

participating sites around the United States and we have just concluded agreements with our first three international sites. We have collected prospective information on more than 4,000 ED intubations, and have conducted preliminary analyses. It is our belief that the use of such a registry will for the first time allow EPs to state with confidence the methods, success rates, adverse event rates, and standards of practice with regard to emergency airway management by EPs. Airway management in the ED is unique and demands its own terminology and performance criteria. Defining such things as intubation time, an intubation *course* vs an *attempt*, and technical problem rates vs true complication (or adverse event) rates has aided significantly in the standardization of the language used with NEAR. Current literature, including all of that cited by Dr. Dronen, consists of relatively small case series, usually reported retrospectively. The National Emergency Airway Registry ongoing project (NEAR 97) is now reporting preliminary findings in approximately 3,000 ED intubations and will be analyzing data further when 5,000 intubations are in the registry. In the future, when another discipline makes a claim that, for example, endotracheal intubation of trauma patients by EPs is an unsafe practice, the EPs will not only possess good data with regard to this issue, they will possess the *only* data.

In closing, we could not help but reflect recently on two congruent events. One day last autumn, we received notification from the Emergency Medicine Foundation that the National Emergency Airway Registry had not been chosen to receive a Center of Excellence Grant. Among several important and constructive observations regarding the appropriateness of such a project for this particular grant, the selection committee cited in particular the lack of a specific hypothesis. While musing about this, we continued through our mail and came upon a celebration announcement of the 50th anniversary of the Framingham Heart Study. This famous study has elucidated much of what is known about the progress of heart disease. We can only speculate about the present

state of our knowledge if the lack of a specific hypothesis had derailed the Framingham Heart Study. We do not mean to compare the National Emergency Airway Registry with the famous Framingham Heart Study. We offer this illustration only to point out that there are many, many different ways to do research. Not all questions are best answered by hypothesis-driven randomized clinical trials, and it is particularly unlikely that great increments in knowledge about ED intubation will be obtained in that way.

The questions to be answered and research benefits from the NEAR database are innumerable. Our goal is to offer the EM community a more cohesive, standardized language to define, perform, and study emergency airway management. To achieve this, we will continue to develop NEAR as a tool to address the challenge Dr. Dronen has made to our specialty with regard to improving airway research.—RON M. WALLS, MD, ERIK D. BARTON, MD, MS, for the investigators of the National Emergency Airway Registry, *Department of Emergency Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA*

Key words. airway; research; National Emergency Airway Registry; rapid-sequence induction; intubation.

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In reply:—One is certainly free to argue, and perhaps correctly, that “there are many, many different ways to do research.” More to the point, however, is whether there are many, many different ways to do high-quality research that advances

our knowledge of diseases and their treatment and promotes the growth of an academic discipline. In my previous editorial I expressed the opinion that emergency medicine (EM) would benefit from a greater emphasis on prospective hypothesis-driven research.¹ I did not mean to suggest that this is the only acceptable research design; in fact, there are a variety of acceptable designs and it is appropriate to choose the one that most efficiently addresses the research objectives of a particular study. It is my impression, however, that there is an overreliance among EM researchers on the relatively easy-to-perform, descriptive design. This is particularly evident in the literature on conscious sedation, anesthesia induction, and intubation.

Descriptive studies have an important role in elucidating the characteristics of a disease, population, or practice, but often they yield preliminary results that are best followed with analytical studies to establish cause-and-effect relationships, and experimental studies to evaluate the effects of specific interventions. As EM and its researchers mature, there is a need for more of the latter types of investigation. I cannot accept the notions expressed by Walls and Barton, that “randomization of critically ill emergency patients is difficult to impossible” or that the knowledge or acceptance of a certain treatment is so widespread that meaningful hypothesis generation is impossible. On the one hand, they are saying that it is impossible to answer questions, and on the other, they are saying that it is impossible to know what to ask. In fact, neither of these extreme opinions is true. Rather, there is a middle ground that recognizes that there are difficult but not insurmountable obstacles to interventional research in the ED, and that the process begins with open-minded inquisitiveness about what we don't know and what we think we do know.

I must also take issue with Walls and Barton's suggestion that hypothesis generation is not a prerequisite to meaningful research. It is true that some studies lack a testable hypothesis, particularly when they are descriptive in design. However, all studies must have, at the very least, objectives that can be

clearly delineated before the research is done. Walls and Barton note that the National Emergency Airway Registry (NEAR) does not have a hypothesis. There is, however, no reason for NEAR to have a hypothesis, because it is a database, not a research study. Databases are generated and their data are used for a number of diverse reasons, which may include the testing of one or more research hypotheses. Research databases may be developed after a hypothesis is known, or an existing database may be used to evaluate a new hypothesis. In either case, hypothesis generation prior to data analysis is a prerequisite to the production of quality research. To suggest that this did not occur in the Framingham Study is to ignore reality. In the very first publication associated with that study, Dawber et al. stated "As a working hypothesis it is assumed that these diseases [arteriosclerotic and hypertensive cardiovascular disease] do not each have a single cause . . . , but that they are the result of multiple causes which work slowly within the individual."² In an attempt to determine those causes, the investigators embarked on an ambitious plan to prospectively collect data on a population of 6,510 patients without cardiovascular disease for at least 20 years.³ They would then make comparisons between those who developed the disease and those who did not. As Walls and Barton point out, this remarkable effort has added immeasurably to our knowledge of the pathogenesis and course of cardiovascular disease. One can only imagine what would have occurred if the designers of this classic study had

been intimidated by the enormous challenge it presented, if they had accepted without critical analysis the prevailing opinions regarding the causes of cardiovascular disease, or if they had elected to collect data without a clear notion of how it was to be used.

Emergency medicine has made great progress in its development as an academic discipline, but continued progress, both clinically and academically, demands thoughtful hypothesis generation and increasingly sophisticated research. On the 50th anniversary of the Framingham Study, we might all benefit by reflecting on the challenges associated with conducting high-quality research in our EDs and the potential

benefits to our patients and our specialty if we can meet this challenge.—STEVE DRONEN, MD, *Section of Emergency Medicine, University of Michigan, Ann Arbor, MI*

Key words. research; hypothesis generation; emergency medicine.

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Practical Uses of Medical Journals

Probably no sensible person outside our peculiar line of work would believe, much less appreciate, this ridiculous tale. I swear it is absolutely true.

This morning while reading Dr. Biro's editorial¹ regarding the various practical uses of a medical journal, my attention was drawn to a spider emerging from under my bare feet. Just last week I had read an article in another useful journal regarding the identification of spiders,² leaving no doubt regarding the unique three-eye array of the little brown critter sharing my space. You may add to your list of practical uses for *AEM* that properly rolled and with careful aim, it may be used

to protect one's home from the incursion of *Loxosceles reclusa*.—KENNETH W. MARX, MD, *Department of Emergency Medicine, Frankford Hospital, Philadelphia, PA*

Key words. spiders; journals; *Academic Emergency Medicine*; *Loxosceles reclusa*.

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