FEATURE

What Drives Continuing Evolution of Careers in Medicine and Healthcare?

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Two major phenomena have driven dramatic changes in medicine and healthcare careers over the past century. One critical factor has been the almost logarithmic increase in knowledge, a general phenomenon forcefully evident in medicine over the past decades. The other significant phenomenon relates to social and cultural changes with gradual development of more accepting attitudes in a diverse medical and healthcare workforce. Each of these is paralleled by consequential, organizational, family, and institutional changes.

Knowledge has expanded at about 2% per annum, compound, over the past 200 years, according to economic studies using translation of knowledge into productivity increases as a surrogate measure.[1] Creation of new knowledge has also led to innovative translation with huge changes in medicine. Whereas 100 years ago a single brain, that of Sir William Osler, could be the primary repository of what was known then in medicine and write the comprehensive textbook "Principles and Practice of Medicine",[2] today, one single mind cannot contain all that is known in medicine. Accrediting bodies such as the Royal College of Physicians and Surgeons of Canada and the American Boards of Medical Specialities in the USA now recognize over two dozen specialities, each of which requires a whole career focus and is in itself a brain full of knowledge. This profound increment in medical specialities continues with new subspecialties proposed each year. Similar proliferation of roles have led to an expanded number of new professional careers in nursing, pharmacy, physiotherapy and occupational therapy, and other healthcare activities — unlike years ago where each was a single profession.

Nowadays, this requires collaboration facilitated by electronic communications with practitioners cooperating as inter–professional "communities of practice" in the best interests of patients. Additionally the patients and practitioners are now exposed to web based knowledge that accentuates the requirement for caregivers to also have immediate access to detailed current knowledge. It also emphasizes the need for all practitioners to use continuing education programs to maintain an up to date knowledge base! This, together with patient-rights initiatives, is gradually leading to a balance with physicians being seen as having expertise and authority over medical therapy and patients exercising more control over which options for care are implemented according to their preferences.[3] This is, however, a very complex set of interdependent professional relationships and will continue to evolve long into the future.

Fifty to one hundred years ago, single, apparently omniscient physicians, nurses, or others with comprehensive knowledge in their specialty or practice often presented themselves as authoritative, occasionally irascible bosses with structural authority.[4] Such prescriptive behaviours often occurred in operating rooms or emergency rooms where definitive verbal orders were given with instantaneous action and compliance expected of subordinate nurses and others. Nowadays, there are numerous knowledgeable practitioners, each more accustomed to assuming the role of helpful expert to assist their teams, who display their own extensive knowledge as "sapiential" or "personal"[4] authority, a much more benign professional presentation.

From a social and cultural perspective over the past century, major cultural shifts in Western-oriented civil societies have occurred: perhaps as a result of two World Wars and post-recession episodic changes. Changes in traditional family roles has been one of these shifts, with more women in the workforce at senior level workforce positions. If one reviews the pictures of UBC Medical graduates over the past 60 years in the Webber MSAC Alumni room, the number of female graduates in the 1950's was 5-10% each year whereas in current classes 50-60% of graduates are female. Also, the racial makeup of classes has changed to more closely reflect population numbers. To a degree, these shifts seem to reflect a more balanced perspective towards a civil society with a move away from authoritarianism, thus encouraging a more egalitarian professional situation.

All of these social, cultural, and epistemic changes have impacted the overall orientation of healthcare and medical practice. While always required, added emphasis is now placed on empathy, dependability, and integrity as attributes required of our graduates and coworkers in addition to an ongoing need for critical analysis and reasoning skills leading to measurable clinical competence. This is not to imply that a focus on social issues never existed. I can personally recall having a medical school course on social and cultural values in the 1950's and still remember and utilize the concepts today of a required essay[5] where I proposed a balanced civil society that valued individual freedoms. Condemned was the authoritarianism of the "soul–less", and absolutist anarchic or regimented states!

A further cultural shift has been towards an increasing emphasis on the need for economic efficiencies. Indeed, in

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medical research, the requirement for effective "bench to bedside" translation is emphasized today with increasing calls for "ROI" or return on investment. This has led to the need for effective ethics review committees to protect patients' interests[6] and reduce pressures on medical researchers from undue market involvement of commercial entities such as pharmaceutical companies.[7] A further problem arises with the increasing clash of professional and corporate interests. A professional by definition practices medicine to the standards of their profession in their community—not as an "occupational" working to the imposed standards of a boss![8] Pressure is exerted by some healthcare administrators for doctors to practice according to administrative budgetary requirements, thus being more efficient and perhaps less effective in care of their patients. A number of years ago at the Canadian Red Cross Blood Services, the physician in charge appeared to have rejected blood testing for donor blood infections due to testing costs on the orders of his funding agency bosses—in that case provincial government bureaucrats. His unprofessional behaviour was ultimately outlined in the Krever Commission Report.[9] This led to him being professionally discredited, the Red Cross Blood Transfusion Service being terminated, and the Canadian Blood Services Agency being created.

In medicine, a major initiative that has had a profound impact is prevention of infectious diseases by immunization. This and other preventive measures have led to the survival of many who might otherwise have died. Now we are faced with an aging demographic, many of whom through excess nutrition and salt intake,[10] suffer from obesity,[11] hypertension, diabetes, and major cardiovascular issues. These will require additional attention in the decades to come!

So, what is the ultimate answer to the question posed at the beginning of this polemic? The enormous increase in medical knowledge, adapted to improve the quality of care of patients has led to an essential, major proliferation in types of healthcare providers. This in turn has led to significant shifts in professional relationships, not only of patients and doctors but also among healthcare providers. It is interesting to observe that such interdisciplinary activity is effected, based on a principle outlined by Adam Smith in the 1770's as a significant concept of the Scottish Enlightenment—the Division of Labour.[12] In that description, workers provided a defined activity based on their personal expertise and skill that built upon the different expertise and skill of other providers towards an ideal cooperative outcome. In Smith's description, that outcome was the efficient manufacture of pins; in our current description for healthcare providers it is towards the optimum outcome of care for our patients in an increasingly complex healthcare environment. Cooperative inter–professional care will require greater provider empathy for all to understand and enable each other's role in these complex, beneficent patient care related undertakings.

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The Times They Are A-Changin'

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As Bob Dylan so aptly sang, "The times they are a-changin'." Nowhere is this truer than in the provision of health services. One need only look at the healthcare networks of other provinces, the use of multidisciplinary teams for the provision of health care, the increasing scope of practice of other professional groups, the inability of so many British Columbians to access a family doctor, and the programs in place to improve the healthcare system to know, to borrow from the same Dylan tune, "we'd better start swimmin' or we'll sink like a stone."

In July 2011, I had the honour of chairing the BC Medical Association (BCMA) working group that developed a position