

A tool kit for practice-based research

Clinicians must not only be consumers of research but must contribute to the body of evidence supporting the care that they provide to patients. Pharmacists in practice have a particularly important vantage point from which they can identify important research questions and observe whether new evidence generated in isolated, and often quite artificial, research environments truly apply to their patients. Clinicians define the need for evidence relevant to direct patient care. Medical research with pragmatic objectives is valuable and receives increasing attention, and we believe that pharmacists' involvement in this research is particularly important.

In this issue of *AJHP*, we begin a special series, entitled "Research Fundamentals," intended to provide guidance and support to clinicians who are interested in conducting independent research studies. Unique to this series is its practical approach, which takes the perspective of the researcher who needs to make decisions about study design and research methods as opposed to simply consuming or critiquing research articles. The authors we have invited to participate in this series will not present evaluative methods for published research but rather provide criteria that should be considered when research is developed.

So, how to get started? Everything starts with a good research question. While this seems to be commonsense, experienced researchers can attest that a good research question is the most critical component, not only for the perceived value of the study but for its successful design, implementation, and analysis. In this issue, Earlene Lipowski¹ walks us through the various considerations that define good questions and uses practice-based examples to illustrate her points.

Previous research defines the novelty and importance of the research question at hand and presents an opportunity to learn from previous methodological strategies and mistakes. In an upcoming issue of *AJHP*, Kelly Smith will discuss conducting literature searches to support research proposals, introducing a variety of databases and information sources. Even readers intimately familiar with pharmaceutical literature will find this article valuable, as various focus areas are discussed.

Three future articles will address core methodological aspects of research, including design, bias, and measurement.

Dan Touchette and Dan Hartung will provide an overview of study designs common in pharmacy practice-based research, Tobias Gerhard will explain the rather complex bias constructs that threaten the validity of research studies, and Carole Kimberlin will explore measurement issues.

Bob Weber will present a very pragmatic article outlining a stepwise approach for managing research projects, which will be particularly beneficial for those of us who work with residents. Practice-based research often faces challenges related to ill-defined or poorly implemented interventions. Lourdes Planas will discuss a plethora of aspects that should be considered when designing and evaluating patient care interventions.

In two articles on statistical analysis, Jim DeMuth will introduce the rationale for statistical testing, the appropriate way to interpret inferential results, the limitations of statistical testing, and the ideal use of statistician support.

A series about research fundamentals would not be complete if issues like governance, grantsmanship, and study management were not addressed. Wesley Byerly's upcoming article on research ethics and the review process by institutional review boards should assist in preparing for an effective and smooth application process. Beth Devine will offer an overview on grantsmanship in which she discusses many useful small-scale funding options and strategies to become a successfully funded researcher. Finally, Henry Cohen will offer advice on writing and presenting the results of research findings.

We hope *AJHP* readers find this article series helpful and stimulating to embark on new research endeavors.

1. Lipowski EE. Developing great research questions. *Am J Health-Syst Pharm*. 2008; 65:1667-70.

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