

## Networks and Net Worth: Practice-Based Data Collection in Family Medicine

Richard L. Holloway, PhD

Houston, Texas

As a vehicle for gathering data from practice sites, the research network has established a strong presence in family medicine research. A recent report on otitis media in this journal from the International Primary Care Network (IPCN) and the Ambulatory Sentinel Practice Network (ASPN) serves as the most current published offering.<sup>1</sup> Such networks have provided valuable information to investigators about the sometimes-elusive ambulatory care population, a core interest of family medicine research. The intent of a practice-based data-gathering system is to capture information from patients who are more likely to represent the general population at risk than those from the practices of subspecialists in tertiary care centers, the current source of most medical research. While this goal is laudable, the solution of using practice-based networks is an extremely expensive and quite cumbersome one. Questions about the cost-benefit worth of such networks have been rare: In an effort to support research in family medicine, most of us have accepted the value of networks on faith. That this issue can now be raised may be some small evidence of the growing stability of the family medicine research enterprise.

White and colleagues,<sup>2</sup> in an often-cited paper, proposed that the "ecology" of medical care could change dramatically if research conducted at medical centers were directed at the population at risk rather than at a highly preselected subspecialty patient base. The argument was made that most medical research is based only on the one tenth of 1% of the population that seeks care from a university-based tertiary care subspecialist. Unfortunately, many in family medicine have made an assumption that sampling from university-based family practice populations creates a bias in and of itself. This regrettable

assumption has simultaneously elevated the status of practice-based networks and cast aspersions on university-based studies, with little evidence to support either position.

Primary care patients, regardless of their location, may well serve the sampling needs of family medicine research. While practice-based networks have acquired an image of general sampling, they are subject to the same kinds of limitations that would be present if the research were conducted on a university-based residency population or any other ambulatory population. However, sampling at any of the latter locations can be conducted at a fraction of the cost of a large network, since the costs of managing a network are often proportional to both the geographic area covered and the number of sampling sites.

A recent editorial by Culpepper<sup>3</sup> reveals the anti-university sentiment underlying some of the beliefs about practice-based networks. He states, "... we also must support practice-based *non-academic* research units, such as the Ambulatory Sentinel Practice Network and the Dartmouth Co-op Network" (emphasis added). This is a remarkably ironic statement for a university professor to make about two university-managed networks. The question for family medicine researchers is not whether we collect our data by or through universities; the question is *on whom we collect our data*. Though it may be heresy to suggest, ambulatory patients exist in droves in or near universities. I know, I've seen them.

I believe the emphasis on networks of practices for data collection stems more from the culture of family medicine than from a need for more representative sampling. The idea that family physicians in practice will do research is strongly held by many in the field, despite the fact that very few physicians in full-time practice do, or should do, research. I have often wondered how a practicing physician might feel if this were stated as an expectation of practice. By what reimbursement means would physicians be paid? Should they deny themselves

Submitted, revised, April 22, 1991.

From the Department of Family Medicine, Baylor College of Medicine, Houston, Texas. Requests for reprints should be addressed to Richard L. Holloway, PhD, Department of Family Medicine, Baylor College of Medicine, 5510 Greenbriar, Houston, TX 77005.



practice income to do research, or use precious time away from practice? Of course not. This is not to say that practice-based research is impossible, but exceedingly unlikely. Proponents of networks strongly imply that networks will foster such research when they are referred to as "nonacademic" and "practice-based." For the field to expect research from practitioners seems impractical and unfair. For sampling purposes, it may even prove unnecessary. There is no evidence to suggest that ambulatory patients who attend clinics affiliated with residences or universities are different from ambulatory patients elsewhere.

The strongest value I see from a network is that it fosters a participatory spirit and encourages an active dialogue between practitioners and researchers. Clinical curiosity is valuable, stimulating, and to be encouraged. And clinical curiosity, while different from research, may often lead to research. The questions posed by practitioners are likely to be important and valid. The resources provided by a university can then ensure that the research is accomplished. Universities are well suited to providing design expertise, to processing data, maintaining libraries, and providing overall research support. It makes good sense that these tasks are apportioned as such. University participants are strongly motivated to push research and to publish results. University faculty are, after all, paid to teach and conduct research as a part of the mission of their institutions.

I have avoided the topic as long as possible, but the question must be asked: Are networks worth their expense? We need to know whether data collected through networks represent samples unobtainable elsewhere, and if the time and resources invested can be justified by the resulting increase in knowledge. Specific costs for network studies are difficult to determine, particularly since some studies have taken substantial time to reach fruition, and many costs are absorbed by parent universities. For example, the otitis study<sup>1</sup> cost approximately \$100,000 and was funded as a supplemental award to ASPN for the purpose of establishing the new international network (IPCN). Thus, no funds were actually awarded for the completion of the research, except those used to establish the network. The data for this study were collected in 1986, and involved 280 physicians who were able to return nine patients each.<sup>4</sup> The authors themselves acknowledge the limitation of their sample by stating that ". . . children in our sample may not constitute a representative sample of children attending day-care centers, although we have no reason to believe that our sample was systematically biased." This is an admirably cautious statement that could be made of any ambulatory sample, regardless of its location, and perhaps at far less cost than the IPCN panel.

The ASPN report on headache in primary care<sup>5</sup> has the potential to influence over \$2 billion in overall medical costs per year, a substantial sum of money, even by governmental standards. The report, based on 1331 new headache patients seen from 1982 to 1983 by 120 network doctors, took 5 years to complete, appearing in 1988. Arguably, the data could have been collected in any number of community or university sites, if one assumes that ambulatory patients suffer headaches regardless of where they present. The rationale for conducting the research through the network appears to be that ASPN includes a relatively high number of rural practices, and the management of headache might be expected to be different there than in urban areas.

The choice of our sampling techniques and research tools should ultimately be based on the same rigorous criteria applied to any research endeavor. While networks have the image of a highly representative, nonbiased collection system, they have their limitations. The only sound methodological argument for a "nonacademic" data-collection system is that the presence of academic variables might contaminate the research, a phenomenon referred to as *multiple treatment interference*. For example, if the object of study for a network were a specific pattern of care or management strategy, the practices at universities might be meaningfully different from community-based practices. Studies such as these have occasionally been conducted by the major networks, and deserve a different kind of scrutiny from those studies that simply seek to discover a "representative" sample.

Another potentially unique research application is a rural network, where the questions asked of disease management may be greatly influenced by time and distance to referral centers. The international network provides an opportunity to address questions of practice styles, differing standards of care, progress of disease in other countries, diffusion of technologies, and basic societal differences. Questions addressed by such a network should include those important variables.

Network research has emerged as a kind of laboratory or technology for family medicine. Just as other fields may have magnetic resonance imagery or electron microscopy, we have our clinics of undifferentiated patients as an important facet of methodology. Questions remain about the costs of each of these sampling methods. These questions can only be answered by a substantial body of research, critical appraisal, and reflection. Aside from the issue of methodology, the research network may embody some of the important values of family medicine: a participatory spirit and egalitarian effort toward helping ambulatory patients. These are the values to which it is much harder to assign a dollar figure



but which may be more salient driving forces behind network development.

**Acknowledgments**

The author wishes to acknowledge the generous contributions and support of Louis A. Kazal, Jr, MD, who offered valuable insights and suggestions during the development of this manuscript. Thanks are due to P. Larry Culpepper, MD, for offering valuable information and insight, all without holding him responsible for the author's point of view.

**References**

1. Froom J, Culpepper PL. Otitis media in day-care children: a report from IPCN. *J Fam Pract*, 1991; 32:289-94.
2. White KL, Williams TF, Greenberg BG. The ecology of medical care. *N Engl J Med* 1961; 265:885-92.
3. Culpepper PL. Family medicine research: major needs. *Fam Med* 1991; 23:10-4.
4. Culpepper PL, Froom J. The international primary care network: purposes, methods, and policies. *Fam Med* 1988; 20:197-201.
5. Becker L, Iverson DC, Reed FM, Calonge N, Miller RS, Freeman WL. Patients with new headache in primary care: a report from ASPN. *J Fam Pract* 1988; 27:41-7.

**ANOTHER REASON TO INSIST ON JOBST.**

**When You Expect the Best, Demand the Original.**

**JOBST. The Original Vascular Stocking. Still Unsurpassed for Your Patients.** In 1950, a brilliant engineer named Conrad Jobst created the first graduated compression stocking for someone suffering chronic venous insufficiency. Himself.

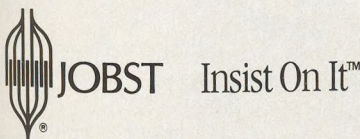
He had found that his only relief was to stand in a swimming pool. So he invented stockings that reproduced the gradient pressure of those soothing waters.

The secret of the stockings' success was their high precision. Combining a meticulous measuring process with the right materials for support and elasticity.

Like any great original, Jobst stockings have often been imitated but not duplicated. So whether your patients need the precise tailoring of Jobst-Custom™ Supports or the ready-to-wear convenience of Vairox®, Fast-Fit® or Ultimate vascular stockings, be sure to insist on Jobst.

You simply can't do better. Because as the original, we're still a leg up on the imitators.

For a handy prescribing kit, call toll-free: **800-537-1063**, ext. 770 (In Ohio, 800-228-2736).



A Beiersdorf Company  
© 1991 Jobst Institute Inc., Box 653, Toledo, OH 43694

