in PHSR.

In many ways, the key informant interviews underscored the results of the survey. While some respondents mentioned data limitations as a barrier to conducting more rigorous research—

particularly with regard to limitations for financial data and organizational dynamics of local public health services—others felt that definitional and measurement issues are most important. Some interviewees said they felt the key issue is for PHSR to refine the scope of the field and assess key definitions in order to develop new measures to enable collection of valid and reliable data. Some said that the field needs a refresher in basic statistical methods, while others focused on the need for training in econometric methods, analysis of geo-spatial data, and mixed methods. Overall, the comments suggested a need to steep the field in a more rigorous scientific approach to conducting research by developing a “culture of scientific inquiry.” Finally, several of the interviewees called for an ongoing dialogue between researchers and the policy and practice community to ensure PHSR questions are motivated by important policy and practice issues.

The multiple perspectives captured in this report demonstrate the strong interest in and support for the field of PHSR and for efforts to advance rigorous methods in PHSR. The responses reflect the struggle of a young field: articulating key research questions, obtaining appropriate data, identifying valid and reliable measures, and developing appropriate methodologies. However, despite the relative youth of the field and the barriers to high quality research identified by a number of respondents, nearly three-quarters of users of PHSR responding to the survey said that PHSR “inform[s] their decision-making in policy and practice.” The relevance of the field of PHSR to policy and practice, even in its youth, demonstrates the tremendous potential for the field to make meaningful contributions to the public’s health.

Introduction

As the professional society of health policy researchers, policymakers, and practitioners, AcademyHealth is interested in understanding the needs of the field of health services research (HSR) and emerging, related disciplines. A core strategic objective is to elevate the state of practice in the field by providing methodological and skill-based training for researchers and policymakers. In order to identify potential methodological and skill-based training needs for public health systems research (PHSR), AcademyHealth conducted this needs assessment.

HSR is defined as “the multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Its research domains are individuals, families, organizations, institutions, communities, and populations.”¹ From the outset, PHSR emerged as a “sister” discipline that is closely linked to the HSR community due to a related set of research questions, a common base of methods, and reliance on similar data sources. In order to develop meaningful research on public health systems, leaders in HSR and PHSR express a strong desire for the areas of inquiry to enhance one another, both in terms of multi-disciplinary collaboration on projects, and in terms of providing training for practitioners and investigators.

To support the many disciplines under the HSR umbrella, AcademyHealth manages a series of Interest Groups (IGs) focused on specific HSR or health policy topics. Since 2002, AcademyHealth has helped to foster the development of PHSR through the PHSR IG², one of the largest Interest Groups at AcademyHealth, currently serving more than 1,800 researchers,

policymakers, and practitioners. The PHSR IG is dynamic, and is actively engaged in advancing public health systems research by fostering a community of individuals interested in PHSR, promoting quality research, supporting junior researchers, and addressing methods and data needs. Each year, in conjunction with the AcademyHealth Annual Research Meeting, the PHSR IG holds a separate meeting with a competitive call for papers.

One consequence of regularly engaging an active group of stakeholders in this emerging area of research is ongoing debate about the definitional boundaries of PHSR. The most recent iteration of this discussion resulted in the development of an expanded definition of the field and the role of the PHSR IG, which was adopted in June 2009. It builds upon the definition of PHSR by Mays et al.—“public health systems research (PHSR) is a field of study that examines the organization, financing, and delivery of public health services within communities, and the impact of these services on population health.”³ This expanded definition describes PHSR as “a multidisciplinary field of study that recognizes and investigates system-level properties and outcomes that result from the dynamic interactions among various components of the public health system and how those interactions affect organizations, communities, environments, and population health status...the public health system includes governmental public health agencies engaged in providing the 10 essential public health services, along with other public and private sector entities with missions that affect public health.” In addition, this definition says that the “the term ‘services’ broadly includes programs, direct services, policies, laws, and regulations designed to protect and promote the public’s health and prevent disease and disability at the population level.”⁴

Background

In the landmark 1988 report, *The Future of Public Health*, the Institute of Medicine (IOM) called for public health practitioners to “make evidence the foundation of decision-making.” In the past decade, however, the public health community has realized that the research base required to respond to this call is lacking. It has been suggested that “practice-based initiatives to improve public health delivery have far outpaced the development of rigorous research studies in public health practice that are needed to inform and guide the public health system’s attempt to improve its performance and community health status.”⁵

In 2007, AcademyHealth conducted a stakeholder meeting to evaluate the research base, assess the discipline’s needs, and examine the PHSR research agenda. Participating stakeholders from national public health membership organizations, academic centers, governmental agencies, provider groups, and other private organizations agreed that research gaps remain. The identified vulnerabilities included datasets that limit the scope and complexity of research, a lack of standardized methodologies, a lack of theoretically-based performance indicators and measurement instruments, difficulty in linking research to practice, limited public understanding, and lack of funding.⁶ A list of priority research topics was created around the categories of structure and organization, performance indicators, data, financing, workforce, and distal and social determinants.⁷

Concurrent with efforts to further PHSR’s research agenda, the Robert Wood Johnson Foundation (RWJF) launched a major grant-making initiative by sponsoring a special topic solicitation in PHSR (see www.hcfo.org for a description of each of the funded grants and findings where available).⁸ This competitive solicitation, through which 23 grants were

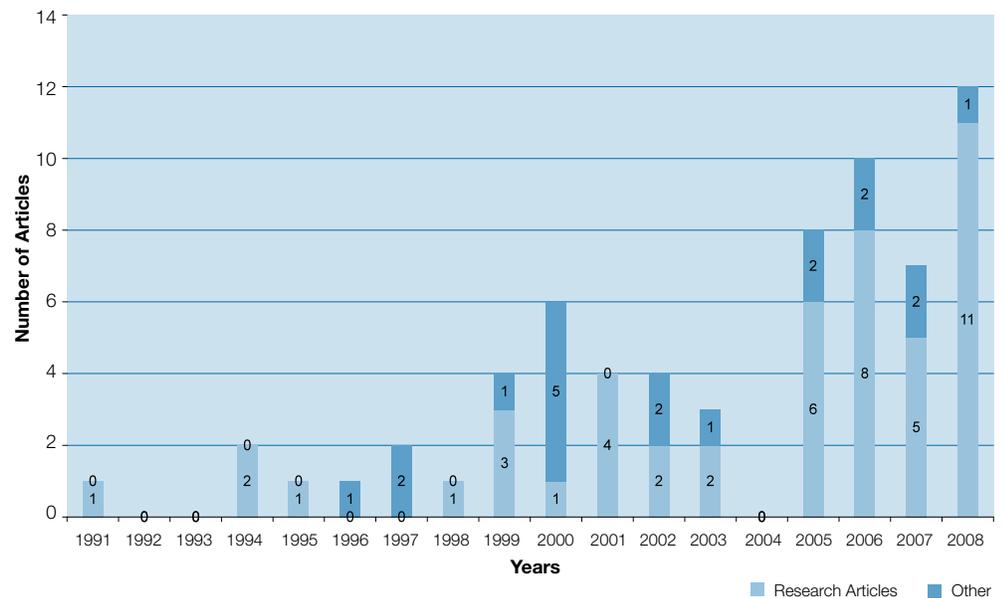
funded, has represented a significant source of investigator-initiated funding for the emerging discipline. Another initiative launched by RWJF was a mini grant program facilitated by the University of Kentucky, designed to grow the field by supporting junior faculty and dissertation candidates. From 2007 to 2009, this program offered 25 research awards to fund dissertations and pilot studies.

At the same time, the first concrete commitment to PHSR was made by the federal government. The 2006 Pandemic and All-Hazards Preparedness Act (PAHPA) authorized the secretary of the U.S. Department of Health and Human Services to identify the existing public health systems research knowledge base and establish a research agenda. The \$50 million appropriation included a mandate to “fund research centers at accredited schools of public health to conduct PHSR for preparedness and emergency response.” To date, the assistant secretary for preparedness and emergency response has funded nine Preparedness and Emergency Response Research Centers (PERRCs) through the Centers for Disease Control and Prevention (CDC) Coordinating Office for Terrorism Preparedness and Emergency Response (COTPER).

Despite these investments, it’s been suggested that PHSR has yet to demonstrate return on investment—making it difficult to secure funding and buy-in from public health practitioners, PHSR’s end-users.⁹ An exploration of PHSR’s body of literature may elucidate such remarks, and clarify the field’s next steps. Thus, AcademyHealth conducted this Data and Methods Needs Assessment.

This project aims to equip the PHSR community to produce rigorous and timely research on important questions for policymakers and practitioners. It was supported by a grant from RWJF

Figure 1: PHSR Articles by Year and Type, 1991-2008



to evaluate the current state of the field and, subsequently, to conduct relevant methods training to enhance the rigor of PHSR. An Advisory Committee, composed of a subset of the AcademyHealth Methods Council, along with additional experts in PHSR, provided significant input (see Appendix 1). A draft of the report was circulated at the PHSR IG Annual Meeting on June 30, 2009. This current version of the document reflects comments from that community. AcademyHealth thanks the Advisory Committee and members of the PHSR IG for their useful comments.

Methods

The PHSR Data and Methods Needs Assessment draws upon three interrelated activities:

1. A review of the PHSR literature to identify articles with a strong methodological focus;
2. An online survey of PHSR IG members; and
3. Key informant interviews.

AcademyHealth staff conducted the study between January and June of 2009.

Literature Review

The literature review catalogs PHSR with a strong methods focus, in order to identify frequently used methodologies and topics. AcademyHealth was fortunate to have the opportunity to utilize a substantial review of the PHSR literature recently undertaken by colleagues at the University of Kentucky.¹⁰ Additional articles in PHSR were identified from the publication of research funded through RWJF’s special topic solicitation in PHSR.

Once this initial list of titles was compiled, the articles were reviewed in greater detail to assess which related to PHSR methods, in order to create a subset for this study. Two reviewers independently scanned titles of the articles and assessed whether they appeared to be related to PHSR methods. At the conclusion of this initial assessment, the reviewers met to discuss the characteristics of the articles that were selected. The reviewers also read abstracts of the articles for which relevance to PHSR methods was in question. Finally, they discussed cases in which they disagreed, and resolved these issues, refining the inclusion criteria in the process.

The results of the University of Kentucky (UKY) literature review included nearly 500 articles on PHSR, of which 80 were identified by UKY as focusing on technology, data, and methods. Of those, 29 were selected for further review because they had a strong methods focus. From the special topic solicitation in PHSR, 37 additional articles were identified. Thus, a subset of 66 articles were identified as having a methods focus, and were reviewed in greater detail. All of these articles selected for review met two criteria: (1) they appeared to be PHSR research projects using the Mays et al. definition, and (2) they focused on topics relevant to methods and data.

Articles were next categorized into one of four groups:

- Commentaries;
- Research articles;
- Practice articles; and
- Books.

Finally, the research articles were reviewed to determine whether quantitative or qualitative methodologies were used, as well as to assess the research's data sources. The reviewers independently reviewed the abstracts and classified them by study design (e.g., mathematical models, literature review, surveys, and case studies) and data source (e.g., State Inpatient Databases). Subsequent to categorizing the citations, the two reviewers met to discuss their conclusions and to arrive at consensus.

Public Health Systems Research Interest Group Survey

A survey of AcademyHealth PHSR Interest Group Members was conducted via the Web from March 24 through April 8, 2009. Questions for the survey were based in part on a survey instrument developed by researchers at the University of British Columbia that focused on identifying core competencies in health services research at Canadian training institutions. The list of major methods and topics in PHSR generated from the literature review was also utilized in developing the survey instrument. The Advisory Committee provided significant guidance on the questions and pre-tested the survey.

Figure 2: PHSR Survey Respondents, by Type

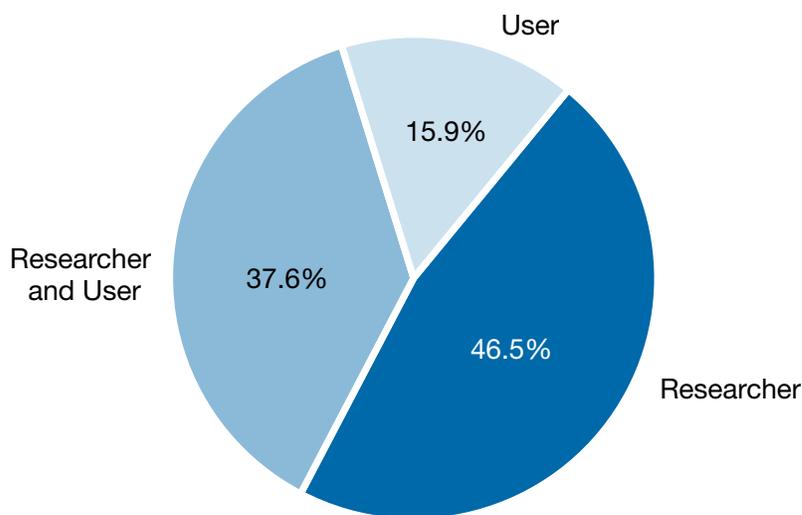
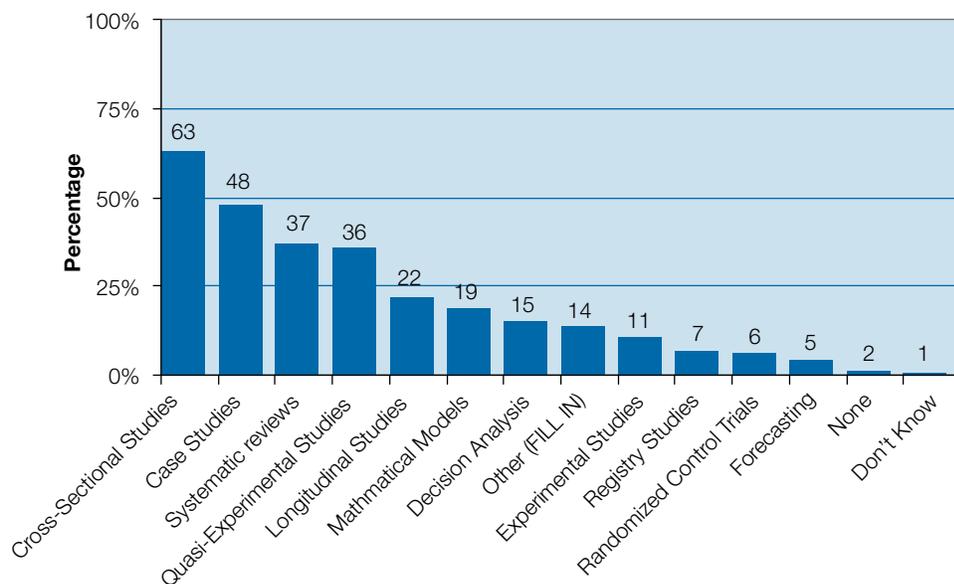


Figure 3: Commonly Used Study Designs in PHSR



The survey was sent to the 1,597 members of the PHSR IG with valid e-mail addresses. As an incentive to participate, nine prizes were offered, including four Amazon.com gift certificates (\$25 value), four free registrations to the 2009 PHSR IG Annual Meeting (\$140 value), and one travel reimbursement to attend the PHSR IG Annual Meeting (up to \$250). After the survey was closed, nine random numbers were generated by Excel, and the numbers were matched to the survey ID numbers generated by

SurveyMonkey.com. Winners were notified of their prizes via email on April 28.

Of the group surveyed, 69 were not reachable at the email address on record, and an additional three respondents opted out of the survey. Of the remaining members, 182 completed the full questionnaire, representing 12 percent of IG members. The survey was programmed, hosted, and administered using SurveyMonkey.com.

The respondents have only a slightly different demographic profile than that of the overall AcademyHealth membership (see Appendix 2). However, because the survey was only administered to members of the PHSR IG, and because of the low response rate, it is not possible to say that respondents are broadly representative of public health systems researchers. Percentages may not always add up to 100 percent due to rounding.

Interviews

In April and May 2009, AcademyHealth staff conducted a series of 11 semi-structured interviews with individuals representing perspectives on data and methods needs. Interviews were conducted with individuals representing the following stakeholder groups:

- PHSR/HCFO grant reviewers;
- Established PHSR researchers in University settings;
- Health services researchers in Universities and the private sector;
- Students in doctoral and postdoctoral programs; and
- Public and private funders of PHSR.

An initial interview questionnaire drew on concepts addressed in an interview guide focused on core competencies in HSR doctoral training conducted by Canadian researchers. Suggestions for key informants were collected from the Advisory Committee. Four out of five individuals contacted for a key informant interview participated in the project.

Findings

Literature Review

Between 1991 and 2008, the number of PHSR articles focused on methods increased from one to 12 per year (Figure 1). No articles selected for review were published in 1992, 1993, or 2004; however, from 2005 to 2008, the number of articles increased substantially.

Among the papers selected, research articles were the most common type (71 percent). The remaining 29 percent were commentaries, practice-based articles, or books, of which most were commentaries. Of the research articles, 36 percent used qualitative methods while 64 percent used quantitative methods. Most of the research articles were published between 2005 and 2008.

An interest in understanding the composition of research methods used in the field is a primary motivator behind a review of the PHSR literature. Of the research articles, the largest group was case studies. There was significant diversity in the methodologies used in PHSR, including focus groups, systematic literature reviews, longitudinal studies, data synthesis, and mathematical models.

More than half (56 percent) of the research articles were published in the following four journals: *Journal of Health Management & Practice*, *Public Health Reports*, *American Journal of Public Health*, and *American Journal of Preventive Medicine*. Other journals that published PHSR included *Annual Review of Public Health* and *Journal of Health Services Research Policy*. Between 2003 and 2008, *Health Affairs* published one PHSR article with a methodological focus.

Public Health Systems Research Interest Group Survey

Survey respondents were asked whether they consider themselves a ‘researcher,’ research ‘user,’ or ‘both.’ Nearly half (47 percent) of respondents classified themselves as a PHSR ‘researcher,’ and more than one in three (38 percent) consider themselves to be ‘both.’ Sixteen percent said they are only a ‘user’ of PHSR (see Figure 2).

Two specific subsets of questions were designed—one for researchers and one for research users. The respondents who considered themselves ‘both’ were asked to

respond to both sets of questions. In the following discussion, ‘researcher’ denotes the population of those who reported they are a ‘researcher’ or ‘both’; whereas, ‘user’ denotes the population of those who reported they are a ‘user’ or ‘both.’ Exceptions are noted when responses from those considering themselves ‘both’ are not included. A series of tables summarizing the survey results are available in Appendix 3.

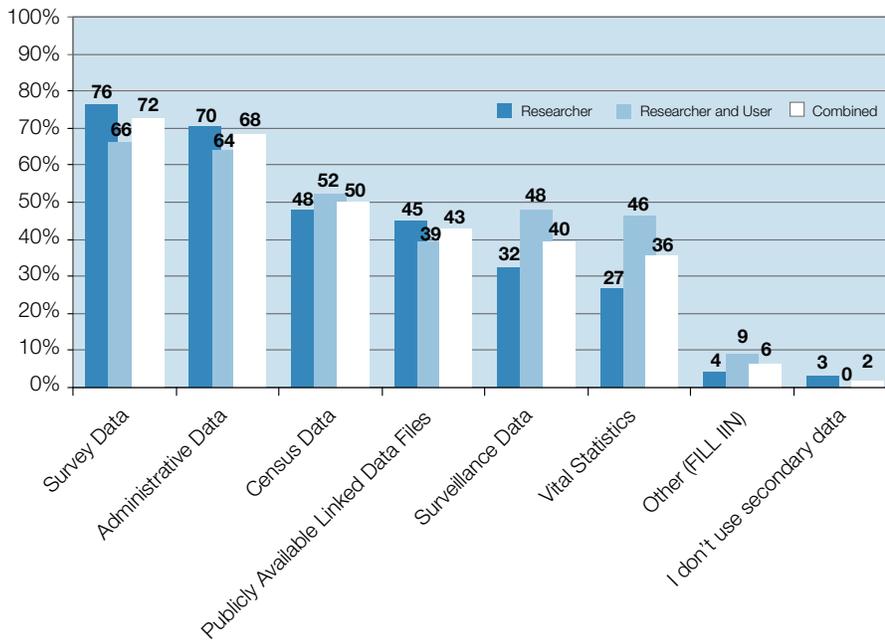
1. Current Use of Methods and Data in PHSR

When asked what types of research methods they used when conducting PHSR,¹¹ the majority of researchers employed quantitative (68 percent), mixed methods (68 percent), and qualitative methods (47 percent).¹² Among those who said they conduct ‘other’ types of methods, legal and economic methods were listed.

When asked about specific study designs in their work, PHSR researchers said cross-sectional studies are most common (63 percent) (see Figure 3). Case studies were also frequently reported (48 percent), followed by systematic reviews (37 percent),¹³ and quasi-experimental studies (36 percent). Longitudinal studies, which may include a variety of study types, were mentioned by 22 percent of respondents. A smaller number of respondents reported conducting mathematical models (19 percent), decision analyses (15 percent), experimental studies (11 percent), and forecasting (5 percent). Registry studies and randomized control trials were mentioned infrequently (7 percent and 6 percent respectively). Those who said they conduct ‘other’ study types (14 percent) were most likely to cite cross-national studies, action research, semi-structured interviews, and organizational analyses.

More than half of researchers (65 percent) said they use ‘both’ primary and secondary data in their PHSR work. Twenty-seven percent said they work primarily with secondary data and 8 percent reported they focus on primary data.

Figure 4: Types of Secondary Data Commonly Used in PHSR



Survey data is a very common source of information in PHSR, mentioned by 72 percent of researchers as a source of secondary data (see Figure 4). More than two-thirds (68 percent) of the researchers reported using administrative data, and census data was reported by half (50 percent) of respondents. Publicly available linked files were reported by less than half (43 percent), as was surveillance (40 percent) and vital statistics data (36 percent). Data from specific sources mentioned include non-publicly available linked data and death, birth, and cancer registries, as well as data from the National Association of County and City Health Officials (NACCHO); the National Public Health Performance Standards Program & Profile datasets; and the Area Resource File (ARF).¹⁴ The majority of researchers said that the unit of observation they investigate in their PHSR work examines individual (56 percent), provider (50 percent) or county or state units of observation (45 percent) level data. In addition, respondents reported using clinics (25 percent) and national (15 percent) units of analysis.¹⁵

When asked to identify barriers to advancing methods in PHSR, close to three out of four respondents (73 percent) reported funding was the main barrier. Two in three mentioned the availability of data (62 percent), and 35 percent reported a lack of training opportunities. Thirty percent of respondents mentioned leadership as an obstacle to advancing methods in PHSR.¹⁶

2. Informing Policy and Practice

Nearly three in four respondents who identified themselves as users of PHSR said that PHSR findings inform their decision-making in policy and practice.

Likewise, the majority of respondents (72 percent) reported that they ‘agree’ or ‘strongly agree’ that PHSR findings are credible.¹⁷

When asked about where they go to *find* PHSR research results, more than half of the researchers said *Health Affairs* (63 percent), the *American Journal of Public Health* (60 percent), and *Health Services Research* (53 percent). The *Journal of Public Health Management & Practice* (49 percent) and *Public Health Reports* (29

percent) were also mentioned. In sharp contrast, when asked to which journals they would be most likely to *submit* PHSR, the *Journal of Public Health Management & Practice*, *American Journal of Public Health*, *Health Affairs*, and *Health Services Research* ranked highest. Researchers reported publishing in a wide variety of journals, including the *South Asian Brown Paper* and *Criminology*.

3. Training

The majority of respondents (54 percent) said that they have individuals on staff who conduct PHSR as part of their jobs. However, most (65 percent) have not hired or attempted to hire staff members to conduct PHSR as part of their job duties. Of those who have hired or attempted to hire faculty/staff to conduct PHSR in the last five years, 44 percent say they ‘agree’ or ‘strongly agree’ that those who have applied have appropriate or sufficient training in analytic methods. Half of respondents (51 percent) said that their organization provides PHSR training either in a formal academic setting, or on the job.

The majority of researchers (71 percent) stated that they were not aware of masters’ or doctoral-level training programs focused on training in PHSR. Those who reported they were aware of training programs were asked to identify the institutions that housed these programs; a wide array of universities was reported. The most commonly mentioned programs include Harvard University, the University of North Carolina at Chapel Hill, and the University of Michigan.

Even though most respondents reported they were not aware of formal PHSR programs, the vast majority (75 percent) think education in PHSR would be beneficial for the field.¹⁸ Those who felt continuing education would be beneficial for the field were asked to list the types of training and methods that would be helpful in PHSR. Among the

34 comments that were provided as open-ended responses, 18 focused on methods. Specific mention was made about the need for multilevel modeling, social network analysis, econometrics, and mixed methods. Respondents also cited the need for training in data linkages and data management. Research translation and design paradigms were noted. Some responses questioned the value of continuing education that is not for credit while others commented on the importance of offering online training and the need to ensure that training is not cost-prohibitive.

Demographics

Demographically, PHSR researchers appear similar to the population of AcademyHealth members (Appendix 2). A plurality of respondents stated that their primary discipline is public health (38 percent). The majority of researchers are female (56 percent) and half report they have a Ph.D.

Among the ‘user’ only subset, the majority (73 percent) are female. More than one in three respondents reported having a Ph.D. (36 percent) and 41 percent have a master’s degree. These ‘users’ of PHSR most often describe themselves as policymakers or policy analysts (54 percent), educators (35 percent), and public health practitioners (26 percent). A broad range of ‘other’ job titles were mentioned, including health scientist, consumer, programming funder, and public health program manager.

Respondents were asked if they had received formal training in either HSR or PHSR. The majority (60 percent) of respondents reported that they had received formal training in HSR.

Key Informant Interviews

The key informant interviews provided additional illustration of results from the survey of PHSR IG members. Findings from the interviews are similar to those identified in the survey yet are presented in a slightly different order from the survey results. Distinct from the surveys was a set of comments related to improving communication between the research and policymaking community. These issues are addressed below.

Quotes are listed in italics. It is important to note that the quotes selected here are individual perspectives on themes reflected by the larger group. None of these quotes are attributed to individuals to assure confidentiality of respondents.

1. Informing Policy and Practice

All interviews began with a question about the most important emerging questions for the field of PHSR. ‘Users’ of research were asked a question about whether findings from PHSR addressed questions of interest to PHSR policymakers and practitioners. An extensive discussion about the major questions for the PHSR research agenda is captured in an AcademyHealth brief from 2007, “Advancing Public Health Systems Research: Research Priorities and Gaps.” In general, the major questions that emerged in the interviews are consistent with the questions identified in that brief, focusing on issues of public health financing, process and delivery of public health services, outcomes of public health interventions, and efforts to measure preparedness.

When asked whether PHSR is influencing public health policy and practice, respondents were enthusiastic about PHSR’s “enormous potential” to contribute to policy and practice. This should be driven, some argued, by “good research.”

One respondent reflected a common sentiment that:

“good research is good research – I just want good research, whether qualitative or quantitative.”

As with many research disciplines, however, PHSR is not immune to the pursuit of research that may not directly affect policy or practice. One of the respondents noted that some researchers:

“have a hammer [e.g. specific viewpoint] and want to prove it works—instead of looking at how to effectively drive the nail—in other words, ‘how do we make the public’s health better’...if we get back to asking the right question rather than promoting a viewpoint, the field’s ability to contribute to practice/policy is huge.”

Thus, while the potential of PHSR to influence policy may be substantial, much work is needed before researchers are sensitized to the needs of policy and practice.

Respondents suggested that one potential solution to the data log jam is to “get more creative about use of data” and think about how to link data files and measures from multiple sources. Disparity studies are arguably one area in which researchers are limited by sufficient data, but where researchers have sought rigorous, creative approaches to measuring important concepts.

Others suggested that the lack of a clear definition of PHSR was the field’s “own worst enemy” noting that re-framing of PHSR could be very helpful if the field were to respond to the “huge interest in ‘community determinants of health’” with a pitch that reflects these issues. With respect to insufficient funding for PHSR,

one respondent made the following suggestion:

“Don’t say ‘I am looking for funds to do PHSR,’ instead, say ‘I’m looking for funds to develop a broader understanding of the determinants of health and how public health policies interact with factors A, B, C, or D—and with population health—at the community level.’ You might get more response this way...”

Many argue that it is critical that a body of targeted funding be made available to answer questions and “allow for the compounding effect of research.” Viewed in another way, one respondent who was generally critical of the rigor of current studies expressed the need for multi-year investment because “one study doesn’t make a body of knowledge.” One respondent suggested that the research portfolio of the Practice Based Research Networks (PBRNs) could be used this way by asking them to each develop a:

“methodological portfolio so you have common measures and can compare [across projects and] learn from that comparison...[we must] integrate to get something more.”

Funding was a frequently mentioned limitation to addressing important PHSR questions in a timely and rigorous manner. While some felt this was a critical issue hampering development of the field, others did not. One respondent said,

“People are always going to say we don’t have enough money, so I wouldn’t focus on that but rather on what you’re going to do.”

One note of potential concern is that some respondents felt the field has an “advocacy” bent, and that some research is initiated with the idea that the project will produce a specific outcome or result that in turn will promote specific policy objectives, rather than good science that explores relationships in public health services and systems.

“[PHSR] needs to establish scientific rigor first and advocacy second...we are trying so hard and want so much to prove that upstream public health interventions are cost-saving. But the PHSR community needs to stand back and...ask about the impact of interventions...I am very concerned that PHSR won’t thrive as a discipline if it doesn’t establish a reputation for scientific rigor first and advocacy second.”

2. Current Use of Methods and Data in PHSR

All respondents were asked whether they think the field of PHSR is conducting rigorous research, and to explain why or why not. Responses varied widely across the pool of interviews, but most tended to reflect that PHSR is in a growth phase, and is experiencing a natural learning curve.

One researcher commented, “Sure, why not? It can always be better, but that’s true for any field.”

Another said:

“Yes, sometimes. But, it depends on how you define rigor. Some studies wouldn’t hold up to the scrutiny of AHRQ because of the primitive level at which we’re working, but we’re getting there. It is dangerous to compare work we’re able to do in PHSR to the work we do in wellness care systems research because they’re 30 years ahead of us.”

Several respondents noted the need for better frameworks to guide research. Donabedian’s ‘structure-process-outcomes’ framework was cited by several respondents as a potentially useful model to guide inquiry in PHSR.¹⁹ As one interviewee said, the focus of PHSR is to “learn from events about outcomes [that] public health systems are capable of producing. And also learn from drills and exercises.” Noting the potential use of the Donabedian model, the respondent went on to suggest this would help assess, for example:

“How can we learn systematically about what is happening with the swine flu?... How quickly can you set up systems to distribute and communicate?”

Several respondents said that, as is often the case with new fields, the focus of initial studies in PHSR tend to be qualitative and descriptive:

“I think that for a while we may be stuck with anecdotal, cross-sectional work because we don’t have a consistent taxonomy, units of organization, measures, etc. Cross-sectional studies may be necessary for us to coalesce around the PHSR vocabulary.”

And:

“There is so much descriptive work that still needs to be done—such as how does funding work, how is the system organized. It has to be done before more analytic work, such as making predictions and using models, is done.”

Respondents were asked what they think of a finding from the IG survey that a substantial proportion of survey respondents said they are conducting quasi-experimental studies in PHSR. Some interviewees expressed surprise at this finding and felt the survey respondents may have been unfamiliar with the specific definition of quasi-experimental studies.

“I haven’t seen much of that. Most of what I’ve seen is observational and descriptive. I have seen a little bit of this using NACCHO data, but it is usually just looking at process outcomes in relation to formal public health system structure.”

However, many felt it would be ideal to move in this direction provided there is good data:

“It’s going to be hard to do randomized clinical trials (RCT) in public health... so quasi-experiments are the gold standard...now we have a natural experiment in H1N1.”

Researchers were asked if they perceive that the barriers to producing high quality research are due to a lack of “sufficient data.” Largely, respondents acknowledged data limitations, but many said that they did not feel insufficient data was the major barrier to addressing PHSR key questions of interest. Rather, as with many new fields, there is the need to create valid and reliable measures. One respondent said:

“For me, the issue is not so much data but valid and reliable measures. A lot of data is not particularly valid and reliable.”

Another respondent provided an example related to assessing workforce capacity in local health departments, suggesting there is a critical need to define:

“What is meant by a ‘unit’ of epidemiological service...we don’t have a consistent taxonomy [for PHSR] including units of organization, etc.”

One idea that was proposed in the course of the interview is that PHSR refers to evidence-standards promulgated by the Guide to Community Preventive Services. The Community Guide has clearly defined criteria for high-quality evidence studies.²⁰ As a resource for the practice community, it may be beneficial to aim toward including systems level analyses in the Community Guide. However, doing so would require that PHSR studies adhere to best methodological practices for rigorous studies as outlined by the Centers for Disease Control and Prevention (CDC).

It is also important to note that in the area of comparative analysis, there remain critical measurement issues. As one respondent noted, when conducting comparative analysis or reviewing a published study it is important to ask:

“Were the comparisons fair? Should [the study] have measured status or improvement? This is a debate people understand a lot about in HSR but [it] has not carried over to PHSR measures.”

However, another researcher who has reviewed PHSR journal submissions suggested that the problem is data.

“[The] reason for turning down a lot of articles was that they were descriptive. When the authors were asked to respond to questions, they often didn’t have data to address reviewers’ questions...we don’t lack smart researchers [but] the data are not there yet.”

3. Training

All respondents were asked a series of questions about training needs for the field across an array of potential trainees including:

- New researchers;
- Experienced investigators in HSR who may be interested in PHSR;
- Experienced public health researchers who may benefit from enhancing their methodological backgrounds; and
- Public health practitioners.

There was overwhelming agreement from respondents regarding the need for training on analytic methods for researchers from all backgrounds. In addition, many felt these needs could be met in continuing education settings or as externships or fellowships.

Many respondents, though, felt the training needs for methods in PHSR were not distinct from those in HSR. One respondent commented:

“We have the methodological capacity, it exists from the HSR side of the house.”

Another noted:

“Pre-doctoral training in HSR methods provides a good foundation in methodological approaches and theoretical frameworks...The post-doctoral state is where training could be most helpful...[this approach] could also benefit people with practice-oriented training (e.g. Dr.P.H.) who want additional training to get them up to

speed with methods...analogous to the RWJ clinical scholars program.”

With regard to bridging the need for methods and data, one current student said:

“We don’t necessarily need specific methods for PHSR, or specific methods. We just need to be more creative... in PHSR you need different levels of data on community, financing, and environmental factors—the data sources are there but we need to be more creative in their use.”

Specific methodological topics in which the interviewees felt there is a need for additional training included:

- Health economics
- Econometrics
- Epidemiology
- Clinical processes (vaccine delivery)
- Regression basics (for some)
- Systems-level thinking
- Organizational behavior.

Greater training and familiarity with specific data sets was also mentioned by some. Examples included:

- The Medicare Beneficiary Survey (MCBS)
- The Behavioral Risk Factor Surveillance Survey (BRFSS)
- The National Profile of Local Health Departments (from the National Association of County & City Health Officials, NACCHO)
- The National Association of Local Boards of Health (NALBOH) Survey
- The ASTHO Profile of State Public Health (from the Association of State and Territorial Health Officials.)

But some felt that the greatest need is to develop a stronger grounding in scientific approaches to answering questions in the burgeoning field of PHSR:

“We need to train public health systems researchers in a ‘culture of inquiry’—not accepting the premise that we know what we’re doing to prove certain outcomes,

but creating [a] culture of what we know about what works and what doesn't... [we] need a basic introduction to scientific methods"

Respondents did not believe, however, that this need or phenomenon is limited to the research community. As one interviewee recounted their experience working in public health systems, the need for practitioners to receive more training in critical thinking was key.

"The problem is—when I would encourage smart managers to re-think service delivery some viewed this as an opportunity to improve quality, but most got defensive saying, 'I've done it this way for many years,' [This is] consistent with a non-scientific approach."

When knowledgeable faculty were asked about potential training grants for PHSR, the CDC dissertation award program was mentioned as a very small pot of money, but one possibility for students and young researchers. The RWJF mini grants were also mentioned, though a respondent commented that they *"hope [these are] still there a year from now."* AHRQ was not viewed as a potential funder for PHSR because it *"doesn't fit squarely in their mandated work."*

As training is related to building the future of the field, one interviewee said, *"we need to develop researchers as a priority."* This was a common statement in the section of the interviews focused on training, but others noted that funding is a perpetual barrier. One interviewee, commenting on their role as a faculty mentor, reflected on the long-term implications of training in PHSR, noting:

"I'm very interested in the field, but don't want to over commit [to junior investigators] that this will be a place to build a career when funding isn't there yet."

4. Communication Between Researchers and Policymakers

An additional set of issues related to ways to help researchers and policymakers engage with one another emerged as a strong theme in the interviews.

As one respondent with a strong policy background said:

"Simply finding ways to convene practitioners and researchers is meaningful — they don't get in the same room, almost ever... Little symposia or seminars might actually be a good activity."

Several specific approaches to convening researchers and policymakers to discuss important research questions and gaps in current knowledge were mentioned. The first was the suggestion that researchers and policymakers convene several times a year in a small group for an informal dialogue in which questions and exchange among the group is encouraged. The second was the idea of establishing fellowships to encourage researchers to spend more time in practice settings such as cooperative training programs and externships. The third was to encourage policymakers to work with regional HSR training or research centers. Of these options, several respondents felt it would be most productive to fund researchers to work in practice-based settings rather than bringing practitioners to the universities.

Discussion

This study is the first assessment of data and methods in PHSR. As discussed at length in the interviews, PHSR is a relatively new area of investigation, especially when compared to HSR. However, it is in a period of rapid growth particularly with regard to new methods and data that may be used to answer its most important questions.

Throughout the key informant interviews, and in some of the open-ended comments on the PHSR IG survey, respondents

noted that definitional issues in PHSR are challenging to resolve. Some commented that they feel that many in PHSR define the scope of research too narrowly by focusing primarily on state and local public health departments rather than on the interaction of public health policies and programs with clinical services. Among the PHSR IG community, this discussion continues.

The small number of papers on methodological developments in the field is just one indication that PHSR is in its infancy. While some respondents mentioned data limitations as a barrier to conducting more rigorous research—particularly with regard to data limitations for financial data and organizational dynamics of local public health services—others felt that definitional and measurement issues are paramount. Particularly in the key informant interviews, respondents noted that the most important issues at this juncture are for PHSR to refine the scope of the field, agree to key definitions, and develop new measures that will enable collection of valid and reliable data.²¹

There was wide agreement that there is a need for methods training in the field, with nearly three-quarters of survey respondents in support of continuing education in methods. Some interviewees and survey respondents noted that basic statistical methods should be refreshed, with an emphasis on multilevel regression. Others commented on the need for training in econometric methods, analysis of geo-spatial data, and mixed methods. By and large, however, the main focus of comments was that it would be beneficial, at this juncture, to steep the field in a more rigorous scientific approach to conducting research, and that by fostering a "culture of scientific inquiry," the field would be better positioned to support new methodological skills and to collaborate with methodologically rigorous partners in HSR.

More opportunities to fund training in PHSR were also considered an important approach to building the field and improving methodological

rigor. Post-doctoral fellowships and co-op training programs with public health departments were suggested by several of the interviewees as important approaches to training. Some respondents identified these as potential ways to link the practice and research communities as well, particularly if some fellowships involved spending time working and conducting research in a practice-based setting.

While many respondents noted funding and data limitations, including several who made a plea for expanded funding for data collection and research activities in PHSR, others felt that there are currently creative and resourceful researchers who are exploring new data sets and methodological techniques. As one student interviewee commented, there is recognition that PHSR is complex, and that as a result, researchers in the field must be resourceful. That student suggested a reconsideration of how to link appropriate sources of data to answer meaningful research questions. This does not diminish the need to invest in new data systems and improve existing data collection activities, but demonstrates the willingness and growing capacity of the field to respond to these unique analytic challenges. It also suggests that students being trained in inter-disciplinary approaches may eventually contribute to PHSR's rigor by incorporating unique approaches to this complex line of inquiry.

As PHSR looks to the future, it may be worth considering several standards of evidence-based practice that could guide the field toward rigorous research standards. Standards of evidence used to develop the CDC's Community Guide are one benchmark of high quality studies; other examples include Quality of Reporting of Meta-analysis (QUOROM) and Meta-analysis of Observational Studies in Epidemiology (MOOSE). While many currently available data systems may not support these standards, it may be useful for researchers who are developing new data and measures for PHSR to refer to these efforts and design future data collection strategies with these methodological standards in mind.

Finally, the need for ongoing dialogue between researchers and the policy and practice communities was identified as a critical component of conducting rigorous, meaningful research in PHSR. Only by working closely with those who deliver public health services, can researchers ask appropriate questions, construct meaningful measures, and ensure that PHSR makes a meaningful contribution to public health practice. This needs assessment is focused on data and methods, but acknowledges that a firm grounding in practice provides crucial context for the conceptual models that should ground rigorous research.

Conclusion

Findings from the literature review, PHSR IG survey, and key informant interviews demonstrate strong interest and support for PHSR. These results are a strong indication that, despite its youth, there is tremendous potential for PHSR to make meaningful contributions to public health.

Contextual issues greatly influencing the current direction of PHSR are primarily related to funding. For example, while respondents made many innovative suggestions for advancing the field, there was recognition that the lack of a reliable funding stream hinders PHSR. It was suggested that, rather than chase the important research questions, researchers must chase the scarce PHSR dollars. As a growing and young field, PHSR has the promise of attracting a new and diverse workforce of researchers who can contribute to its body of work by asking unique questions about population health. Yet their efforts are likely to be constrained by limited funding for research and for training and professional development.

The data also point to some important next steps for enhancing PHSR's rigor. Of note was respondents' call for the field to resolve definitional issues, improve data sources, develop new measures, provide more

methods training, and continue to engage policymakers and practitioners.

There are exciting developments that suggest significant progress. While it was confirmed in undertaking this study that much of the previously published PHSR is descriptive in nature; it is evident that interventional and translational research will be required to answer PHSR's emerging research questions. For example, researchers are making strides to examine the degree of variation in public health practice across communities and variation's influence on health outcomes.²² There is great expectation that such research will be conducted at the PERRCs, the preparedness centers funded through CDC, as well as through Practice Based Research Networks (PBRNs). PBRNs have been used successfully in the medical research fields to increase the production and translation of research and allow practitioners to collaborate with researchers in designing, implementing, evaluating, and diffusing solutions to real-world problems in clinical practice. RWJF has recently funded 15 PBRNs, composed of state and local public health agencies, community partners, and a research institution to design, implement, and translate PHSR.²³

Now is a unique time for the U.S. health care system, and public health in particular... as the confluence of health reform, renewed focus on prevention, and current spread of the H1N1 virus brings great visibility to the public health system. Public health practitioners yearn for best practices and proven interventions. Nearly three-quarters of survey respondents who self-identified as 'users' of PHSR said that PHSR "informs their decision-making in policy and practice." Researchers must respond to this opportunity by making meaningful contributions to evidence-based decision-making. Efforts to enhance PHSR's infrastructure will result in meaningful linkages between PHSR and improvements in the public's health.

Appendix 1:

Public Health Systems Research Methods Advisory Committee

Linda Bilheimer, Ph.D.

Associate Director for Analysis and
Epidemiology
National Center for Health Statistics

Bryan Dowd, Ph.D.

Professor
Division of Health Policy and Management
University of Minnesota

Dave Grembowski, Ph.D.

Professor
Department of Health Services
Dental Public Health Services
University of Washington

Diane Martin, Ph.D., M.A.

Professor
Department of Health Services
University of Washington

Glen P. Mays, Ph.D., M.P.H.

Professor and Chair
Department of Health Policy and
Management
Fay W. Boozman College of Public Health
University of Arkansas for Medical Sciences

Gulzar H. Shah, Ph.D., MStat, M.S.

Senior Analyst II, Research and Evaluation
National Association of County and City
Health Officials

Michael A. Stoto, Ph.D.

Professor of Health Services Administration
and Population Health
Georgetown University School of Nursing
& Health Studies

Appendix 2: Demographic comparison of AcademyHealth and PHSR IG Survey Respondents

Primary Discipline of Survey Respondents

| | AcademyHealth Member Survey | PHSR Methods Survey |
|--------------------------|-----------------------------|---------------------|
| Public Health | 21.5% | 37.7% |
| Public Policy | 16.7% | 8.2% |
| Economics | 3.8 % | 7.5 % |
| Nursing | 7.1 % | 5.5 % |
| Psychology | 2.3% | 5.5% |
| Sociology | 4.0% | 4.0% |
| Medicine | 10.9 % | 3.4 % |
| Public Administration | 1.6% | 3.4% |
| Business Administration | 0.6 % | 2.7 % |
| Law | 0.7% | 1.4 % |
| Anthropology | 0.4 % | 0.7 % |
| Operations Research | 0.1% | 0.7% |
| Political Science | 1.1% | 0.7% |
| Health Services Research | 13.3 % | N/A |

Sex

| | AcademyHealth Member Survey | PHSR Methods Survey |
|--------|-----------------------------|---------------------|
| Male | 39% | 44% |
| Female | 61% | 56% |

Age Distribution

| | AcademyHealth Member Survey | PHSR Methods Survey |
|------------|-----------------------------|---------------------|
| Under 30 | 9% | 8% |
| 30-42 | 34% | 31% |
| 43-59 | 45% | 44% |
| 60 or over | 12% | 18% |

Highest level of education obtained in current primary discipline:

| | Academy Health Members | PHSR Methods Survey |
|-------------------------------------|------------------------|---------------------|
| Undergraduate Minor | 0% | 0% |
| Associate's degree (AA) | 0% | 0% |
| Bachelor's degree (B.A., B.S. etc.) | 7% | 3% |
| Master's degree (M.A. M.S., etc.) | 27% | 23% |
| J.D. | 1% | 1% |
| Ph.D. | 51% | 50% |
| M.D. | 12% | 8% |
| Post-Doctoral Fellowship | 5% | 7% |

Appendix 3: PHSR Interest Group - Data and Methods Survey

*Please note: Due to the structure of skip patterns in SurveyMonkey, a series of questions were repeated for different response groups (Q 10-22 and 38). Those questions are not repeated in the tables below. In addition, a series of open-ended response, as well as questions included in this survey on behalf of colleagues at the University of Kentucky, are not presented in the this appendix.

Q1. Would you describe yourself as a researcher who conducts Public Health Systems Research (PHSR), or a user/reviewer of PHSR? PHSR is defined as “field of study that examines the organization financing field of study that examines the organization and delivery of public health services within communities and the impact of these services on public health.”(Mays et al. 2003)(select one)”

| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
|-----------------|------------|----------------|------|----------|------|----------|-------|-----------|
| Researcher | 79 | N/A | 0 | N/A | 0 | N/A | 79 | 46.5% |
| Both | 0 | N/A | 64 | N/A | 0 | N/A | 64 | 37.6% |
| User | 0 | N/A | 0 | N/A | 27 | N/A | 27 | 15.9% |
| Neither | 0 | N/A | 0 | N/A | 0 | N/A | 0 | 0.0% |
| Don't know | 0 | N/A | 0 | N/A | 0 | N/A | 0 | 0.0% |
| Other (FILL IN) | 0 | N/A | 0 | N/A | 0 | N/A | 0 | 0.0% |
| Total | 79 | N/A | 64 | N/A | 27 | N/A | 170 | 100.0% |

Q2. What types of research methods do you use when conducting PHSR? (select all that apply)

| Answer Options | Researcher | Researcher (%) | Both | Both (%) | Total | Total (%) |
|-----------------|------------|----------------|------|----------|-------|-----------|
| Quantitative | 57 | 77.0% | 34 | 57.6% | 91 | 68.4% |
| Mixed Methods | 47 | 63.5% | 43 | 72.9% | 90 | 67.7% |
| Qualitative | 37 | 50.0% | 26 | 44.1% | 63 | 47.4% |
| Other (FILL IN) | 2 | 2.7% | 3 | 5.1% | 5 | 3.8% |
| None | 0 | 0.0% | 1 | 1.7% | 1 | 0.8% |
| Don't know | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Total | 74 | N/A | 59 | N/A | 133 | N/A |

Appendix 3 (Continued)

| Q3. What types of study designs do you most commonly use when conducting PHSR? (select all that apply) | | | | | | |
|---|------------|----------------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | Total | Total (%) |
| Cross-Sectional Studies | 49 | 66.2% | 34 | 58.6% | 83 | 62.9% |
| Case Studies | 33 | 44.6% | 30 | 51.7% | 63 | 47.7% |
| Systematic reviews (including systematic literature review) | 20 | 27.0% | 29 | 50.0% | 49 | 37.1% |
| Quasi-Experimental Studies | 29 | 39.2% | 18 | 31.0% | 47 | 35.6% |
| Longitudinal Studies | 29 | 39.2% | N/A | N/A | 29 | 22.0% |
| Mathematical Models (includes simulation) | 12 | 16.2% | 13 | 22.4% | 25 | 18.9% |
| Decision Analysis | 11 | 14.9% | 9 | 15.5% | 20 | 15.2% |
| Other (FILL IN) | 8 | 10.8% | 10 | 17.2% | 18 | 13.6% |
| Experimental Studies | 10 | 13.5% | 4 | 6.9% | 14 | 10.6% |
| Registry Studies | 4 | 5.4% | 5 | 8.6% | 9 | 6.8% |
| Randomized Control Trials | 5 | 6.8% | 3 | 5.2% | 8 | 6.1% |
| Forecasting | 6 | 8.1% | N/A | N/A | 6 | 4.5% |
| None | 1 | 1.4% | 1 | 1.7% | 2 | 1.5% |
| Don't know | 1 | 1.4% | 0 | 0.0% | 1 | 0.8% |
| Total | 74 | N/A | 58 | N/A | 132 | N/A |

| Q5. Which of the following types of data do you commonly use? | | | | | | |
|--|------------|----------------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | Total | Total (%) |
| Both | 46 | 62.2% | 40 | 69.0% | 87 | 65.1% |
| Secondary Data | 19 | 25.7% | 16 | 27.6% | 35 | 26.5% |
| Primary Data | 9 | 12.2% | 2 | 3.4% | 11 | 8.4% |
| Neither | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Don't know | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Total | 74 | 100% | 58 | 100% | 133 | 100% |

Appendix 3 (Continued)

| Q5a. If you use secondary data, which of the following types do you commonly use? (select all that apply) | | | | | | |
|--|------------|----------------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | Total | Total (%) |
| Survey Data | 54 | 76.1% | 37 | 66.1% | 92 | 72.3% |
| Administrative Data | 50 | 70.4% | 36 | 64.3% | 87 | 68.3% |
| Census Data | 34 | 47.9% | 29 | 51.8% | 63 | 50.0% |
| Publicly Available Linked Data Files | 32 | 45.1% | 22 | 39.3% | 54 | 42.9% |
| Surveillance Data | 23 | 32.4% | 27 | 48.2% | 50 | 39.6% |
| Vital Statistics | 19 | 26.8% | 26 | 46.4% | 45 | 35.6% |
| Other (FILL IN) | 3 | 4.2% | 5 | 8.9% | 8 | 6.3% |
| I don't use secondary data | 2 | 2.8% | 0 | 0.0% | 2 | 1.6% |
| Don't know | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Total | 71 | N/A | 56 | N/A | 127 | N/A |

| Q6. What unit of observation do you generally investigate? (select all that apply) | | | | | | |
|---|------------|----------------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | Total | Total (%) |
| Individual | 45 | 60.8% | 28 | 49.1% | 74 | 56.2% |
| Provider (including facilities) | 39 | 52.7% | 26 | 45.6% | 66 | 50.0% |
| County/City/Municipality | 29 | 39.2% | 30 | 52.6% | 59 | 45.3% |
| State/Territory | 27 | 36.5% | 32 | 56.1% | 59 | 45.3% |
| Clinic | 21 | 28.4% | 11 | 19.3% | 32 | 24.6% |
| National | 19 | 25.7% | N/A | N/A | 19 | 14.7% |
| Other (FILL IN) | 2 | 2.7% | N/A | N/A | 2 | 1.5% |
| Don't know | 1 | 1.4% | N/A | N/A | 1 | 0.8% |
| Total | 74 | N/A | 57 | N/A | 131 | N/A |

Appendix 3 (Continued)

| Q7. What unit of analysis do you generally investigate? (select all that apply) | | | | | | |
|--|------------|----------------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | Total | Total (%) |
| State/Territory | 40 | 58.8% | 37 | 66.1% | 78 | 62.6% |
| County/City/Municipality | 38 | 55.9% | 30 | 53.6% | 69 | 55.3% |
| National | 27 | 39.7% | 27 | 48.2% | 54 | 43.9% |
| Census Tract/Zip Code | 16 | 23.5% | 12 | 21.4% | 28 | 22.8% |
| Other (FILL IN) | 10 | 14.7% | 4 | 7.1% | 14 | 11.4% |
| Don't know | 3 | 4.4% | 0 | 0.0% | 3 | 2.5% |
| Total | NA | N/A | N/A | N/A | N/A | N/A |

| Q8. In your role as a user/reviewer of PHSR, how would you characterize yourself? (select all that apply) | | | | | | |
|--|------|----------|------|----------|-------|-----------|
| Answer Options | Both | Both (%) | User | User (%) | Total | Total (%) |
| Policymaker/Policy Analyst | 31 | 54% | 13 | 54.2% | 44 | 54.3% |
| Educator | 20 | 35% | 8 | 33.3% | 28 | 34.6% |
| Public Health Practitioner | 17 | 30% | 4 | 16.7% | 21 | 25.9% |
| Other (FILL IN) | 13 | 23% | 4 | 16.7% | 17 | 21.0% |
| Public Health Advocate | 14 | 25% | 3 | 12.5% | 17 | 21.0% |
| Total | NA | N/A | NA | N/A | NA | N/A |

| Q9. Do PHSR findings inform your decision-making in policy and practice? | | | | | | |
|---|------|----------|------|----------|-------|-----------|
| Answer Options | Both | Both (%) | User | User (%) | Total | Total (%) |
| Yes | 44 | 77.2% | 15 | 65.2% | 59 | 73.7% |
| Don't know | 7 | 12.3% | 7 | 30.4% | 14 | 17.5% |
| No | 6 | 10.5% | 1 | 4.3% | 7 | 8.8% |
| Total | 57 | 100% | 23 | 100% | 80 | 100% |

Appendix 3 (Continued)

| Q10. If not, why? | | | | | | |
|--|-----------|-------------|----------|-------------|-----------|-------------|
| Answer Options | Both | Both (%) | User | User (%) | Total | Total (%) |
| Other (FILL In) | 5 | 38.5% | 2 | 28.6% | 7 | 35% |
| Doesn't address the research questions of interest to me | 2 | 15.4% | 3 | 42.9% | 5 | 25% |
| Difficult to understand | 4 | 30.8% | 1 | 14.3% | 5 | 25% |
| Difficult to find | 2 | 15.4% | 1 | 14.3% | 3 | 15. % |
| Don't know | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Total | 13 | 100% | 7 | 100% | 20 | 100% |

| Q22. How strongly do you agree with this statement: "PHSR findings are credible." | | | | | | | | |
|--|------------|----------------|------------|------------|-----------|---------------|-----------|---------------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
| Strongly Agree | 20 | 30% | N/A | N/A | 3 | 15.8% | 23 | 26.8% |
| Agree | 28 | 42% | N/A | N/A | 11 | 57.9% | 39 | 45.3% |
| Neutral | 16 | 24% | N/A | N/A | 5 | 26.3% | 21 | 24.4% |
| Disagree | 2 | 3% | N/A | N/A | 0 | 0.0% | 2 | 2.3% |
| Strongly Disagree | 1 | 1% | N/A | N/A | 0 | 0.0% | 1 | 1.2% |
| Total | 67 | 100% | N/A | N/A | 19 | 100.0% | 87 | 100.0% |

| Q24. What, if any, barriers to advancing PHSR methods do you foresee? (Select all that apply) | | | | | | | | |
|--|------------|----------------|------|----------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
| Funding | 50 | 72% | N/A | N/A | 17 | 73.9% | 67 | 72.8% |
| Availability of data | 40 | 58% | N/A | N/A | 17 | 73.9% | 57 | 62.0% |
| Lack of training opportunities | 21 | 30% | N/A | N/A | 11 | 47.8% | 32 | 34.8% |
| Leadership | 19 | 28% | N/A | N/A | 9 | 39.1% | 28 | 30.4% |

Appendix 3 (Continued)

| | | | | | | | | |
|--|----|-----|-----|-----|----|-------|----|-------|
| Other (FILL IN) | 12 | 17% | N/A | N/A | 1 | 4.3% | 13 | 14.1% |
| Questionable sustainability of the field overall | 3 | 4% | N/A | N/A | 5 | 21.7% | 8 | 8.7% |
| Total | 69 | N/A | N/A | N/A | 23 | N/A | 92 | N/A |

Q25. Does your organization train public health systems researchers, either in a formal educational setting (e.g. University) or on the job?

| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
|----------------|------------|----------------|------|----------|------|----------|-------|-----------|
| Yes | 40 | 57.1% | N/A | N/A | 7 | 30.4% | 47 | 50.5% |
| No | 30 | 42.9% | N/A | N/A | 16 | 69.6% | 46 | 49.5% |
| Total | 70 | 100.0% | N/A | N/A | 23 | 100% | 93 | 100% |

Q26. Are you aware of formal training programs at the master's or doctoral level that focus on training in PHSR?

| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
|----------------|------------|----------------|------|----------|------|----------|-------|-----------|
| Yes | 22 | 31.0% | N/A | N/A | 5 | 21.7% | 27 | 29.0% |
| No | 48 | 69.0% | N/A | N/A | 18 | 78.3% | 66 | 71.0% |
| Total | 70 | 100% | N/A | N/A | 23 | 100% | 93 | 100.0% |

Q28. Do you think continuing education in methods for PHSR would be beneficial for the field?

| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
|----------------|------------|----------------|------|----------|------|----------|-------|-----------|
| Yes | 50 | 70% | N/A | N/A | 20 | 87.0% | 70 | 74.5% |
| Not sure | 18 | 25% | N/A | N/A | 2 | 8.7% | 20 | 21.3% |
| No | 3 | 4% | N/A | N/A | 1 | 4.3% | 4 | 4.3% |
| Total | 71 | 100% | N/A | N/A | 23 | 100% | 94 | 100.0% |

Q30. Do you have individuals on staff who conduct PHSR as part of their job?

| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
|----------------|------------|----------------|------|----------|------|----------|-------|-----------|
| Yes | 41 | 60.3% | 30 | 53.6% | 8 | 34.8% | 79 | 53.7% |
| No | 27 | 39.7% | 26 | 46.4% | 15 | 65.2% | 68 | 46.3% |
| Total | 68 | 100% | 56 | 100% | 23 | 100% | 147 | 100% |

Appendix 3 (Continued)

Q31. In the past 5 years, have you hired or attempted to hire faculty/staff members to conduct PHSR as part of their job responsibilities?

| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
|------------------------|------------|----------------|------|----------|------|----------|-------|-----------|
| Yes, Hired | 22 | 32.4% | 15 | 26.8% | 3 | 13.1% | 40 | 27.2% |
| Yes, Attempted to Hire | 6 | 8.8% | 4 | 7.1% | 1 | 4.3% | 11 | 7.5% |
| No | 40 | 58.8% | 37 | 66.1% | 19 | 82.6% | 96 | 65.3% |
| Total | 68 | 100% | 56 | 100% | 23 | 100% | 147 | 100.0% |

Q32. If yes, how strongly do you agree with this statement: "individuals who applied to positions to conduct PHSR had appropriate/sufficient training in analytic methods."

| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
|-------------------|------------|----------------|------|----------|------|----------|-------|-----------|
| Strongly Agree | 6 | 14.0% | 2 | 8.0% | 1 | 9.1% | 9 | 11% |
| Agree | 16 | 37.2% | 7 | 28.0% | 3 | 27.3% | 26 | 33% |
| Neutral | 15 | 34.9% | 11 | 44.0% | 5 | 45.5% | 31 | 39% |
| Disagree | 4 | 9.3% | 4 | 16.0% | 2 | 18.2% | 10 | 13% |
| Strongly Disagree | 2 | 4.7% | 1 | 4.0% | 0 | 0.0% | 3 | 4% |
| Total | 43 | 100.0% | 25 | 100.0% | 11 | 100.0% | 79 | 100% |

Q33. Is your organization affiliated with any of the following types of libraries? (Select all that apply)

| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
|---|------------|----------------|------|----------|------|----------|-------|-----------|
| Academic Library | 52 | 77.6% | 30 | 54.5% | 8 | 36.4% | 90 | 62.5% |
| Academic Public Health or Medical Library | 37 | 55.2% | 24 | 43.6% | 8 | 36.4% | 69 | 47.9% |
| Private Collection/Internal Library | 13 | 19.4% | 7 | 12.7% | 5 | 22.7% | 25 | 17.4% |
| None of the Above | 6 | 9.0% | 13 | 23.6% | 3 | 13.6% | 22 | 15.3% |
| Public Library | 10 | 14.9% | 5 | 9.1% | 5 | 22.7% | 20 | 13.9% |
| Don't know | 1 | 1.5% | 3 | 5.5% | 2 | 9.1% | 6 | 4.2% |
| Total | 67 | N/A | 55 | N/A | 22 | N/A | 144 | N/A |

Appendix 3 (Continued)

| Q36. What are the top 3 journals in which you expect to find PHSR information? | | | | | | | | |
|--|------------|----------------|------|----------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
| <i>Health Affairs</i> | 41 | 61.2% | 36 | 64.3% | 14 | 63.6% | 91 | 62.8% |
| <i>American Journal of Public Health</i> | 45 | 67.2% | 28 | 50.0% | 14 | 63.6% | 87 | 60.0% |
| <i>HSR</i> | 39 | 58.2% | 27 | 48.2% | 11 | 50.0% | 77 | 53.1% |
| <i>Journal of Public Health Management and Practice</i> | 32 | 47.8% | 28 | 50.0% | 11 | 50.0% | 71 | 49.0% |
| <i>Public Health Reports</i> | 17 | 25.4% | 17 | 30.4% | 8 | 36.4% | 42 | 29.0% |
| Other (FILL IN) | 7 | 10.4% | 7 | 12.5% | 2 | 9.1% | 16 | 11.0% |
| Don't Know | 2 | 3.0% | 3 | 5.4% | 1 | 4.5% | 6 | 4.1% |
| Total | 67 | N/A | 56 | N/A | 22 | N/A | 145 | N/A |

| Q39. What is your primary discipline? (choose only one response) | | | | | | | | |
|--|------------|----------------|------|----------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
| Public Health | 24 | 35.3% | 21 | 37.5% | 10 | 45.5% | 55 | 37.7% |
| Other (FILL IN) | 9 | 13.2% | 6 | 10.7% | 2 | 9.1% | 17 | 11.6% |
| Public Policy | 4 | 5.9% | 6 | 10.7% | 2 | 9.1% | 12 | 8.2% |
| Economics | 6 | 8.8% | 5 | 8.9% | 0 | 0.0% | 11 | 7.5% |
| Epidemiology | 3 | 4.4% | 1 | 1.8% | 4 | 18.2% | 8 | 5.5% |
| Nursing, or other Clinical | 3 | 4.4% | 5 | 8.9% | 0 | 0.0% | 8 | 5.5% |
| Psychology | 4 | 5.9% | 4 | 7.1% | 0 | 0.0% | 8 | 5.5% |
| Sociology | 4 | 5.9% | 0 | 0.0% | 2 | 9.1% | 6 | 4.1% |
| Medicine | 1 | 1.5% | 3 | 5.4% | 1 | 4.5% | 5 | 3.4% |
| Public Administration | 3 | 4.4% | 2 | 3.6% | 0 | 0.0% | 5 | 3.4% |
| Business Administration | 2 | 2.9% | 1 | 1.8% | 1 | 4.5% | 4 | 2.7% |
| Law | 2 | 2.9% | 0 | 0.0% | 0 | 0.0% | 2 | 1.4% |
| Operations Research/ Decision Sciences | 0 | 0.0% | 2 | 3.6% | 0 | 0.0% | 2 | 1.4% |
| Anthropology | 1 | 1.5% | 0 | 0.0% | 0 | 0.0% | 1 | 0.7% |
| Political Science | 1 | 1.5% | 0 | 0.0% | 0 | 0.0% | 1 | 0.7% |
| Statistics | 1 | 1.5% | 0 | 0.0% | 0 | 0.0% | 1 | 0.7% |
| Demography | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Total | 68 | 100.0% | 56 | 100.0% | 22 | 100.0% | 146 | 100% |

Appendix 3 (Continued)

| Q40. Have you received formal training in either Health Services Research (HSR) or PHSR? | | | | | | | | |
|--|------------|------------|------|------------|------|------------|----------------|------------------|
| Answer Options | Researcher | Response % | Both | Response % | User | Response % | Response Count | Response Percent |
| Yes | 42 | 63% | 32 | 57% | 13 | 59.1% | 87 | 60.0% |
| Not Sure | 4 | 6% | 0 | 0% | 0 | 0.0% | 4 | 2.8% |
| No | 21 | 31% | 24 | 43% | 9 | 40.9% | 54 | 37.2% |
| Total | 67 | 100% | 56 | 100% | 22 | 100.0% | 145 | 100.0% |

| Q41. Have you ever participated in an AcademyHealth PHSR Interest Group event? | | | | | | | | |
|--|------------|------------|------|------------|------|------------|----------------|------------------|
| Answer Options | Researcher | Response % | Both | Response % | User | Response % | Response Count | Response Percent |
| Yes | 33 | 49.3% | 26 | 47.3% | 7 | 31.8% | 66 | 45.8% |
| Not Sure | 3 | 4.5% | 0 | 0.0% | 1 | 4.5% | 4 | 2.8% |
| No | 31 | 46.3% | 29 | 52.7% | 14 | 63.6% | 74 | 51.4% |
| Total | 67 | 100.0% | 55 | 100.0% | 22 | 100.0% | 144 | 100.0% |

| Q43. What is the highest level of education you have obtained in your current primary discipline? | | | | | | | | |
|---|------------|----------------|------|----------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
| Ph.D. | 41 | 60% | 24 | 42.9% | 8 | 36.4% | 73 | 50.0% |
| Master's degree (M.A. M.S., etc.) | 6 | 9% | 18 | 32.1% | 9 | 40.9% | 33 | 22.6% |
| Other (please specify) | 7 | 10% | 4 | 7.1% | 2 | 9.1% | 13 | 8.9% |
| M.D. | 4 | 6% | 6 | 10.7% | 1 | 4.5% | 11 | 7.5% |
| Post-Doctoral Fellowship | 5 | 7% | 3 | 5.4% | 2 | 9.1% | 10 | 6.8% |
| Bachelor's degree (B.A., B.S. etc.) | 3 | 4% | 1 | 1.8% | 0 | 0.0% | 4 | 2.7% |
| J.D. | 2 | 3% | 0 | 0.0% | 0 | 0.0% | 2 | 1.4% |
| Associate's degree (AA) | 0 | 0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Undergraduate Minor | 0 | 0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Area of Specialization or Concentration | 0 | 0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Total | 68 | 100% | 56 | 100.0% | 22 | 100.0% | 146 | 100.0% |

Appendix 3 (Continued)

| Q44. What is your age (select one)? | | | | | | | | |
|-------------------------------------|------------|----------------|------|----------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
| Under 30 | 5 | 7% | 3 | 5.6% | 3 | 14.3% | 11 | 7.7% |
| 30-42 | 23 | 34% | 18 | 33.3% | 3 | 14.3% | 44 | 30.8% |
| 43-59 | 30 | 44% | 24 | 44.4% | 9 | 42.9% | 63 | 44.1% |
| 60 or over | 10 | 15% | 9 | 16.7% | 6 | 28.6% | 25 | 17.5% |
| Total | 68 | 100% | 54 | 100% | 21 | 100% | 143 | 100.0% |

| Q45. What is your gender? | | | | | | | | |
|---------------------------|------------|----------------|------|----------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
| Female | 32 | 48% | 32 | 58.2% | 16 | 72.7% | 80 | 55.9% |
| Male | 34 | 52% | 23 | 41.8% | 6 | 27.3% | 63 | 44.1% |
| Total | 66 | 100% | 55 | 100.0% | 22 | 100.0% | 143 | 100.0% |

| Q46. What is your ethnicity (select one)? | | | | | | | | |
|---|------------|----------------|------|----------|------|----------|-------|-----------|
| Answer Options | Researcher | Researcher (%) | Both | Both (%) | User | User (%) | Total | Total (%) |
| Caucasian (non-Hispanic) | 52 | 77.6% | 45 | 83.3% | 17 | 77.3% | 114 | 79.7% |
| Asian/Pacific Islander | 7 | 10.4% | 5 | 9.3% | 2 | 9.1% | 14 | 9.8% |
| African-American | 2 | 3.0% | 2 | 3.7% | 2 | 9.1% | 6 | 4.2% |
| Other (please specify) | 4 | 6.0% | 1 | 1.9% | 0 | 0.0% | 5 | 3.5% |
| Hispanic | 1 | 1.5% | 1 | 1.9% | 1 | 4.5% | 3 | 2.1% |
| Multi-racial | 1 | 1.5% | 0 | 0.0% | 0 | 0.0% | 1 | 0.7% |
| Native American | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Total | 67 | 100.0% | 54 | 100.0% | 22 | 100.0% | 143 | 100.0% |

Endnotes

- 1 “Glossary of Terms Commonly Used in Healthcare, 2004 Edition,” AcademyHealth, January 2004. Also see <http://www.academyhealth.org/publications/glossary.pdf>.
- 2 The PHSR IG was initially started with a grant from the CDC. RWJF has subsequently supported the activities of the IG, beginning in 2003.
- 3 Mays, G.P. et al. “Behind the Curve? What we know and need to learn from public health systems research,” *Journal of Public Health Management and Practice*, Vol. 9, No. 3, 2003, pp. 179–182.
- 4 See www.academyhealth.org/phsr.
- 5 Scutchfield, F. D. et al. “Applying Health Services Research to Public Health Practice,” *HSR*. 2009. vol. 44, no. 5, part II. pp. 1775-1787.
- 6 Minott, J. *Advancing Public Health Systems Research: Strategies for Moving Forward*, Public Health Systems Research Special Report, AcademyHealth, June 2007. See also <http://www.academyhealth.org/files/interestgroups/phsr/StrategiesforMovingForward.pdf>.
- 7 Ix, M. *Advancing Public Health Systems Research: Research Priorities and Gaps*, Public Health Systems Research Special Report, AcademyHealth, June 2007. See also <http://www.academyhealth.org/files/interestgroups/phsr/ResearchPrioritiesandGaps.pdf>.
- 8 The grant making effort was established within the existing investigator-initiated grantmaking program, Changes in Health Care Financing and Organization (HCFO), housed at AcademyHealth. From 2006-2009, HCFO facilitated the awarding of 23 grants. See www.hcfo.org.
- 9 Halverson, P. “A Call to Action for Public Health Systems Researchers.” Presentation at the 2008 Public Health Systems Research Interest Group Meeting, Washington, DC; June 7, 2008.
- 10 Personal communication with Shapiro R., University of Kentucky, February 9, 2009. Also see http://www.nlm.nih.gov/nichsr/phssr/phssr_webliography.html.
- 11 Questions about the types of research conducted and data sources used in PHSR were only asked of ‘researchers’ and ‘both’.
- 12 In comparison, 77 percent of those who identify themselves as ‘researchers’ only say they conduct quantitative research while 58 percent of those who define themselves as ‘both’ researchers and users do so.
- 13 Those who describe themselves as ‘both’ researcher and users are more likely to report they conduct systematic reviews (50 percent).
- 14 Those who describe themselves as ‘researchers’ only are much more likely to report using surveillance data (32 percent) or vital statistics data (27 percent) compared to those who describe themselves as ‘both’ researchers and users (48 percent and 46 percent, respectively).
- 15 Among respondents who identified themselves as ‘researchers’ only, one out of four (25 percent) reported that they use units of observation at the national level. Those who see themselves as ‘both’ researchers and users of PHSR are more likely to report using state units of observation (56 percent) compared to those who are ‘researchers and users’ of PHSR (37 percent).
- 16 It is important to note the major differences between the two subsets: 74 percent of ‘users’ only reported the availability of data as an obstacle compared to 58 percent of ‘researchers’ only. In addition, close to half (48 percent) of ‘users’ only mentioned the lack of training opportunities as an obstacle compared to one in three (30 percent) ‘researchers’ only.
- 17 Due to a technical error with the survey program, respondents who identified themselves as ‘both’ researchers and users of PHSR were not asked a series of questions, including the questions about credibility of PHSR and about their perception of barriers to advancing PHSR methods.
- 18 One in four ‘researchers’ only (25 percent) reported not knowing if continuing education would benefit PHSR, in contrast to nine percent of users.
- 19 Donabedian, A., Bashshur, R. 2003. An Introduction to Quality Assurance in Health Care. United States: Oxford University Press.
- 20 Zaza, S. et al., eds. 2005. The Guide to Community Preventive Services. United States: Oxford University Press. Also see <http://www.thecommunityguide.org/library/book/index.html>, section three, chapters 10 and 12.
21. Important efforts are underway to build and enhance core data resources used in PHSR. One such effort is that being made by three national organizations—the Association of State and Territorial Health Officials (ASTHO), the National Association of County and City Health Officials (NACCHO), and the National Association of Local Boards of Health (NALBOH)—with support from the Robert Wood Johnson Foundation (RWJF) and the Centers for Disease Control and Prevention (CDC). These agencies will collect longitudinal data through periodic surveys of their memberships, the nation’s state and local public health agencies and local boards of health. The University of Kentucky’s ‘data harmonization’ project will work with all of these partners to ensure that comparable data is collected across organizations. Another important resource is the National Library of Medicine’s Health Services and Sciences Research Resources (HSRR) system, which seeks to increase awareness of datasets and indices that can be used to conduct health services research. HSRR includes a specific subset of approximately 161 PHSR datasets, a list that is maintained by the University of Kentucky.
- 22 Mays, G.P. “A Call to Action trfor Public Health Systems Researchers.” Presentation at the 2008 Public Health Systems Research Interest Group Meeting, Washington, DC; June 7, 2008.
- 23 See <http://www.publichealthsystems.org/pbrn>

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