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Discourse

Rural Health Research: Building Capacity and Influencing Policy in the United States and Canada

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The majority of health services research in the United States has been deeply enmeshed in the financing of health care, which may partly explain the limited exchange between researchers in the United States and those in countries with very different funding systems. Rural health research, on the other hand, has been concerned more with access, regardless of how services are funded, and should offer more opportunities for international exchange. Rural health research means different things to different folks. Those accustomed to thinking about research in terms of randomized clinical trials, or at least in terms of a quasi-experimental design, in which an intervention is assessed for its effect on outcomes, may be surprised to learn of the large body of funded research that makes little or no use of such methods. The former approach to health services research is not primarily concerned with the geography of the patients or clinicians. If there is any acknowledgement that geography may have some influence on outcomes, it is addressed by including a dichotomous urban-rural variable in a multivariate analysis. The primary question in such studies concerns the clinical intervention, not the place.

In contrast, much of the rural health research currently funded in the United States is undertaken not to discover effective clinical interventions but to discover effective policy interventions. Those who labour in this vineyard have fashioned their research portfolios to address how rural is different, why rural is different, and, in most cases, whether the differences merit a policy intervention.

In a recent publication (Hartley, 2004), I argue that rural health research is a field that has come into maturity in the United States, as evidenced by the existence of its own journal (for the past 14 years) as well as two sentinel publications that have served to establish and to some

extent define the field (Ricketts, 1999; US Congress, Office of Technology Assessment, 1990). I also argue that the field has been dominated throughout much of its history by the study of access to care, especially hospital care and primary care.

A common approach to this study has been to document urban-rural differences in terms of utilization, or in ratios of services or providers to population (or, more recently, in terms of quality), and then claim an inequity and call for a policy intervention in the form of increased federal funding directed towards resolving the documented inequity. This approach was evident in the two sentinel publications just mentioned, as well as the publication of proceedings of a 1987 conference setting the rural health services research agenda (HSR, 1989), and to a lesser extent in the reprise of that conference, held in 2000 (Mueller, 2002). Both of the latter publications set the tone for the involvement of practitioners and policy-makers in the development and execution of the proposed research agendas.

This direct approach has been quite successful in terms of bringing applied research to bear on policy-making. The success of rural health research in the United States can be attributed to three factors. The first is the federal Office of Rural Health Policy (ORHP), established in 1987 with funding and authority to support a number of rural health research centres. The 4-year competitive grants to these centres have enabled them to establish a portfolio of research projects in one or more areas and to hire junior researchers with some assurance that funding will continue long enough for these recruits to develop their own research agendas. The research agendas of all currently funded rural health research centres can be found in *Rural Health Research in Progress* (www.rural-health.org).

The second factor in this success has been the role of the National Rural Health Association (NRHA) in bridging the gap between research and practice. This organization was formed in 1978 with the merger of two organizations representing rural hospitals and rural primary care. Seeking to create a "big tent" to accommodate a number of constituencies, the NRHA was able to attract clinicians, administrators, government employees, and academics. In such an organization, rural health researchers have found an effective professional body where they can present their research findings and network with funders, policy-makers, practitioners, and other researchers. The NRHA has played a role in posing research questions, advocating for research funding, and lobbying on behalf of rural residents and rural communities, using research findings to support their lobbying efforts.

The third factor in the success of rural health research in the United States has been the development of "issue networks" (Mueller, 1997; Peterson, 1993; Ricketts, 2002) consisting of many of the same con-

stituents who are active in the NRHA but who have networked and collaborated to bring about policy initiatives on specific issues such as rural hospitals, Medicare changes, rural health network development, and the rural workforce. These networks typically include representatives of federal and sometimes state agencies, advocacy and professional groups, consultants, and clinicians, in addition to researchers. They have helped to alert funders to issues that need further research, ensuring funding for policy-relevant research and an eager audience for the findings. The history of rural hospital policy is an excellent example of the evolution and influence of an issue network.

As the field of policy-relevant rural health services research has developed, the problem of defining "rural" has been a perennial issue, as noted in another column in this special issue of the Journal. In the United States, the definition has been determined by federal programs whose policies include definitions, as well as by the definitions and limitations inherent in large national data sets such as the Area Resource File (www.arfsys.com\). Researchers have relied heavily on such county-level data, which can be used with the Rural-Urban Continuum codes and Urban Influence codes, both developed by the Economic Research Service and both based on county population and adjacency to metro counties. Experienced rural health researchers in the United States have generally agreed that there is no single best definitional approach and that different definitions and rurality scales are appropriate for different research questions. For example, the *Health United States 2001 Urban and Rural Chartbook,* which presents population health indicators measured at the county level, aggregates counties into a five-category continuum (derived from the Rural Urban Continuum codes), revealing a U-shaped pattern that shows suburban counties to be healthier than both urban and rural counties (Eberhardt, Ingram, & Makuc, 2001).

Closely related to the issue of definitions is the problem of data sets based on national surveys, for which the rural sample may be too small for statistical power or for which the geographic identifier is not made available to researchers for fear that identifying a rural survey respondent in a county will compromise that person's privacy.

Methodologically, for much of its history the field of rural health research has made extensive use of descriptive quantitative methods, qualitative methods — especially case studies — and geographic methods that have also been largely descriptive. In defining an issue and creating an evidence base for a policy intervention, these three approaches have been effective, using large national data sets to quantify a disparity in access, funding, or health status, supplementing that approach with the detailed and personal stories gleaned from qualitative approaches, and

sometimes using maps to illustrate the extent of a problem or to identify specific regions where a policy intervention is more desperately needed.

While this approach has been effective in the context of policy relevance, it has been somewhat unsatisfying for researchers trained in econometrics or epidemiology. When the primary audience for one's research is other academics and the venue is publication in peer-reviewed journals, sophisticated analytic techniques can be employed, refined, and appreciated. When the audience is the practitioners, advocates, bureaucrats, and policy-makers of the rural health networks, methodological subtleties may actually impede communication. As a result, a significant volume of rural health services research does not find its way into peer-reviewed journals. This is partially explained by the need for researchers to deliver a product to a funder (a final report) and move on to the next funded project, but it is also explained by the fact that many of these studies are descriptive rather than analytic, do not involve hypothesis testing, and are not theoretically based. To some extent, researchers (and their academic institutions) may have to choose between traditional academic success and the satisfaction of seeing their findings put to use in policy formation.

There is hope, however, for those who long for the methodological gymnastics we learned in graduate school. The field is ready to move beyond describing differences in access. With the publication of *Quality Through Collaboration: The Future of Rural Health* (Institute of Medicine, 2005), a new agenda is emerging. The report has several themes, including quality improvement, human resources, financing, and information technology, but two larger themes are pervasive: that rural health systems can achieve better quality than urban systems, and that providers, funders, patients, and researchers must undergo a paradigm shift from a system based on patient encounters to a system based on population health.

The first of these broader themes will demand methodologies capable of measuring the organizational or system factors that enable rural providers to achieve the best outcomes, especially in the treatment of chronic illness, and separating severity or patient-level risk from these system-level constructs. Those researchers who are engaged in the measurement of quality of care in the rural environment have already noted the additional difficulties that must be addressed in this area, such as establishing statistically reliable measures for small-volume practitioners, and the lack of adequate data documenting medical encounters in rural settings, due in part to the cost of health information technology (Moscovice & Rosenblatt, 2000).

The second of these broad themes may be of greater interest to Canadian researchers, most of whom seem to have made the paradigm shift to population health somewhere between the publication of the

Lalonde report (Lalonde, 1974) and the publication of *Why Are Some People Healthy and Others Not?* (Evans, Barer, & Marmor, 1994). A leading rural health researcher in the United States recently noted that, after 30 years of intensive investment in improved access in his state, the recipients of those investments remain at the bottom in terms of health status (Ricketts, 2002).

As with the quality issue, one of the challenges of applying population health approaches to rural populations is the small-denominator problem — too few cases or incidences for statistical robustness. Even in the *Urban and Rural Chartbook* described above, the two categories of rural counties had to be combined for robust regional estimates of prevalence. The *Chartbook* presents estimates for four geographical regions of the United States, finding significant differences between Northeastern, Southern, Midwestern, and Western regions on a variety of health-status indicators. Responding to regionally diverse behavioural risk factors is a challenge, both conceptually and methodologically, for rural health researchers. Elsewhere I argue that these differences represent a "rural culture" that varies from one region, or perhaps one community, to the next (Hartley, 2004). Most now agree that the study of the determinants of health status must include individual health behaviours, socio-economic factors, and other environmental factors. While many health services researchers in the United States continue to focus their studies on what goes on in hospitals and physicians' offices, or the financing of those encounters, it is my hope that rural health researchers are inching towards a greater interest in these ecological variables. Making the conceptual leap from medical outcomes to healthy populations requires a methodological leap from descriptive and multivariate approaches to hierarchical modelling, so as to capture the effects of individual characteristics — some of which predispose individuals towards specific behaviours — but also to capture the ecological effects of community-level variables, including cultural factors that may influence behaviours, environmental risk factors such as water and air quality, and socio-economic variables measured at the community level, including social capital and community median income and education.

So does this successful history offer lessons for Canadian rural health researchers? It would be easy for me to recommend the formation of an office of rural health policy, a national rural health association, and issue networks, a formula that has led to success in the United States. But it seems that Canada is well on its way to developing a similar structure. I see evidence of a strong commitment to building a national cadre of rural health researchers in Canada with the formation of an Office of Rural Health within Health Canada in 1998, and the series of conferences over the past several years that have brought together researchers

to share their work and to collaborate on building a future for the field. The founding of the Canadian Rural Health Research Society at the 2002 conference in Halifax, and its support by the Canadian Institute of Health Research, are further indications of a maturing field. Perhaps even stronger evidence is offered by efforts within the CIHR to ensure that rural health is addressed by asking all 13 institutes to support rural health research announcements, and by the strategic initiative in Northern and Rural Health, with a clearly stated intent of building university-based research teams and building research infrastructure. If I might offer a small suggestion, these grants might be more effective at building infrastructure if they were structured to involve two or three research projects concurrently, allowing several members of the team to function as Principal Investigators. That approach has worked well with the US centres funded by the ORHP.

Although I am less informed about issue networks in Canada, in the United States these have been driven, to a large extent, by the vagaries of our quaint health-care funding labyrinth. The details of who gets subsidies, grants, cost-based reimbursement, or help in recruiting clinicians and who does not have established a clear link between policy expertise and significant funding streams. That is, to a large extent, the link that has motivated providers, consultants, researchers, and policy-makers to collaborate. An issue network is most likely to emerge where research has the ability to influence the allocation of substantial resources. The consumers of research value timely, relevant information. Researchers who can step out of the glacial academic pace of knowledge creation to deliver focused products on short notice can be valuable members of such networks.

Conclusion

While not offering a brilliant new agenda for rural health research and the development of rural health services research capacity in Canada, this Discourse has, I hope, served to affirm the great strides that have been made over the past 5 years, and to assure those who care about the field that it is on the right track. I have suggested that issue networks can be effective in creating a research agenda, securing research funding, and ensuring that findings are put to good use. Yet, while the non-academic members of an issue network may be satisfied with descriptive approaches (reporting the average number of beans per pod), understanding the complex factors leading to geographic disparities in population health calls for more advanced methods, and the training of researchers in such methods. While there are many other rural health issues worthy of investigation, and perhaps sufficiently salient to support

an issue network, I believe the area of population health may be particularly fruitful for Canadian researchers, and may also foster international collaboration.

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