

Understanding research principles: Giving our patients the care they deserve

Pharmacists play a pivotal role in the U.S. health care system by providing evidence-based care, generating new knowledge, educating future generations of practitioners, and participating in policy development. In the current edition of *AJHP*, Schumock and Pickard¹ provide a comprehensive discussion of comparative effectiveness research. This review is timely and critical, given President Obama's plan to integrate comparative effectiveness into health care reform. Pharmacists, as medication experts, should play a critical role in the policy discussions that are under way and in the use of comparative effectiveness research in patient care. While pharmacists can bring a tremendous amount of knowledge about medication-use to the table, meaningful participation requires that pharmacists have a strong understanding of the research principles that underlie evidence-based practice, including these comparative effectiveness studies. In a previous editorial in the *Journal*, Winterstein and Vermeulen² referred to pharmacists as "consumers of research." We would argue that pharmacists must be informed consumers who understand fully the research that drives their practice.

We are concerned that not all pharmacists embrace this professional responsibility, as many are willing to relegate it to a subset of advanced practice pharmacists and physicians. If all pharmacists, as a part of their practice, do not embrace interpretation of the evidence, patients will lose. The importance of this issue is heightened as comparative effectiveness research begins to play a more prominent role in decisions about care and as organizations, such as ASHP, begin to envision a futuristic pharmacy practice model.

Let us use efficacy and effectiveness studies to make our point. Schumock and Pickard¹ clearly discern the difference between these two types of studies. They state that "efficacy is a measure of the capacity of a treatment to produce the desired effect . . . in a controlled environment, as in a randomized controlled trial." They define effectiveness as "the actual effect of the treatment in practice." Hébert et al.³ identified 13 domains under which efficacy and effectiveness studies differ. These include the research question, setting, patient selection, study design, baseline assessment, study intervention, cointerventions, compliance, endpoints, analysis, sample size, data management, and study management.

Despite a plethora of available information comparing efficacy and effectiveness studies, many pharmacists appear not to understand the differences and use the terms interchangeably. As reviewers for grant applications, original research articles, and national guidelines, we continue to be impressed by the misuse of these terms by investigators and authors. Pharmacists must understand how these differences affect their interpretation of studies and the translation of research into practice. If pharmacists do not commit to understanding these types of research principles, they will not be adequately prepared to participate in the provision of evidence-based patient care in a reformed healthcare system.

Given the importance that comparative effectiveness studies will have across the health care spectrum—from policy discussions to direct patient care—and the changes that are likely to occur in pharmacy practice models, pharmacy educators have an additional mandate for ensuring that students and residents enter clinical practice, in all settings, with a thorough understanding of the evidence that underlies patient care. Pharmacy practice leaders must foster departmental cultures that prioritize integration of evidence into care, recruit pharmacists who embrace the research basis for safe and effective medication use, and provide opportunities for continuing professional development. Professional organizations, including ASHP, have a responsibility to provide practicing pharmacists with high-level educational opportunities that enable them to continually advance their practice. Most importantly, all pharmacists must embrace their professional responsibility to incorporate a thorough understanding of the evidence into patient care. Otherwise, patients will suffer.

1. Schumock GT, Pickard AS. Comparative effectiveness research: relevance and application to pharmacy. *Am J Health-Syst Pharm.* 2009; 66:e2-10.
2. Winterstein AG, Vermeulen LC. A tool kit for practice-based research. *Am J Health-Syst Pharm.* 2008; 65:1607. Editorial.
3. Hébert PC, Cook DJ, Wells G et al. The design of randomized clinical trials in critically ill patients. *Chest.* 2002; 121:1290-300.

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