

Neurology and the Community

Can. J. Neurol. Sci. 1996; 23: 231-233

Richardson Lecture. Presented in part at the Canadian Congress of Neurological Sciences, Victoria, British Columbia, June 23, 1995.

Neurology has a proud tradition, built on the established principles of medicine, the scientific method of the 17th century and the clinical approach of the French and later the English schools of neurology in the 19th century and the first half of this century. In the post World War II era neurology was advanced by the development of neurological training centers, the discovery of new pharmacological and neurosurgical therapies, and most recently by in the exciting advances in neurogenetics. These changes have broadened and advanced the scope of our discipline by focusing on the disease processes that affect the nervous system. I would like to suggest an additional conceptual framework to broaden it further. That concept is a population health perspective that should place our various approaches in closer relationship to the communities they serve.

A Population Perspective

When I was a dean of medicine I asked the question, "What should the view from my office be?"¹ At the time my office was on the 15th floor of the Sir Charles Tupper Building, looking out over Halifax from the highest point in the city. The traditional view, which could be seen in the foreground, was a view of the research laboratories, the teaching hospitals and the physician offices and clinics. I suggested the view should also extend into the neighborhoods beyond, to directly confront what Virchow referred to as "the issues that limit life in our communities".² It is interesting that Virchow, one of the greatest visionary intellects of medicine, a supreme reductionist scientist who showed physicians how to understand disease by focusing at a cellular level, was at the same time community oriented in his thinking about how medicine can contribute to human kind. While struggling to understand disease at a cellular level, he believed that medicine achieved its highest goals when thinking about life in the communities, and further believed that politics, which had the capacity to change life at a societal level, was simply medicine on a grand scale. This helps us understand why this quintessential reductionist scientist was most of his career a politician holding offices in local and national government.²

George Engel asked when medicine is going to free itself from its 17th century paradigm.³ The reductionist scientific model of Descartes and Newton is appropriate to address issues and questions for which the biomedical model is appropriate. However, to think that the biomedical model would answer issues outside its domain, is unscientific and perhaps anti-scientific. The biomedical model, for instance, is not particularly adept at addressing issues related to the human condition, population health, or any of the complex and inter-related determinants of health. But there are other models such as the psychosocial and the population health model that can effectively explore these areas. Unfortunately, they do not yet command appropriate respect or adequate funding in a medical and scien-

tific world that is currently governed by a single biomedical viewpoint.

Although virtually every major document on medical education and the direction of health care has indicated the need to accept a population and community perspective, traditional medicine has ignored the recommendations. Our profession has earned, at least in part, the growing criticism that we appear obstructionist, resistant to change, and self serving. The repeated recommendations that we change our approach have begun to sound like warnings, as governments are expressing exasperation, and funding agencies frustration. Dr. Steve Schroeder, President of the Robert Wood Johnson Foundation said, "To the degree that academic medicine does not meet the needs of society, resources might have to be diverted to support other institutions that are able and willing to fulfill those needs."⁴

I believe we can respond better to community needs. The concepts, the approaches and the tasks are not that difficult, but they require a change of "mind set", a shift of paradigm. As the expression says, this is not rocket science, but it does require an attitudinal change for medical education and the profession; perhaps rocket science is easier.

The Social Contract

The requirement of medicine to respond to the community's needs is based on our concept of a social contract, which, despite some recent denigration of the term by politicians, speaks to an important principle dating back over two and a half centuries. Our social contract essentially says that in return for serving society, medicine and its members enjoy special status, rights and other tangible benefits. While we all accept that, we have given too little attention to the initial side of the equation, and the specific ways that we must serve society. Up to now, we decided how best to serve society, and what was in society's best interests. The new paradigm indicates that we must develop a dialogue with society to determine what its expectations are of us, and what the needs and burdens of illness are that we must struggle to address. Neurology must move from an *internal paradigm* to an *external paradigm*. The essential point is that we should approach community's needs by careful epidemiological research, and by discussing these with the community, not just decide in our committee rooms what the needs of the community are.

Is it too difficult for neurology to assess the expectations and needs of society in relation to neurological disease? I don't think so. Educating Future Physicians of Ontario (EFPO) is a visionary and important educational project funded by Associated Medical Services, the Government of Ontario and the five Ontario medical schools. EFPO attempts to change the undergraduate curriculum starting with the expectation and needs of society.⁵ They have done a credible job of trying to understand the burden of illness in society and what society expects of future physicians. In those discussions it became clear that society expects the future physicians to fulfill the following roles: medical expert; life long learner; communicator; collaborator; advocate; gatekeeper; educator; person. If we

agree (and these discussions are always a dialogue), then we should recognize that we have not been attentive to some of those expectations. We have certainly been successful at developing medical experts (in our case neurologists), although we have not balanced science and humanism as well as we might, and we have succeeded in encouraging life long learning. I suspect we fall short on some of the other roles. Too many of our graduates are deficient in communication skills and are regarded by the public as brusque and even rude. Many of our physicians, including physician leaders, are unenthusiastic and cautious about collaborating with other health professionals involved in the care of neurological patients and even antagonistic to them. A specific role neurologists have neglected in many instances is to the care of the patients as opposed to solving of the diagnostic puzzle posed by the patient. "Diagnose and Adiose" was too often the attitude of classical neurologists, feeling their job was done when the site of the lesion was determined, and an eponym declared. In many instances where we could play an important role we have neglected our advocacy responsibilities. Many rail at the suggestion that we are gatekeepers, even though it is inherent in our profession, as we perform gate keeping roles continually when we admit and discharge patients, write prescriptions, and order diagnostic tests. As educators we have often been stuck in a tradition that is more teacher than learner oriented, with more concern about what is taught than what is learned. Too often the curriculum in neurosciences was disease focused only, without a population health perspective. Lastly, the perception of "good doctors" is still too often of those who work excessive hours, and are always available. They can be forgiven if they neglect their health, their personal lives, their marriage, and their children. In short, we have much to do to meet the expectations of society for their future physicians, as identified by EFPO, and more recently by CanMed 2000, an extension by The Royal College of Physicians and Surgeons of Canada, of the EFPO concepts to all postgraduate programs.

Beyond that, we can also try and assess what society expects of us in our role as neurological educators. I think it is fair to say that society expects us to train the right number of neurologists for the right areas of neurological practice, for the communities that need them, and then to assist them in their continuing education, while providing them better ways to care for people through neurological research. Are we training the right number of neurologists? Well, back in the 1970s we argued in a federal physician manpower study,^{6,7} that there should be one neurologist per 90,000 population. We argued that by 1995 there should be 333 neurologists. In fact, we passed that goal over a decade ago and have increased our training program so that we now have one neurologist for 60,000 population, and have a registered neurologist group of 497. What's wrong with this picture? Either we have been irresponsible and continued to train neurologists when we exceeded our own recommendation, or we have neglected to explain the reasons how the scene has changed to justify having trained so many more neurologists than we ourselves said were necessary. We have heard hardly a peep from program directors about this. That does not surprise me because I have never yet met a program director who would voluntarily reduce the size of his or her program, and likewise I have not yet met a program director who didn't hope for even more residency posts. Surely our programs will be reduced in size by others, but it would be preferable if we took the responsibility, and we

shaped the future of our discipline. Not to do so endangers not only neurology, and a health care system with limited resources, but it will create great difficulty for recent graduates of our neurological training programs. Many of our trainees are concerned about their futures and sense uncertainty in a specialty that may be overpopulated. We have recently seen that managed care organizations in the United States have been rather strict about who is important in the future cost-conscious clinical system and neurology isn't seen favorably, as there are too many neurologists, with too many expensive and often needlessly applied procedures.

Who Will Care for Neurological Patients?

We have to decide who cares for the many patients who suffer from neurological symptoms and problems. Are we to train more and more neurologists to care for the problems, or to more adequately prepare other physicians to manage problems that are well within their domain.

An important way to assess the community responsibilities of neurology is to assess the profile of neurological problems in the community. This then can be used to shape the neurological curriculum so that we are training physicians who can address the appropriate problems of practice. Two decades ago I did a study of 25 Nova Scotia family physicians to assess the kinds of problems that occurred in their practices.^{8,9} Ten percent of the patients consulting a family physician had a neurological complaint, but about one percent ended up with a neurological diagnosis. However, all ten percent required a neurological assessment. To determine which symptoms or problems were of importance I used an emphasis score based on the frequency of the problem, its potential seriousness to the patient, and the effect of treatment. A second, and more important approach from a curricular point of view, was to group those important conditions into those that were common, those that required emergency management, those that were treatable, and a few that were illustrative of important concepts and advances in the understanding of the nervous system. This could be used as a basis for curriculum design and was used by the American Academy of Neurology to outline a core curriculum for neurology.¹⁰

I was disturbed to find that physicians in the community often had feelings of great inadequacy in relation to neurological patients, and had a lack of confidence in their neurological assessment and examination. This lack of confidence caused them to dislike neurological patients and instead of referring them, they often just wished to dismiss them from their office. Based on these findings it was possible to rethink the construct of medical education, and in this case neurological education, beginning with the assessment of the community needs and expectations and burden of illness, and reconstruct the educational program to assure that future physicians have these attitudes, competencies, knowledge and skills, as done by the EFPO project.¹¹ To complete the process it is necessary to incorporate a concept of evaluation in all of this, extending from the community at one end, to the physician out in practice, and to incorporate a research component at all levels.

Basic and clinical research will always be free to explore areas of curiosity based research, but we should expand our research horizons into areas that we have neglected in the past. As a result, our opportunity and capacity for research will just increase.

The Academy in the Community

Elsewhere I have argued that a medical school is an *academy in the community*.¹² We must preserve the first and serve the second. It is imperative that we preserve our inquiry and research, but it is equally imperative that we respect our social contract and address the neurological needs of the community.

It is my contention that this approach would work as well in Ontario, California or West Africa. In recent years I have been involved with the development of curricula for developing countries, and believe the same principles can be utilized in all settings, based on a community and population health perspective. Using this approach I have proposed a concept for training of neurologists in developing countries utilizing general internists for neurological roles, rather than the North American model of a more narrowly trained neurological specialist.¹³

A Challenge to Our Leadership

Many of the building blocks for a future direction for neurology are already out there, largely unknown or ignored by the neurological community. There is a very strong and consistent philosophy put forward by the WHO Alma Ata Declaration,¹⁴ the Edinburgh Declaration on Medical Education,¹⁵ the GEPEP Report,¹⁶ the many provincial royal commissions on health care, the EFPO planning documents,¹¹ and the many major reports on medical education in the last decade.^{17,18} I had the pleasure of participating in the Working Group for Neurology of the World Federation of Neurology that met with the World Federation for Medical Education to determine the strategies which neurology as a specialty might employ to support necessary change in medical education.¹⁹ The result of this document was a set of responses by neurology to the 12 principles of reform outlined in the Edinburgh Declaration.¹⁵ The first eight principles of reform could be achieved by each medical school, and the last four principles called for a wider collaboration of medical schools with governments, other health professions, authorities and communities.

When there is opportunity, but little discomfort, we seldom move or change. At that point, to grasp opportunity, we need great leadership. By the time we are under distress and in trouble, it is likely we will change, and there is then no real need for much leadership. I believe we are at a time of opportunity, but will soon be feeling discomfort. Let us grasp the opportunity. I would ask that the Canadian Neurological Society take the lead, and organize as a first step, a Symposium on Neurology in the 21st Century. This would allow us to focus on our future as neurologists, on our discipline and how we can best address the directions for clinical neuroscience in serving the community.

Such a symposium would look at directions for clinical practice, for research, for our relationship to other disciplines, our challenges in education, our role in clarifying the nature of illness, and approaches to better care of patients. The commitment

of such a symposium by our society would indicate we are not going to remain in a 17th century reductionist paradigm, with a 19th century clinical paradigm, but accept a new community and population health paradigm for the 21st century.

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