Training Programs in Outcomes Research: The "Field Guide" for Current Opportunities

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Training Programs in Outcomes Research
The “Field Guide” for Current Opportunities

Mikhail Kosiborod, MD

Outcomes research is a rapidly evolving field that focuses on the ultimate end-result of health care (patient outcomes). At its core, outcomes research seeks to identify potential deficiencies in the systems of care, and then develop and implement solutions to these problems with the purpose of improving patient outcomes.1,2 Because of its emphasis on patient care, the field of outcomes research is intended for clinicians and other clinically-oriented researchers with keen ability to ask and answer critically important questions that have direct clinical implications. At its best, outcomes research is a multidisciplinary team endeavor. The clinician scientist is a key team member, and it is the training of these investigators that is addressed in this brief overview. Although superb clinical training forms the initial foundation for a future career in outcomes research, the transition from a clinician to an outcomes researcher requires the commitment to acquire the necessary skills, just like in other research fields. Because of its interface with numerous other disciplines (biostatistics, epidemiology, health services research, health economics, behavioral sciences, and health policy), this training is best obtained in a comprehensive program dedicated to the field of outcomes research. The purpose of this review is to briefly outline currently available programs that provide the necessary training in outcomes research.

Current Training Opportunities in Outcomes Research

Two critical components of training form the foundation and can help secure a productive career in outcomes research: the commitment to dedicate sufficient time and effort to training, and a training environment that provides the necessary skill set for success. Many successful investigators acquire components of their training through the resources and expertise at their local institutions, using well-established traditional channels such as career development awards (administered by the National Institutes of Health, not-for-profit foundations, and others). However, several structured formal programs have been established, which are designed for physician scientists and emphasize training in outcomes research.

This review will specifically focus on such programs. It is not intended to be comprehensive, as other training opportunities may exist, and new programs are being constantly created. Instead, its purpose is to provide practical advice on the most relevant training opportunities for US-based clinicians that are interested in pursuing a career in outcomes research.

When choosing a program, it is important to consider the critical components of comprehensive outcomes research training: a formal curriculum that includes the study of essential disciplines such as biostatistics, clinical research methodology, epidemiology, health policy, and clinical decision making; the opportunity to obtain a Master’s degree; sufficient protected time; data resources; and infrastructural support to pursue independent research projects. Moreover, a formal mentorship plan, regular meetings with peers and faculty to discuss the research in progress and receive constructive feedback, an institutional commitment to the field of outcomes research, and a track record of successful trainees are all essential components to a successful training experience.

The list below, although not exhaustive, highlights some of the programs that provide comprehensive training in outcomes research:

- American Heart Association (AHA) Postgraduate Fellowship in Outcomes Research
- Robert Wood Johnson Clinical Scholars Program
- Veterans Administration (VA) National Quality Scholars (NQSF) and Health Services Research and Delivery (HSR&D) Advanced Fellowship Programs
- National Heart, Lung, and Blood Institute–Funded T32 in Quality of Care and Outcomes Research for Cardiovascular Disease and Stroke in association with the Master of Science in Clinical and Population Translational Sciences at Wake Forest University
- Agency for Healthcare Research and Quality (AHRQ) Institutional Health Services Research Training Programs (T32s)

These programs and their Web addresses are listed in the Table and described in more detail below.

AHA Postdoctoral Fellowship in Outcomes Research

The 4 AHA Outcomes Research Centers (Duke University, Mid America Heart Institute, Stanford University–Kaiser Permanente, and University of California, Los Angeles) are currently recruiting applicants for 2-year postdoctoral fellowships in outcomes research. One of the unique features of this fellowship program is its focus in cardiovascular disease and stroke. Although the program is not restricted to any partic-
The Robert Wood Johnson Clinical Scholars Program (RWJCSP) is perhaps the oldest and best-known training program in clinical and outcomes research, and has a superb track record of producing healthcare leaders. Through its history, which spans more than 3 decades, RWJCSP alumni have made major contributions toward improving health care delivery and outcomes of patients in the United States through their work in academic medicine, public health, and health policy.

The RWJCSP offers a 2-year master's degree graduate-level study and research with at least 80% protected time. RWJCSP strives to recruit candidates across multiple medical and surgical subspecialties, but is restricted to physicians who have or are in the process of completing their clinical residency training. It is currently offered at 4 universities: the University of Michigan; the University of Pennsylvania; and Yale University. Although there are individual differences between the 4 programs, each with its unique strengths, the RWJCSP curriculum is very well-structured. The key components of the curriculum typically include biostatistics, methods of clinical and health services research, health management and policy, ethics, health economics, as well as leadership and community-based participatory research. This curriculum is supplemented by regular research-in-progress meetings, where the scholars get to present their ongoing projects and receive suggestions and constructive feedback from faculty as well as peers, and hone their methodological and presentation skills. In addition, the RWJCSP allows ample time for mentored and independent research projects and includes a very well-developed mentorship program.

The general information about the RWJCSP can be found on the national office’s website (Table) which also has links to the individual websites of the four RWJCSP programs. The details about each of the 4 programs, information on how to apply, and contact information can be found on the individual programs’ websites.

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### VA NQSF and HSR&D Advanced Fellowship Programs

The VA offers several advanced fellowship programs, 2 of which (NQSF and HSR&D) provide extensive training in clinical and outcomes research. The focus of the NQSF program (coordinated by the Dartmouth Institute for health research with the other centers. Accordingly, multidisciplinary mentorship is emphasized at each of the centers, and opportunities for cross-center training will be available through a collaborative network between the 4 centers.

Importantly, the AHA Outcomes Fellowship Program is a limited-time opportunity. The program is currently scheduled to recruit 2 classes of fellows: the first one started in July 2009 (graduation in 2011); recruitment for the last class (graduation in 2012) is currently in progress. The application deadline for the July 2010 start date is January 30, 2010.

Applicants must have an MD, PhD, DO, or equivalent degree and be in their final year of residency training. It is currently offered at 4 universities: the University of California, Los Angeles; the University of Michigan; the University of Pennsylvania; and Yale University. Although there are individual differences between the 4 programs, each with its unique strengths, the RWJCSP curriculum is very well-structured. The key components of the curriculum typically include biostatistics, methods of clinical and health services research, health management and policy, ethics, health economics, as well as leadership and community-based participatory research. This curriculum is supplemented by regular research-in-progress meetings, where the scholars get to present their ongoing projects and receive suggestions and constructive feedback from faculty as well as peers, and hone their methodological and presentation skills. In addition, the RWJCSP allows ample time for mentored and independent research projects and includes a very well-developed mentorship program.

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### Table. List of Selected Training Programs in Outcomes Research

<table>
<thead>
<tr>
<th>Program</th>
<th>Sponsoring Organization</th>
<th>Participating Institutions</th>
<th>Web Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Heart Association Postgraduate Fellowship in Outcomes Research</td>
<td>American Heart Association</td>
<td>Duke University, Mid America Heart Institute, Stanford University–Kaiser Permanente, University of California, Los Angeles</td>
<td><a href="http://www.americanheart.org/presenter.jhtml?identifier=3064953">http://www.americanheart.org/presenter.jhtml?identifier=3064953</a></td>
</tr>
<tr>
<td>Robert Wood Johnson Clinical Scholars Program</td>
<td>The Robert Wood Johnson Foundation</td>
<td>University of California, Los Angeles, University of Michigan, University of Pennsylvania, Yale University</td>
<td><a href="http://rwjcsp.unc.edu/">http://rwjcsp.unc.edu/</a></td>
</tr>
<tr>
<td>National Quality Scholars Fellowship</td>
<td>Veterans Administration</td>
<td>Six participating academic VA medical centers (details on the website)</td>
<td><a href="http://www.va.gov/OAA/SpecialFellows/programs/SF_NQSF_fact.asp">http://www.va.gov/OAA/SpecialFellows/programs/SF_NQSF_fact.asp</a></td>
</tr>
<tr>
<td>Health Services Research and Development</td>
<td>Veterans Administration</td>
<td>Fifteen participating VA academic medical centers (details on the website)</td>
<td><a href="http://www.va.gov/OAA/SpecialFellows/programs/SF_HSRD.asp">http://www.va.gov/OAA/SpecialFellows/programs/SF_HSRD.asp</a></td>
</tr>
<tr>
<td>Postdoctoral Training in Quality of Care and Outcomes Research for Cardiovascular Disease and Stroke</td>
<td>National Heart, Lung, and Blood Institute and Wake Forest University</td>
<td>Wake Forest University</td>
<td><a href="http://www.phs.wfubmc.edu/public/edu_cvd.c">http://www.phs.wfubmc.edu/public/edu_cvd.c</a></td>
</tr>
<tr>
<td>AHRQ Institutional Health Services Research Training Programs (T32s)</td>
<td>Agency for Healthcare Research and Quality</td>
<td>Twenty-eight participating academic institutions (details on the website)</td>
<td><a href="http://www.ahrq.gov/fund/training/T32.htm">http://www.ahrq.gov/fund/training/T32.htm</a></td>
</tr>
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policy and clinical practice) is health care quality improvement, whereas the focus of the HSR&D program is more on the methodology of the health services research. Both programs are offered through VA Medical Centers with excellent health services research infrastructure and provide opportunities for fellows to pursue advanced studies, including coursework in biostatistics, epidemiology, health policy, clinical decision-making, and clinical and health services research methodology through the affiliated universities. The NQSF also provides a structured curriculum in quality improvement and organizational change methods that is delivered via biweekly interactive videoconferences. Both programs allow for 75% to 80% protected time to pursue mentored research projects with faculty at the sponsoring VA medical center and the affiliated universities and to participate in the research-in-progress seminars. Both advanced fellowship programs seek candidates across medical and surgical subspecialties, require a 2-year commitment, and are designed for physicians who will have completed their residency training at the time of matriculation. The NQSF program is currently available at 6 academically-affiliated VA medical centers, whereas HSR&D fellowship is available at 15 academically-affiliated VA centers. More details, including the list of the participating centers, and contact information for the individual programs are available at the NQSF and HSR&D websites (Table).

National Heart, Lung, and Blood Institute–Funded T32 in Quality of Care and Outcomes Research for Cardiovascular Disease and Stroke in Association With the Master of Science in Clinical and Population Translational Sciences at Wake Forest University

The focus of the T32-funded training program is to train clinician scientists interested in careers in quality of care and outcomes research related to cardiovascular disease and stroke. The program has a 2-year requirement and is designed for physicians who have completed clinical training in family medicine, internal medicine, cardiology, pediatrics, neurology, or emergency medicine. Fellows acquire research skills through completion of the requirements of the Master of Science in Clinical and Population Translational Sciences, with the mentoring of faculty with appropriate expertise in a “basic” science of outcomes research and the fellow’s clinical area of interest. Fellows also develop practical quality-improvement expertise through a quality-improvement practicum in which fellows join ongoing quality-improvement projects in the medical center. Ongoing clinical activity is also arranged at no more than 20% effort to maintain clinical skills. The MS program in Clinical and Population Translational Sciences focuses on development of competencies in epidemiology, behavioral science, biostatistics, clinical and health services research, responsible conduct of research, scientific communication, and translation of the best evidence-based care into the everyday healthcare practice. Fellows participate in mentored and independent research. Additional information about the program requirements, contacts for the program office, and on how to obtain the application materials is located on the program’s website (Table).

AHRQ Institutional Health Services Research Training Programs

The Agency for Healthcare Research and Quality (AHRQ) provides support to 28 US academic institutions through the National Research Service Award grant program, which offers advanced training to those with a strong interest in health services research careers. All programs combine a structured curriculum with topical and career development seminars, mentoring, and hands-on research experience. However, the specific content emphasis of each program, as well as curriculum requirements, educational approaches, and length of support may vary by institution. Most programs are open to both pre- and postdoctoral students. Further information, including contacts for each of the programs, can be found on the AHRQ website (Table).

Conclusion

Because of its focus on patient-centeredness, immediate clinical relevance, and emphasis on both quality and cost of care, the field of outcomes research is uniquely positioned to address the mounting challenges facing our health care system. This is particularly relevant in cardiovascular disease, which remains the leading cause of death and healthcare costs in the United States. Because of its rapid growth, the field of outcomes research needs a new cadre of well-trained clinician-scientists. Several existing programs offer superb training in outcomes research and provide a solid foundation for future productive careers in this field.

Disclosures

Dr Kosiborod is the training program director for the AHA Postdoctoral Fellowship in Outcomes Research at the Mid America Heart Institute in Kansas City, Mo and is an alumnus of the Robert Wood Johnson Clinical Scholars Program. He has previously served on the advisory board for Sanofi-Aventis and received honoraria from the Vascular Biology Working Group.

References


Key Words: outcome assessment ■ education ■ cardiovascular diseases