HSRProj
Health
Services
Research
Projects in Progress
an NLM sponsored program

UPDATE: Public Health Services and Systems Research, 2003-2011

Introduction

Public health services and systems research (PHSSR) is a relatively new field of study, and is evolving. In light of interest in understanding this important area of research, AcademyHealth staff conducted an analysis of the HSRProj database to review support for PHSSR.

The goals of this brief are to:

- demonstrate the potential use of HSRProj to identify PHSSR;

- share search strategies for PHSSR, based on the published PHSSR definitions and the search terms used by the University of Kentucky College of Public Health;

- identify a reasonable range of studies that may be PHSSR; and

- describe results for a subset of projects in HSRProj that are explicitly defined as PHSSR, including key funders and funding trends over time.

Overall, the findings aim to highlight the utility of HSRProj as a resource for PHSSR professionals, and demonstrate the importance of contributing information on PHSSR projects in progress to the HSRProj database.
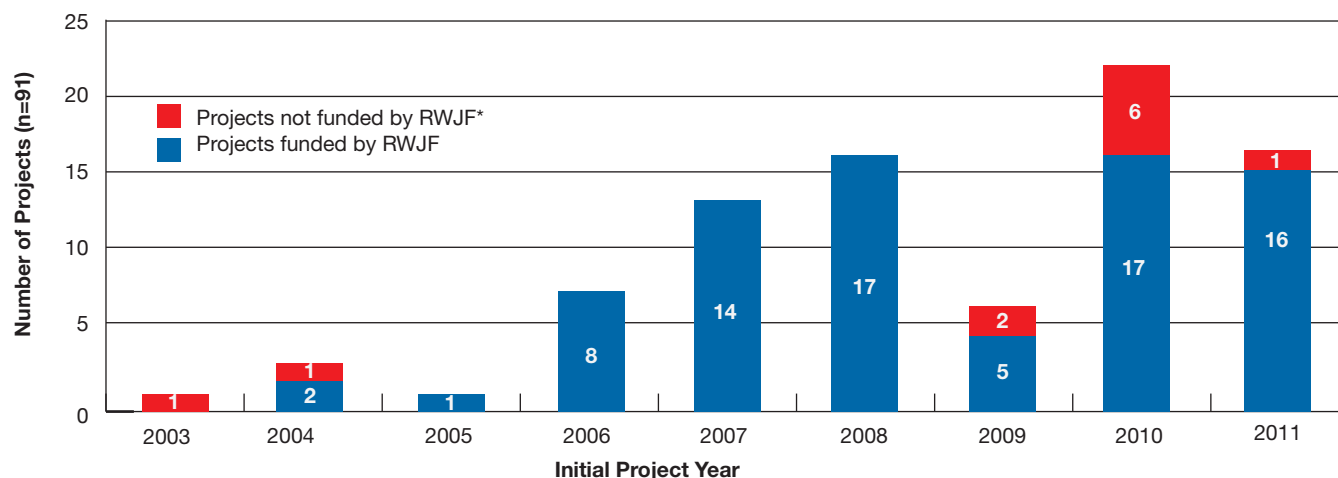
Background

First defined by Glen P. Mays, et al. in 2003, 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 public health."[1] In 2007, F. Douglas Scutchfield, et al. expanded the definition and the name—"public health services and systems research" (PHSSR)—in order to reflect upon and invite a broader scope of inquiry, and to recognize that public health services are conducted by a broad and multi-sectoral public health system.[2] PHSSR[3] has grown rapidly as a result of a need to develop more effective public health systems, improve population health, and eliminate health disparities.[4] One indication of growing interest in PHSSR is the substantial growth of AcademyHealth's PHSR Interest Group (IG),[5] representing a subset of health services researchers and policymakers interested in population health.[6]

The National Library of Medicine's (NLM) Health Services Research Projects in Progress (HSRProj)[7] is a free online resource that provides access to recently funded health services research (HSR)[8] projects and provides a unique opportunity for the research community to view the range of research topics being explored, including those relevant to PHSSR. The HSRProj database contains over 23,000 projects, of which over 10,000 projects are either ongoing or completed.[9]

HSRProj is the most extensive collection of HSR in progress and is based on a comprehensive review of more than 146 sponsoring organizations, including federal and state agencies, foundations, private organizations, and universities that support this research. HSRProj staff rigorously evaluates projects to ensure that all relevant HSR is included in the database. Because HSRProj is a central repository for funded HSR, it serves as a barometer for the current funding landscape and can be used to review special areas of focus of the field. HSRProj is also a useful tool for identifying major funders of HSR or current gaps in research. Because many PHSSR topics are relevant and timely for inclusion in HSRProj, AcademyHealth recently conducted an analysis to explore the volume of PHSSR projects that are represented in the HSRProj database.

Figure 1: **PHSSR Projects in HSRProj[10]**

*Additional funders include: the Agency for Healthcare Research and Quality, the National Cancer Institute, the National Institute on Drug Abuse, the National Institute on Aging, the National Institute of Diabetes and Digestive and Kidney Diseases, the National Institute on Minority Health and Health Disparities, the Centers for Disease Control and Prevention, and the Health Resources and Services Administration Maternal and Child Health Bureau.

Findings

Of all HSRProj records (n=23,366), 19 percent make some reference to "public health." All "public health systems research" projects in the database have a start date of 2003 or later, as do the majority of "public health systems" projects (79 percent). These results generally align with the year PHSR was defined. For this reason, we have only summarized PHSSR projects initiated in 2003 or later. Table 1 summarizes results from a series of keyword searches for PHSSR that were conducted in the HSRProj database.

The search pertaining to the PHSSR definitions resulted in 2,228 unduplicated records in HSRProj. This encompasses 67 percent of all public health records in HSRProj. The search pertaining to the search terms used by the University of Kentucky College of Public Health resulted in 1,502 records, comprising 45 percent of all public health records in HSRProj. The search for preparedness projects resulted in 40 projects. Together, the three search strategies resulted in a total of 2,501 unique projects. Appendix A highlights the number of records from all searches conducted in the study.

Given the large number of potential PHSSR projects in the HSRProj database, it was determined that detailed review of approximately 2,500 project records was beyond the scope of the anticipated effort for this brief. As a result, the review of funding trends is focused on the most precise search for PHSSR defined by the keyword phrase searches (n=91), all of which were positively identified by staff as PHSSR conforming to either the published PHSSR definitions or the search terms used by the University of Kentucky College of Public Health.

Figure 1 (see first page) shows the distribution of PHSSR records from 2003-2011. As shown, the number of funded PHSSR projects peaked in 2010, with a total of 23 projects, including 17 Robert Wood Johnson Foundation (RWJF) funded projects and 6 projects funded by other sponsoring organizations. In 2011, RWJF funded 16 PHSSR projects.

In fact, RWJF funds the vast majority of PHSSR projects identified in the database, though several other organizations including the Agency for Healthcare Research and Quality (AHRQ), the National Cancer Institute (NCI), the National Institute on Aging (NIA), the National Institute on Minority Health and Health Disparities (NIMHD), and the Centers for Disease Control and Prevention (CDC), among others, have begun funding this work over the past few years. For a table of projects highlighted in Figure 1, including project titles, abstracts, initial and final project years, and principal investigators, please see Appendix B (available via AcademyHealth's website at www.AcademyHealth.org/HSRProjUpdates).

The majority of performing organizations that conducted PHSSR research are academic institutions (n=57; 63 percent). Associations (n=15; 16 percent), non-profit research institutes and individual researchers (n=10; 11 percent), and federal, state, local, and tribal governments (n=9; 10 percent) comprise the remaining performing organizations.

It is also important to note that in supporting the development of the field, many "infrastructure" grants were awarded, and these projects are included in the total number of projects reported. Infrastructure awards allow for development of data and tools, methods training, student scholarships, agenda setting, and other field-building activities. These projects have been distinguished from "research" awards for the conduct of investigator-initiated research. Our review of these projects identified 13 infrastructure awards, comprising 14 percent of the total number of grants reviewed.

Discussion

With more than 23,000 records, HSRProj is a useful tool for analyzing trends in HSR, particularly with regard to identifying funding for emerging areas of research. Results from this analysis indicate that due to the evolution of concepts related to PHSSR, there is no single appropriate set of search strategies for work in this area. While a highly specific search strategy generates 91 project records that are appropriately targeted, broader search strings that seek to identify concepts associated with the definitions of PHSR and PHSSR identify approximately 2,500 records that *may* be PHSSR.

The results demonstrate a general increase in support for PHSSR over time, led by funding from RWJF. These findings are consistent with results from AcademyHealth's 2009 report "A Needs Assessment for Data and Methods in Public Health Systems Research," which identified an increase in peer reviewed literature focused on PHSR methods between 1991 and 2008, with a substantial increase from 2005 to 2008.[11] Although RWJF began making small investments in PHSSR prior to 2005, 2005 marked the year that RWJF started making larger and consistent investments in this area. The support for infrastructure grants is also noteworthy, in light of the substantial effort to cultivate this new area of research in public health.

Table 1: **Results for PHSSR Keyword Searches in HSRProj**[12]

PHSSR Keyword Search Strategies	# of Projects in HSRProj (initiated in 2003 or later)
"public health"	3,335
Variations of the keyword phrase "public health services and systems research" or "public health systems research"	91
Concepts related to the published definitions of the field[13]	2,228
Concepts related to the search terms used by the University of Kentucky[14]	1,502
"public health" AND "preparedness"	40
Total unduplicated count of PHSSR projects	**2,501**

Results also demonstrate that a majority of PHSSR research is conducted by academic institutions. These results correspond with a 2009 review of the HSRProj database, which indicates that 58 percent of ongoing HSR in 2008 was conducted by educational institutions.[15] A study performed by Brown and Thornton in 2009 also found that academic institutions conducted the majority (54 percent) of projects listed in HSRProj from 2000–2005.[16]

Conclusion and Next Steps

This brief highlights the utility of HSRProj in identifying PHSSR projects, pinpoints a subset of 91 projects that are PHSSR distinguished by funder and project type, and shows the range of projects that may be PHSSR. Results from the searches using the two established PHSSR definitions suggest that PHSSR research is being conducted by many, though it may not be called "PHSR" or "PHSSR" specifically, necessitating the need for multi-faceted search strategies to identify relevant projects in progress.

PHSSR is an emerging area of study, for which there is no common taxonomy or controlled terminology. As a consequence, there are limitations to our efforts to identify all of the relevant terms that correspond to all relevant PHSSR projects. A promising future effort would entail conducting a validation study of the 2,501 projects identified as potentially PHSSR by this analysis. Such a study would assess the extent to which experts in the field agree on what

research falls into PHSSR's domain. Additionally, a review of major topical areas of focus for the field may add valuable information to identify areas of current focus, or gaps for further discussion.[17] In collaboration with our colleagues at the National Library of Medicine, the AcademyHealth PHSR Interest Group, and the National Coordinating Center for PHSSR at the University of Kentucky, HSRProj staff anticipate future collaboration to help identify and monitor trends in PHSSR.

Acknowledgements

Suggested Citation:

Shah, N., Holve, E., Papa, K., Johnson, B., and Kelley, B. **"**HSRProj Update: Public Health Services and Systems Research, 2003-2011." AcademyHealth, 2012. Also see http://www.academyhealth.org/HSRProjUpdates.

Methods

AcademyHealth staff conducted a series of structured queries for PHSSR projects in HSRProj. Searches were conducted in March 2012 and all search terms were applied to the project title, abstract, keywords, and MeSH[18] terms fields for all records from 1991-2011. A subsequent search retained the search criteria and narrowed the initial project start year from 2003, the year that PHSR was formally defined by Glen P. Mays, et al., to present.

To establish a baseline for the broadest or more sensitive search for PHSSR, an initial search for all projects with the keyword phrase "public health" was conducted. Subsequently, a highly specific search for PHSSR keyword phrases was performed. For these, staff conducted searches for keywords within each phrase of "PHSR" and "PHSSR" (see Appendix A for a detailed description of search terms). All of the records from the keyword phrase searches for PHSSR were manually reviewed to ensure the projects conformed to the definitions of the field.

Next, staff conducted searches within the subset of projects identified as public health with a start date of 2003 or later (n=3,335) for keywords pertaining to the published PHSSR definitions. The University of Kentucky College of Public Health's keyword search strategy[19] was also applied to the subset of public health projects in HSRProj with a start date of 2003 or later.[20] To capture public health preparedness projects, many of which address questions that are closely related to PHSSR, an additional search for "preparedness" was conducted[21] since projects focused on preparedness may not include the term "public health systems" in their description.

Projects were unduplicated to identify a unique list of all relevant projects. A subset of records from the most precise or specific search (n=91) was then imported into a Microsoft Excel spreadsheet for further analysis.

Endnotes

1   Mays, G.P., P.K. Halverson and F.D. Scutchfield. "Behind the Curve? What we know and need to learn from public health systems research." Journal of Public Health Management and Practice. 2003;9(3)179-182.

2   Scutchfield, F.D., J.S. Marks, D.J. Perez, and G.P. Mays.. "Public Health Services and Systems Research." American Journal of Preventive Medicine 2007:33(2)169-71.

3   For the purposes of this brief, the authors refer to public health services and systems research (PHSSR) and public health systems research (PHSR) synonymously, except in cases where the authors are referencing specific differences in the definitions or search strategies for particular terms.

4   "Public Health Services and Systems Research: Building Evidence for Decision-Making," Robert Wood Johnson Foundation, 2012. Also see http://www.rwjf.org/files/applications/cfp/cfp_phssr2012.pdf.

5   As of March 19, the PHSR IG is made up of 2,499 individuals and is the second largest of AcademyHealth's 15 IGs.

6   In 2009, the PHSR IG reconsidered the definition of PHSR, and approved of expanding its definition to reflect its multidisciplinary nature and systems approach. To view this definition, please visit www.AcademyHealth.org/PHSR.

7   Developed in 1991, HSRProj is a joint effort of AcademyHealth and the Cecil G. Sheps Center for Health Services Research at the University of North Carolina, Chapel Hill (UNC-CH), with funding from the NLM. The National Information Center on HSR and Health Care Technology (NICHSR) coordinates its development.

8   AcademyHealth defines health services research 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. Please visit http://www.academyhealth.org/About/content.cfm?ItemNumber=831 for more information.

9   All HSRProj records provide the status of the project: ongoing, completed, and archived. If a project has a status of ongoing, that means that the project is currently in the field and the funding cycle has not yet ended. Completed projects are projects that have been recently completed within a four year time period. Archived projects are all projects completed more than four years ago

10   For more information on additional grants reflected in the figure, please visit http://www.nnphi.org/program-areas/research-and-evaluation/phssr/grantees.

11   Holve, E., Papa, K., Arnold, S., and Ix, M. "A Needs Assessment for Data and Methods in Public Health Systems Research." AcademyHealth, 2010. Also see http://www.academyhealth.org/files/interestgroups/phsr/FinalPhsrNAjan2010.pdf

12   Due to end of the year grants management issues, eleven Robert Wood Johnson Foundation -funded PHSSR grants that were initiated at the end of 2011 were not included in HSRProj at the time the analysis was conducted. However, these grants are included in the table and discussion, and will be available in the HSRProj database in the near term. For more information on these grants, please visit http://www.nnphi.org/program-areas/research-and-evaluation/phssr/grantees.

13   Scutchfield, F.D., J.S. Marks, D.J. Perez, and G.P. Mays. op. cit.

14   Scutchfield, F.D., Lawhorn, N., Ingram, R., Perez, D.J., Brewer, R., and Bhandari, M. "Public Health Systems and Services Research: Dataset Development, Dissemination, and Use." Public Health Reports 2009:124. Also see: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2663872/pdf/phr124000372.pdf.

15   Internal document submitted to NLM in 2009.

16   Thornton C, Brown JD. "Employer Demand for Health Services Researchers in 2020." Health Services Research, DOI 10.1111/j.1475-6773.2009.01028.x.

17   An additional analysis was conducted using the qualitative data analysis software NVivo 9 to look at topical areas of focus for each of 91 records on PHSSR. It was determined that few of the searches were sufficiently precise to advance understanding of areas of focus within the field, but that with further input from

the PHSSR community, it may be possible to refine an appropriate list of concepts/topics for future analysis.

18   MeSH (Medical Subject Headings) terms are maintained by the National Library of Medicine and allow for searching at different degrees of specificity. All HSRProj records are tagged with at least one MeSH term.

19   For more information, please visit http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2663872/pdf/phr124000372.pdf.

20   Scutchfield, F.D., Lawhorn, N., Ingram, R., Perez, D.J., Brewer, R., and Bhandari, M. op. cit.

21   The 2006 Pandemic and All-Hazards Preparedness Act (PAHPA) was the first legislative reference to PHSR by the Federal government. The Secretary of the U.S. Department of Health and Human Services was authorized to identify the existing PHSR 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 Centers for Disease Control and Prevention (CDC) Office of Preparedness and Response (OPHPR) has funded nine Preparedness and Emergency Response Research Centers (PERRCs). Please visit http://www.cdc.gov/phpr/science/erp_PERRCs.htm for more information.

22   Entering a wildcard "*" character in the search retrieves all records in the database that begins with the keyword.

23   Due to end of the year grants management issues, eleven PHSSR grants that were initiated at the end of 2011 were not included in HSRProj at the time the analysis was conducted. However, these grants are included in the table and discussion, and will be available in the HSRProj database in the near term. For more information on these grants, please visit http://www.nnphi.org/program-areas/research-and-evaluation/phssr/grantees.

24   Scutchfield, F.D., J.S. Marks, D.J. Perez, and G.P. Mays. op. cit.

25   Scutchfield, F.D., Lawhorn, N., Ingram, R., Perez, D.J., Brewer, R., and Bhandari, M. op. cit.

Appendix A

Search Term[22]	Number of Records in HSRProj, with an initial start date of 2003 or later
"public health"	3,335
Initial key terms for PHSSR	
"public health systems"	79
"public health systems research"	53
"public health services and systems research"	2
"public health systems and services research"	4
Total unduplicated count of records based on initial key terms for PHSSR	91[23]
Key terms included in the PHSSR definition	
"public health" and "system*"	1,190
"public health" and "organiz*"	603
"public health" and "financ*"	180
"public health" and "deliver*"	819
"public health" and "servic*"	1,264
Total unduplicated count of records based on the published PHSSR definitions[24]	2,228
University of Kentucky College of Public Health PHSSR search strategy	
"public health" and "assessment*"	625
"public health" and "capacity"	266
"public health" and "infrastructure*"	247
"public health" and "performance*"	314
"public health" and "public health systems"	79
"public health" and "standards"	87
"public health" and "surveillance*"	118
"public health" and "utilization"	373
"public health" and "workforce*"	61
Total unduplicated count of records based on University of Kentucky's PHSSR search terms[25]	1,502
Preparedness Projects	
"public health" and "preparedness"	40
Total unduplicated count of records based on the PHSSR definition, University of Kentucky's PHSSR definition, and preparedness projects	2,501