Emerging Subspecialties in Neurology: Health services research

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This time, there is no debate about *whether* all Americans should have quality, affordable health care: the only question is, *how*?

—President Barack Obama, Washington, DC, 2009

At one end of the research spectrum, biomedical research asks, “What causes disease and how can it be prevented or treated under ideal circumstances?” The findings from biomedical research lead a health services researcher at the other end of the spectrum to ask, “What works and what does it cost in real-world settings?”¹ Within neurology, advances in basic science and clinical and translational research have led to newer, more effective therapies and state-of-the-art diagnostic tools for neurologic conditions. As a result, neurologists now face an emerging set of questions about how to implement the following advances:

- How can we structure our health care systems to deliver the highest quality neurologic care in a cost-efficient manner?
- How do we improve equitable access to the advances in neurologic care and thereby reduce health disparities?
- Which innovations will improve health outcomes for neurologic disorders?

Health services research (HSR) seeks out evidence-based answers to these and related questions about clinical and cost effectiveness, health outcomes, quality of care, and health care delivery.² For example, HSR analyzes the best evidence through systematic reviews, practice guidelines, and clinical prediction rules. In addition, HSR evaluates the effectiveness and quality of health care at the patient, community/population, and health systems levels. With health care reform imminent, evidence from HSR, such as comparative effectiveness analysis, is vital to inform health policy makers and community leaders who make decisions about the organization and financing of health care. Although several leaders in neurology recognize the need to train more health services researchers, currently there are few neurologists trained in HSR.³ Ultimately, our inaction in this field will allow others to shape the debates that

critically affect neurologists’ clinical practice, reimbursement, and importantly, the health of our patients.

In the following sections, we discuss the history of HSR, training opportunities, and career options for neurologists.

HISTORY HSR can trace its roots to the mid 1800s when physicians, hospitals, and states began collecting information on mortality, morbidity, and disability. Over the next 100 years, HSR has evolved in its definition, expanded its role in health care, and formalized into an independent arm of research.

The development of national organizations, health journals, and government agencies related to health services has further solidified its importance. In 1936, the Robert Wood Johnson Foundation was created to improve the health and health care of all Americans, and has continued to be a major supporter of HSR. In the 1960s, journals such as *Medical Care* and *Health Services Research* were founded and began to publish HSR-focused scientific articles. Then, in the 1970s, the Veteran’s Administration (VA) established a Health Services Research and Development (HSR&D) program office for research and Congress established the National Center for Health Services Research, now the Agency for Healthcare Research and Quality (AHRQ). In addition to the VA’s HSR&D and AHRQ, several institutes through the NIH including the National Institute on Aging, National Institute of Mental Health, National Cancer Institute, and National Heart, Lung and Blood Institute are government sponsors for HSR. In 1994, the Institute of Medicine published a report on the importance of training and funding for HSR.⁴ Finally, 2 premier organizations representing health policy and health services research were founded in the late 1970s and early 1980s. In this century, they have merged to form AcademyHealth, the leading professional society and resource for health services researchers.

Table Health services research fellowship/training opportunities^a

Name	Description	Sites	Mentor	When to apply	Duration	Link for more information
AAN Practice Research Training Fellowship	Mentored research fellowship for AAN members that incorporates individualized research and training plan	Any institution	Need to identify prior to application	Apply in October; fellowship start date July	2 y	www.aan.com/go/foundation/research
RWJF Clinical Scholars Program	Research fellowship with particular focus on health policy, leadership, and community-based participatory research; training includes graduate-level research degree and structured mentor program	UCLA, University of Michigan, University of Pennsylvania, Yale	Identify once fellowship starts	Apply in winter; interview in spring; fellowship start date 1 year after interviews and notification following July	2–3 y	http://rwjfsp.unc.edu
VA HSR Fellowships	Postresidency fellowships offered at various VA sites throughout the country; each site has a different HSR emphasis; all fellowships offer a period of protected time to develop a research program with associated mentorship and coursework	Boston, MA; Durham, NC; Gainesville, FL; Hines, IL; Houston, TX; Indianapolis, IN; Minneapolis, MN; Palo Alto, CA; Los Angeles, CA; Seattle, WA	Identify once fellowship starts	Application timeline is site-dependent	2–3 y	http://www.hsrd.research.va.gov/for_researchers/resources/training.cfm
National Research Service Awards	NIH-funded individual research fellowships; develop individualized research and training plan in HSR with mentor	Any institution	Need to identify prior to application	Apply in April, August, or December; earliest fellowship start date 9 months after submission	2 y	http://grants.nih.gov/training/nrsa.htm
AHA Outcomes Research Center Postdoctoral Fellowship	Advanced research training for individuals in cardiovascular or stroke outcomes research	Duke; Mid-America Heart Institute, Kansas, MO; Stanford-Kaiser Permanente; UCLA	Identify once fellowship starts	Apply in January or earlier; fellowship start date in July	2 y	http://www.americanheart.org/presenter.jhtml?identifier=3064953
Master's program in Public Health or Clinical Epidemiology	Formal degree programs in public health and clinical epidemiology offer advanced research training that can be tailored to meet the need of a health services researcher	Any institution with public health, health sciences, health policy or clinical epidemiology program	Identify once training starts	Application timeline is site-dependent	2 y	Institution-specific
Palatucci Advocacy Leadership Forum	4-day workshop sponsored by AAN to improve advocacy skills and understand legislative process and health policy	Varies per year	Will be assigned	Apply in September; workshop is in January	4 d	http://www.aan.com/go/advocacy/active/palf

Abbreviations: AAN = American Academy of Neurology; AHA = American Heart Association; HSR = health services research; NIH = National Institutes of Health; RWJF = Robert Wood Johnson Foundation; UCLA = University of California, Los Angeles.

^aLike other research training programs, trainees and junior investigators in HSR are eligible for the NIH loan repayment program (www.lrp.nih.gov).

While HSR in neurology has been limited, the field is growing. For instance, since the introduction of American Academy of Neurology practice parameters 20 years ago, there have been over 90 published clinical guidelines from nearly every subspecialty of neurology. Similarly, a Medline search using the keywords “health services” or “health policy” and “neurology” performed by the authors revealed that the number of published articles related to health services in neurology has increased sevenfold over the last 20 years.

Opportunities for training and fellowships in HSR have grown as well (table). Given the multidisciplinary nature of HSR, it is essential that programs provide training and faculty mentors from a wide range of disciplines such as epidemiology, statistics, economics, anthropology, health policy, and psychology.

WHY CHOOSE A CAREER IN HEALTH SERVICES RESEARCH IN NEUROLOGY?

HSR is a versatile field with tangible impact at the community level. HSR methods can be applied to any subspecialty within neurology. Some examples include a comparison of the costs of surgery vs medical management of epilepsy⁵ and the development of quality of care indicators in Parkinson disease.⁶ Evidence from HSR has led to changes in practice such as the development of primary stroke centers to improve quality of care.⁷

In addition, HSR questions often entail collaboration across disciplines such as emergency medicine, intensive care, primary care, geriatrics, and global health. For example, one innovative program integrates services from primary care, geriatrics, community-based agencies, and neurologists to develop a dementia disease management intervention.⁸ Other global health initiatives in countries such as China and Zambia develop and evaluate community-based approaches to epilepsy care in regions with few neurologists.^{9,10}

Moreover, health services researchers can pursue careers in many settings, including academia, professional organizations, health policy groups, clinical settings, hospital administration, for-profit companies, and international, federal, state, and local agencies. Currently, neurologists trained in HSR are employed as professors in top neurology programs, conduct clinical trials for pharmaceutical companies or for nongovernmental or-

ganizations such as the Gates Foundation, and serve as policy makers through government agencies.

Finally, opportunities to get involved in HSR are growing rapidly. Health services researchers in neurology have a vital role to play in addressing emerging national issues such as health care reform, patient safety, quality initiatives such as pay for performance, and the changing role of health information technology. Ultimately, it is both challenging and rewarding to spend a career improving the health of not only individuals, but also communities.

DISCLOSURE

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