Employer Demand for Health Services Researchers in the Year 2020

Craig Thornton and Jonathan D. Brown

Objective. To describe factors that will shape future demand for doctoral-trained health services researchers.

Study Design/Data Sources. Commentary based on recent trends in funding for health services research (HSR), the number of federally funded HSR projects listed in HSRProj, national expenditures for health, and interviews with a small number of employers.

Principal Findings. Despite rapid growth in the overall health care sector, inflation-adjusted funding for HSR has declined, implying little or no net growth in demand for people to lead HSR studies. Employers report being able to hire researchers to conduct HSR by drawing on people trained in many disciplines.

Conclusion. Employers have considerable flexibility in hiring individuals to conduct HSR when demand is relatively stable. They may have much more difficulty hiring well-qualified researchers when faced with sharp increases in demand for HSR, such as could be generated by recent economic stimulus legislation.

Key Words. Health services researchers, HSR job market

As national health expenditures (NHE) increase and policy makers investigate ways to control costs, promote quality, and improve health, there is potential for growth in the demand for health services research (HSR) and health services researchers. However, the demand for HSR and the corresponding resources allocated to HSR compete with other federal and state government priorities as well as with health-related funding for clinical and basic science research. Thus, the future demand for health services researchers remains uncertain, along with the relative demand for researchers trained in the field of HSR and those trained in any of the numerous other fields that study health services delivery, financing, and performance.

This uncertainty means that demand for health services researchers from universities, research organizations, government, or private industry in the year 2020 cannot be forecast with precision. Nevertheless, it is useful to describe the factors that may influence the underlying demand for HSR and

speculate how changes in federal priorities and spending for HSR may affect demand for health services researchers. In this paper, we consider the following questions:

1. What factors drive employers' demand for doctoral-level employees who can lead HSR?
2. Who employs doctoral-level health services researchers and who might employ them in the future?
3. What are the recent trends in spending on health and HSR and how might such spending change in the future?
4. How do employers who are trying to hire doctoral-level health services researchers view the market?
5. What can the field do to increase demand for HSR and the researchers who conduct it?

The empirical data needed to answer these questions are extremely limited. As a result, this paper largely offers our observations and commentary as producers of HSR and employers of health services researchers. We have supplemented our observations with data drawn from several sources, each with its own serious limitations. We do not provide a data-driven forecast of the demand of health services researchers but rather offer our perspective on the HSR market and its future based on our experience and supplemented by what limited data are available. We mainly focus on the demand for HSR conducted by universities and research organizations that is intended to serve as an objective guide to our nation's health care policies rather than support for commercial products. Thus, we consider mainly demand for researchers to conduct HSR funded by government agencies and foundations, although we briefly consider demand for health services researchers from the private sector such as disease management firms and insurance companies. Further, we focus on the demand for doctoral-level trained researchers capable of designing and leading HSR. This aspect of the market is particularly important for assessing the future capacity of the field because of the long time required to produce doctoral-level researchers and the relatively small number produced each year. In our commentary, we generally ignore the strong market for master's degree-level staff.

Address correspondence to Jonathan D. Brown, Ph.D., MHS, Mathematica Policy Research Inc., 600 Maryland Ave. SW Suite 550, Washington, DC 20024-2512; e-mail: jbrown@mathematica-mpr.com. Craig Thornton, Ph.D., is with Mathematica Policy Research Inc., Washington, DC.

Our paper complements the study by McGinnis and Moore (2009) that examines the characteristics of the current HSR workforce and the study by Ricketts (2009) that examines the ways in which health services researchers are trained.

WHAT FACTORS DRIVE EMPLOYERS' DEMAND FOR RESEARCHERS WHO CAN CONDUCT HEALTH SERVICES RESEARCH?

The resources that government agencies, foundations, and other organizations allocate to HSR determine the demand for health services researchers. Thus, the key to understanding demand for health services researchers is to determine the level of funding available to support their employment.

Employers' demand for specific types of researchers is far more complex to predict. Employers that produce HSR have historically hired researchers with a variety of backgrounds and training, including training specifically in HSR or in other disciplines such as economics, medicine, demography, psychology, public health, statistics, and sociology (Resneck and Luft 2004; McGinnis and Moore 2009). This reflects the fact that HSR is a field defined more by the issues it studies than by the disciplinary training of its practitioners (Lohr and Steinwachs 2002). Training in HSR offers some important advantages, including a broad multidisciplinary perspective and an understanding of the history and special features of health services. Training in other fields may offer depth with respect to conceptual and theoretical models and the use of specific analytic methods. As in other labor markets, the mix of researchers hired for HSR reflects their relative productivity and wages.

Relative productivity depends on how researchers with different mixes of experience and disciplinary training can be brought together to produce the research demanded by funding agencies. Employers are likely to look for researchers with skills and interests applicable to a wide array of HSR issues. Such researchers give employers the flexibility to assemble interdisciplinary teams and respond to shifting funding opportunities.

The relative wages of researchers depend on the number of researchers trained in each discipline and the demand for each discipline within and outside the field of HSR. Employers are likely to tailor hiring and salary decisions to projected work, the skills and experience of job candidates, and the number of candidates' competing job offers. The actions of individual employers collectively determine the overall wage rates for

researchers so that those in the fields with greatest demand will generate the highest salaries.

Relative wages depend on the ease with which employers can help researchers without formal HSR training conduct HSR. Employers may offer mentoring and on-the-job experience or rely on staff with less formal training to substitute for doctoral-level researchers.

Finally, employer demand reflects the products that the employer supplies in addition to HSR. Universities, for example, value teaching skills in addition to the skills required to conduct HSR. The more important these other products are to an employer, the less the underlying demand for HSR will shape employer demand for researchers.

WHO EMPLOYS HEALTH SERVICES RESEARCHERS?

Resneck and Luft (2004) found that nearly half of health services researchers (as represented by the 2002 membership survey for AcademyHealth) are employed in universities or teaching hospitals. One-third are employed in the private sector or foundations, and 10 percent work for government agencies. McGinnis and Moore (2009) examined more recent AcademyHealth survey data and found that the distribution had not changed substantially 5 years later.

Recognizing that the AcademyHealth membership is likely to overrepresent university-based researchers (because universities may place more emphasis on publication and conference participation facilitated by AcademyHealth), we examined the distribution of HSR projects among employer types using HSRProj, a publicly available database of ongoing and recently completed HSR that was developed and is maintained by AcademyHealth and the Cecil G. Sheps Center for Health Services Research at the University of North Carolina with funding from the National Library of Medicine (<http://www.nlm.nih.gov/hsrproj/>).

We examined the 6,179 projects listed in HSRProj that were initiated from 2000 to 2005. We excluded projects funded by pharmaceutical companies ($N = 25$), insurance companies ($N = 39$), and health departments ($N = 90$) because these funding sources are not well represented in HSRProj. The result was a final sample of 6,025 projects, which are likely to overrepresent projects conducted with federal funding.

The 6,025 projects were conducted by 2,947 organizations. We categorized the organizations as academic institutions (including academic-affiliated health systems and teaching hospitals), nonacademic health systems, research

organizations (e.g., Mathematica Policy Research; RAND Corporation; and RTI International), federal government agencies, departments of health or social services, professional and trade organizations (e.g., American Medical Association), and foundations.

Consistent with the findings from the AcademyHealth membership surveys, we found that academic institutions conducted 54 percent of the projects listed in HSRProj, nonacademic health systems conducted 17 percent, and research organizations conducted 17 percent. Professional and trade organizations, departments of health and social services, and federal agencies together conducted the remaining 12 percent.

The number of organizations that conducted HSR grew substantially from 2000 to 2005. In 2000, 523 organizations initiated a project recorded in HSRProj. The number increased to 677 in 2001, 743 in 2002, 738 in 2003, 798 in 2004, and 709 in 2005. From 2000 to 2005, the number of academic institutions with a project listed in HSRProj increased by 64 percent, from 249 to 409 institutions. In sum, academic institutions conducted more than half of the HSR projects in that period and accounted for much of the growth in the number of organizations that conducted HSR. We should note that HSRProj likely overrepresents HSR projects conducted by academic institutions.

Government agencies funded 66 percent of projects in our extract of HSRProj: 47 percent funded by the National Institutes of Health (NIH) and other federal agencies and 19 percent funded by the Agency for Healthcare Research and Quality (AHRQ). Foundations funded 34 percent of projects. From 2000 to 2005, the number of projects funded by NIH and foundations increased steadily while the number of projects funded by AHRQ and other federal agencies decreased. However, HSRProj is likely to under-represent HSR funded by state and local governments, insurance and pharmaceutical companies, and the private firms.

WHAT ARE THE RECENT TRENDS IN SPENDING ON HEALTH AND HSR?

Trends in funding for HSR will largely determine future demand for health services researchers. From 2000 to 2006, spending on health in the United States increased by 32 percent to over U.S.\$2.1 trillion (16 percent of the nation's gross domestic product [GDP]), and the health sector added approximately 1.7 million jobs (Mandel 2006), making it one of the main economic engines of the U.S. economy. At the same time, federal funding for HSR is

estimated to have remained constant at U.S.\$1.5 billion per year (Coalition for Health Services Research 2003, 2004, 2005, 2006, 2007). Inflation from 2000 to 2006 caused the purchasing power of the dollar to fall by 10.7 percent (Wilson and Gabor 2007). Thus, in constant 2002 dollars, federal funding for HSR declined from U.S.\$1.5 billion in 2002 to U.S.\$1.34 billion in 2007, an amount representing approximately 5 percent of the federal government's U.S.\$34 billion health research budget (Coalition for Health Services Research 2007).

It does not appear that foundations are offsetting the decline in inflation-adjusted federal funding for HSR. Although we are unaware of statistics on foundation-funded HSR, total foundation spending on health (which includes direct services and HSR) increased from U.S.\$2.1 billion in 2002 to U.S.\$3.4 billion in 2006 (The Foundation Center 2008a, b, c, d, e). If, like the federal government, foundations dedicate 5 percent of their total health funding to HSR, foundation funding for HSR would have increased from U.S.\$107 million in 2000 to almost U.S.\$171 million in 2006.

Actuaries at the Centers for Medicare and Medicaid Services, Office of the Actuary (2007) project NHE to nearly double from U.S.\$2.1 trillion in 2006 to over U.S.\$4.1 trillion in 2016. The nation now devotes about 16 percent of GDP to the health sector, and that share is projected to rise to 19.6 percent in 2016. The Medicare program alone is projected to grow from 3.1 percent of GDP in 2006 to approximately 4.5 percent in 2020 (Social Security and Medicare Boards of Trustees 2007).

Concern about those growth projections, combined with the recent economic stimulus legislation, the change in administration, and a renewed interest in health care reform, has led to some potentially large short-term increases in HSR funding (Steinbrook 2009). This growth is a substantial departure from recent trends and underscores the difficulty in making long-term projections about HSR funding and the associated demand for researchers. The growth in funding may lead employers to demand either newly trained health services researchers or researchers from other clinical and research disciplines and spur employers' efforts to train people with less formal training to become effective researchers.

HOW DO EMPLOYERS WHO ARE TRYING TO HIRE HEALTH SERVICES RESEARCHERS VIEW THE LABOR MARKET?

To supplement the literature on the HSR workforce (McGinnis and Moore 2009) and gain insight into the current job market for health services

researchers, we reviewed summaries of interviews that AcademyHealth conducted with seven employers of health services researchers in 2005 and 2006 as part of an environmental scan to inventory the perceived needs and expectations of stakeholders in the HSR field (AcademyHealth 2006). The employers represented private industry, health care systems, and foundations.

In May 2007, we also collaborated with AcademyHealth to conduct a brief survey of employers who advertised employment opportunities on the AcademyHealth website during the past year. The survey asked employers about (1) the importance of applicants' training in HSR; (2) the training and experience of applicants; and (3) employers' ability to meet the demand for researchers. While the employers who responded ($N = 47$) represented a mix of academic institutions, government agencies, research organizations, foundations, and health care settings, we recognize that the small sample of respondents is not representative of HSR employers. Information from the survey provides largely qualitative and anecdotal insights into the demand for health services researchers.

Several themes emerged from the two data sources. Employers generally reported that they receive many applications for HSR positions and that they were able to fill positions within 6 months. Most employers reported that formal training and experience in HSR are equally important but that they were willing to hire researchers who did not have formal training in HSR or who came from other disciplines as long as applicants had relevant experience. Such substitutability is consistent with employers' reports on our survey that they hired researchers from a wide range of disciplines.

Employers identified several skills essential for producing effective HSR. Many of these skills would be desirable among applied researchers in many fields:

1. Writing for diverse audiences, including funding agencies and policy makers
2. Communicating complex information for lay audiences
3. Quantitative analysis, particularly the ability to conduct cost-benefit and cost-effectiveness analyses
4. Broad knowledge of the health care system

An AHRQ (2007) sponsored conference that focused on the development of HSR core competencies identified similar skills: analytic thinking, methods, knowledge of health care institutions and markets, knowledge of health outcome measures, writing skills, ability to work in an interdisciplinary team, and diversity of cultural perspectives.

Despite their general ability to meet demand for health services researchers, employers reported some challenges related to hiring doctoral-level applicants. Some of these challenges may apply to doctoral-level applicants in other disciplines. In particular, employers in our small sample reported the following limitations with the overall pool of candidates they screened:

1. Inability to understand health problems in the broad context of health policy and the health care system
2. Inability to write and communicate effectively for policy makers and funding sources; inability to translate scientific findings for nonscientific audiences
3. Lack of project management skills and experience working on teams
4. Lack of applicants with multidisciplinary training
5. Lack of training for applied environments
6. Shortage of racial and ethnic minority applicants, particularly African American and Latino applicants

FORECASTING EMPLOYER DEMAND FOR HEALTH SERVICES RESEARCHERS IN 2020

The continued growth of the health sector presents the field of HSR with a potential opportunity to increase its value to policy makers and the public. During the next decade, HSR could add substantial value to the nation's health care policy development and implementation efforts by investigating comparative effectiveness, analyzing quality-promotion and cost-containment strategies, supporting consumer choice, responding to changes in health care resulting from the aging of the population and immigration, and designing and evaluating health insurance coverage expansions. Many of these issues have already received new funding as part of the recent economic stimulus legislation.

But as we have seen in the past 5 years, that HSR produces value for decision makers does not mean that there will be increased federal or foundation funding for HSR. Particularly with respect to federal funding allocations, future funding for HSR, and the corresponding demand for researchers will be shaped by the value inherent in the research and the perceived relative value of other social demands, such as solvency of the Social Security and Medicare trust funds, continuing military efforts, the federal budget deficit, banking stabilization, homeland security, and other government goals.

Thus, projections about future demand for health services researchers must account for how the competing demands for government and foundation resources will play out in the political and social arena. Such projections cannot be made accurately with the data now available, but we can offer some suggestions about likely changes in the types of employers that hire health services researchers and how to strengthen demand for them.

The demand for health services researchers will vary with employer and with each employer's focus on a particular segment of HSR. Universities, research firms, and government have somewhat different objectives and may look for different types of researchers. Universities are likely to continue to demand health services researchers who teach at all levels, although that demand may be tempered if universities expect faculty to cover a large proportion of their salary with HSR funding. The demand for researchers from nonacademic employers is also likely to grow. We have recently seen health plans add substantial capacity to conduct HSR (Goldstein 2007). We expect that people who can analyze the effectiveness of health service systems will be in demand from disease management firms; investment firms with a large stake in the health care sector; state and local government, particularly as Medicaid managed care continues to require states to switch from paying claims to managing care; hospitals and providers implementing quality reporting systems and pay-for-performance systems; and lobbying firms that want to shape health care policy and payments. Potential growth within the private sector may provide strong competition for individuals who conduct HSR and create opportunities for researchers to move between conducting privately funded HSR and HSR for foundations and government agencies that may be more policy oriented. Many prospective employees may not be doctoral-trained health services researchers but rather master's-level professionals or products of other disciplines.

Growing demand for HSR may arise as more foundations are established from the conversion of nonprofit insurers and providers to for-profit status. The endowments of these foundations have grown dramatically in the past few years and now contain billions of dollars. As they work out their missions and funding priorities, they will likely fund some HSR.

It appears that one way that the field of HSR could encourage continued growth and attract researchers is to ensure that the field produces the most value possible. Value is likely to reflect the extent to which research addresses questions of interest to policy makers. We may already be seeing a move in this direction as HSR funding sources allocate more of their funding to contracts targeted to specific questions rather than to more general field-initiated

research grants (Coalition for Health Services Research 2008). Further, producing high-value research means that research efforts must be sufficiently rigorous to support decision making. Research that is methodologically suspect or that cannot be generalized to policy-relevant populations is likely to have less value to decision makers interested in forging new programs or policies. Finally, high-value research will pay attention to the costs of service options and the financial implications of new policy initiatives. An intervention that changes the behavior of health care providers and consumers is of little value unless it is accompanied by information on costs.

Recent legislative developments (as well as proposed initiatives) have added substantial new funding for HSR, at least for the short term. Whether employers will be able to respond to these or other initiatives that increase demand for HSR and find qualified researchers to meet demand in 2020 will depend to a large degree on the pace of funding shifts.

The overall HSR market has many features that should contribute to its smooth functioning as long as any increase in demand for HSR is gradual. Hundreds of universities and many private organizations compete for HSR funding and researchers. There is a growing number of researchers being trained in new HSR university programs (Ricketts 2009). In addition, employers can hire staff trained in other fields to conduct HSR. Thus, we would expect employers to be able to hire researchers and form research teams to meet gradual increases in the demand for HSR. In contrast, rapid spikes in demand for HSR may challenge employers to hire qualified researchers. The supply of well-trained, experienced health services researchers is relatively fixed in the short term. Rapid increases in demand for HSR may force employers to hire researchers with less specific training or less experience. It generally takes 4 years for a university program to produce doctorate-level health services researchers, and it can take a year or more for a researcher from another field to gain enough experience and training to conduct HSR, given that strong HSR requires a detailed understanding of the institutions and market features that characterize health care delivery and financing. As long as funding is available, we expect employers to find ways to conduct HSR even if well-qualified researchers are hard to find. But, in that circumstance, we would expect to see an increase in the wages paid to the most talented researchers, a general inflow of researchers from other fields, and increased efforts by employers to train researchers from other disciplines to conduct effective HSR. There is also the possibility of a decline in the average quality of work if the new researchers cannot be fully integrated in the field quickly.

Employers are likely to meet the demand for HSR by relying on researchers who are flexible and able to respond to a wide array of issues as interest in one policy and program changes. Employers are therefore likely to continue to hire researchers with training in a diverse mix of disciplines and to form teams designed to address certain research questions. Employees formally trained as health services researchers are likely to be in a particularly strong position to lead these teams. While employers may prefer to staff their teams with experts in a given policy area, they will also require team leaders who are familiar with the methods and language of many fields. Thus, multidisciplinary health services researchers with strong leadership skills may find themselves in high demand.

ACKNOWLEDGMENTS

Joint Acknowledgment/Disclosure Statement: This manuscript was supported by a contract between AcademyHealth and Mathematica Policy Research Inc. The opinions presented do not necessarily reflect those of AcademyHealth. We thank Henry Ireys, Marsha Gold, and three anonymous reviewers for providing feedback on drafts of this manuscript. An earlier version of this manuscript was published on the AcademyHealth website. Parts of this manuscript were presented at the AcademyHealth Health Services Research Workforce Summit, Washington, DC, November 2007.

Disclosures: The authors have no conflicts of interests associated with the publication of this manuscript.

Disclaimer: None.

REFERENCES

- AcademyHealth. 2006. *Strengthening the Field of Health Services Research: A Needs Assessment of Key Producers and Users*. Washington, DC: AcademyHealth.
- AHRQ. 2007. "Health Services Research Core Competencies: Final Report for Conference Grant R13 HS016070-01" [accessed on June 30, 2008]. Available at <http://www.ahrq.gov/fund/training/hsrcomp.htm>
- Centers for Medicare & Medicaid Services, Office of the Actuary. 2007. *National Health Expenditure Projections, 2006–2016*. Baltimore, MD: Centers for Medicare and Medicaid Services.
- Coalition for Health Services Research. 2003. *Federal Funding for Health Services Research*. Washington, DC: Coalition for Health Services Research.
- Coalition for Health Services Research. 2004. *Federal Funding for Health Services Research*. Washington, DC: Coalition for Health Services Research.

- Coalition for Health Services Research. 2005. *Federal Funding for Health Services Research*. Washington, DC: Coalition for Health Services Research.
- Coalition for Health Services Research. 2006. *Federal Funding for Health Services Research*. Washington, DC: Coalition for Health Services Research.
- Coalition for Health Services Research. 2007. *Federal Funding for Health Services Research*. Washington, DC: Coalition for Health Services Research.
- Coalition for Health Services Research. 2008. *Federal Funding for Health Services Research*. Washington, DC: Coalition for Health Services Research.
- The Foundation Center. 2008a. "Top 50 U.S. Foundations Awarding Grants for Health, Circa 2002" [accessed on June 25, 2008]. Available at http://foundationcenter.org/findfunders/statistics/pdf/04_fund_sub/2002/50_found_sub/f_sub_e_02.pdf
- The Foundation Center. 2008b. "Top 50 U.S. Foundations Awarding Grants for Health, Circa 2003" [accessed on June 25, 2008]. Available at http://foundationcenter.org/findfunders/statistics/pdf/04_fund_sub/2003/50_found_sub/f_sub_e_03.pdf
- The Foundation Center. 2008c. "Top 50 U.S. Foundations Awarding Grants for Health, Circa 2004" [accessed on June 25, 2008]. Available at http://foundationcenter.org/findfunders/statistics/pdf/04_fund_sub/2004/50_found_sub/f_sub_e_04.pdf
- The Foundation Center. 2008d. "Top 50 U.S. Foundations Awarding Grants for Health, Circa 2005" [accessed on June 25, 2008]. Available at http://foundationcenter.org/findfunders/statistics/pdf/04_fund_sub/2005/50_found_sub/f_sub_e_05.pdf
- The Foundation Center. 2008e. "Top 50 U.S. Foundations Awarding Grants for Health, Circa 2006" [accessed on June 25, 2008]. Available at http://foundationcenter.org/findfunders/statistics/pdf/04_fund_sub/2006/50_found_sub/f_sub_e_06.pdf
- Goldstein, A. 2007. "UnitedHealth Profit Rises on Government Medical Plans (Update 7)" [accessed on July 27, 2007]. Available at <http://www.bloomberg.com/apps/news?pid=20601087&sid=avOG0v4eR7p8&refer=home>
- Lohr, K., and D. Steinwachs. 2002. "Health Services Research: An Evolving Definition of the Field." *Health Services Research* 37 (1): 7–9.
- Mandel, M. 2006. "What's Really Propping Up the Economy?" *Business Week* 4002: 54–62.
- McGinnis, S. L., and J. Moore. 2009. "The Health Services Research Workforce: Current Stock." *Health Services Research*, DOI: 10.1111/j.1475-6773.2009.01027.x
- Resneck, J., and H. Luft. 2004. "How Health Policy and Health Services Researchers Are Compensated: Analysis of a Nationwide Salary Survey." *Medical Care Research and Review* 61 (3): 392–408.
- Ricketts, T. 2009. "Preparing the Health Services Research Workforce." *Health Services Research*, DOI: 10.1111/j.1475-6773.2009.01025.x
- Social Security and Medicare Boards of Trustees. 2007. "A Summary of the 2007 Annual Reports" [accessed on July 27, 2007]. Available at <http://www.ssa.gov/OACT/TRSUM/trsummary.html>

- Steinbrook, R. 2009. "Health Care and the American Recovery and Reinvestment Act." *The New England Journal of Medicine* 360 (11): 1057–60.
- Wilson, T., and M. Gabor. (eds.). 2007. "CPI Detailed Report Data for June 2007" [accessed on July 25, 2007]. Available at <http://www.bls.gov/cpi/cpid0706.pdf>

SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix SA1: Author Matrix.

Please note: Wiley-Blackwell is not responsible for the content or functionality of any supporting materials supplied by the authors. Any queries (other than missing material) should be directed to the corresponding author for the article.