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SPECIAL COMMUNICATION

Instilling a Research Culture in an Applied Clinical Setting

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Abstract

This article offers a framework and practical advice to nurture development of a research culture within a clinical setting. Information is presented on research education, infrastructure, and helping clinicians develop a scientific mindset. Economical ways to facilitate a scientist-practitioner approach to clinical practice are described, as well as metrics to gauge the success of these efforts.

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The importance of evidence-based practice is widely accepted in medicine, including the specialty of physical medicine and rehabilitation.[1-4] The idea that clinical practitioners should have a working knowledge and understanding of scientific methods is not new. In fact, the scientist-practitioner model was first promoted in clinical psychology over a half-century ago.[5] The ideals of the scientist-practitioner were first laid out by Thorne,[5] who, in 1947, encouraged clinical psychologists to apply "experimental methods to the analysis of case reports and larger scale analyses to the experience of the whole clinic over a period of years. Thus, the clinician will come to regard each case as part of a larger sample."[5(p160)]

Hayes et al[6] describe 3 primary and interrelated roles for the scientist-practitioner. First, clinicians should be consumers of new research findings who are able to analyze and interpret new research, determine its implications for clinical practice, and translate findings into new or improved assessments or treatments. Second, practitioners should be evaluators of their own interventions, using empirical methods and outcome measures to verify clinical effectiveness. Finally, practitioners should be active researchers, generating new empirical evidence and reporting findings to the clinical and scientific community.

The scientist-practitioner ideal remains elusive for a number of reasons, not least of which is the limited opportunities available for practitioners to develop research competencies. Most clinicians-in-training do not receive formal training in research methods or mentoring in ways to incorporate research activities into clinical practice. Given the time constraints, there are few opportunities for clinicians to learn on-the-job or to incorporate research efforts (eg, ongoing collection of outcome measures) into practice.

Hayes[6] noted several additional challenges to adoption of the scientist-practitioner role in most clinical settings. First, traditional research methods are too complex or too cumbersome for use in a clinical setting. It may not be practical in a clinical setting to use a control group or condition, to establish highly restricted inclusion/exclusion criteria, or to limit treatment to a single, clearly defined and consistently delivered intervention. Further, research can be expensive and time consuming to undertake especially for the novice scientist-practitioner who may have a steep learning curve. Administrators struggle with allocating time at the risk of losing clinical revenue in an effort to foster clinical research activities.

Practitioners must also be concerned with the ethical implications of research, not just the need to follow clear guidelines for conduct of research involving human subjects but also the ethics of withholding effective treatments. As noted by Hayes et al,[6] "the goal of clinical practice is to get patients better as quickly as possible. As a result, the nature, length and intensity of any intervention (must be) tailored to the individual client and his or

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her problem."[6(p19)] This runs contrary to the requirement that the intervention in a clinical trial be highly standardized and typically withheld or at least delayed in order to document baseline conditions without treatment.

Finally, there is no clear relation between research in clinical practice and professional success. Practitioners are compensated based on delivery of services not patient outcomes per se. This may be changing with the move to pay-for-performance reimbursement and, thus, contingencies that support efforts to demonstrate the effectiveness of clinical interventions.

Notwithstanding these challenges, there may be considerable value to the organization in creating a culture that supports and encourages practitioners' participation in research activities. First, providing opportunities to pursue research interests is a great tool for attracting and retaining outstanding clinicians. The best practitioners are those who are constantly seeking to improve their practice, whose clinical decisions are based on evidence, and who scrutinize new clinical innovations to determine their relative merits. Clinical settings are also enhanced by the mentoring of students who are taught to be consumers of research for the guidance of clinical practice. Moreover, development of clinical research competencies offers an alternative career path for clinicians who are not interested in becoming managers or in settings with limited opportunities for career advancement. All stakeholders—patients, clinicians, and setting administrators—benefit from nurturing clinicians' natural inquisitiveness and desire to achieve excellence.

Second, creating a research culture affords clinicians the opportunity to constantly challenge conventional methods and seek ways to improve clinical practice. Empirical evaluation of clinical interventions can determine which treatment components are cost effective to administer and which components can be eliminated as ineffective or impractical. In today's managed care environment there is growing emphasis on accountability for achieving clinical outcomes. Those clinical practitioners and settings best able to develop and demonstrate effective and efficient treatments stand to gain substantially.

Third, building an environment that supports clinical research gives patients access to innovative treatments that may not be available anywhere else. Investment in the necessary infrastructure and nurturance of a culture that values research will pay dividends by making innovative treatments available, whether from investigator-initiated research or sponsored clinical trials. Administratively, this adds value by enhancing the facility's reputation and, thus, generating greater patient admissions and clinical revenue.

This article provides a framework for building a research culture in a clinical setting that is not part of a traditional academic setting (eg, a teaching hospital). Recommendations for cost-effective strategies are drawn from the experiences of the authors, their mentors, and their colleagues. Metrics for gauging the success of efforts to instill a research culture are also suggested.

Recommended strategies

A nurturing research environment must begin with a shared belief among key members of the organization that research is part of the core mission.[7] With adoption of this focus, it is essential that clear roles and expectations, and associated contingencies, be set and carried out. This may be as simple as the understanding that all new staff will be expected to identify and work with a designated mentor to develop a plan for their participation in research, that senior mentors will take the time to guide junior colleagues, and that leadership will provide the necessary means for these interactions to occur, including release time, incentive credit, or financial support. This role discussion is important in establishing expectations, however, it must also be recognized that roles change and evolve.

List of abbreviations:

NIH **National Institutes of Health**
REAP **Research Enhancement Award Program**

Establishing staff expectations

Creating a research culture in a clinical setting begins with establishing staff expectations about their research participation. Optimally, expectations should be set early in the hiring process, be reinforced during the initial orientation period, and be extended throughout the tenure of all members of a department or practice. A consistent message will make clear the point that research participation and productivity are essential components of the position and the practice. The specifics of the type of activity expected, amount of time to be allotted, infrastructure support available (eg, grant writing, biostatistics or research design consultation, institutional review board submission), and compensation linked to productivity should also be explicitly stated. Each of these elements may need to be tailored for each member of the group based on their experience and interests. While the role of research productivity in ascending the career ladder may make it intrinsically appealing to those in academia (promotion and tenure), this is less true in clinical settings. Clinical practice rarely rewards research activity.

Identifying rewards other than financial or those related to advancement is important to building a research culture. The organization should, for example, demonstrate appreciation and value for clinicians who present at national and international meetings, and either publish their own findings, or assist others in publishing theirs. Just as the administrative burden that accompanies training residents or supervising student interns, or the extra time needed to deliver exceptional customer service, participation in research should be seen as a necessary part of the overall clinical mission. Although there may be unique or additional activities that warrant additional support or incentive, a core set of research expectations should extend across all members of a clinical group. While this approach may require extension of the work day or the sacrifice of some level of compensation or profitability, establishing research participation as a core expectation will make it less likely to be seen as an excess burden and more as a key part of the job.

Ideally, both baseline salary dollars and additional incentive dollars or other benefits can be made available to support research excellence. When funds are available to reward research productivity (eg, article publication, dissemination, subject recruitment, recognition awards) and there are no legal barriers preventing it, a well-defined system of crediting clinicians for their research activity is recommended. The most commonly used research productivity systems across physical medicine and rehabilitation departments entail a weighted point system to credit activity. This point system usually includes a variety of elements from grant submission to article publication to seminar presentations. Points may be earned from clinical, educational, research, or administrative activities, and are used to allocate available incentive funds.