

Fuzzy Issues in the Future of Healthcare: What Futures Studies Can Teach Us

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We begin by discussing the reasons for current concerns about healthcare: the rising costs, the growing interest in well-being, the institutional base for research, and the connection of healthcare — in Canada — with national identity.

This is followed by a discussion of the major trends in healthcare: decentralisation, customisation, digitisation, globalisation, change, the growth of chronic illness, the growth of health consumer awareness, and the supply driven character of modern healthcare. We dwell in greater depth on two of these issues: decentralisation and increasing use of technology, and examine the implications. We also consider factors which mediate or intensify the effects on healthcare of decentralisation and technology.

We then discuss some of the “fuzzy issues” in healthcare research as they relate to the future: the fuzzy goals of healthcare systems, the fuzzy definition of healthcare recipients, the fuzzy definition of healthcare sites, and finally the fuzzy definition of accepted medical practice. Futures research can help us analyse these fuzzy issues more clearly: the key methodologies of futures research provide necessary tools for thinking clearly about fuzziness. Accordingly, we draw some conclusions about the future — particularly in respect to home care, a practice that will continue to grow rapidly in the future.

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Why the Concern about Healthcare?

Whenever people discuss healthcare today, they begin by discussing the costs. Health care costs have risen dramatically for the last few decades, for a variety of reasons.

There are three contributors to this rise in cost. First, in Canada as elsewhere, strong efforts have been made to equalise access to good quality health care, regardless of social class or region of the country. Doing this is costly. Second, new drugs and technologies are developing rapidly, and they tend to be increasingly expensive. The expense is largely due to the development costs of these drugs and technologies, and the fact that patents protect them, so that developers are able to recover their development costs. Third, the population is ageing, and older people tend to cost more to maintain (medically) than younger people did. Finally, everywhere, people's expectations of a long healthy life are increasing, so the healthcare system simply must achieve more to be viewed in a positive light.

A second reason for concern, already noted, is that people have a growing interest in their own well-being. In every industrial nation, including Canada, people expect to live long and well. To achieve these goals, they eat well, give up smoking, and exercise regularly. They buy clothing and cosmetics to make them look young, and non-prescription drugs - many of these alternative, traditional medicines like ginseng - to help them feel young. The North American culture is obsessed with youthful good health and good looks, and North Americans (at least) rely on their healthcare system to keep their bodies running smoothly. To judge from the European and Asian films and television we have seen, this sentiment is strong outside North America too, especially among highly educated people who live in cities.

Third, concern with health is strong because there is a large institutional base for research into health, and researchers tend to produce a need for their research. The health research establishment is a large one, at least in Canada, with something for everyone to study.

Fourth and finally, Canadians feel that the health care system is part of their culture (see Maclean's/CBC poll of Dec. 20, 1999:34), so in Canada healthcare will always be a major concern. Anxieties about the erosion of healthcare accompany fears about the erosion of national identity in the face of economic and cultural globalisation.

Growing concerns have produced a rapid increase in research activities. Medical researchers are busy studying the effectiveness of dif-

ferent treatments for a wide variety of conditions. Health economists study different methods of paying for large-scale health systems, both private and public. Demographers project changes in the population profile - especially, the rate and effects of population ageing. Epidemiologists study both the rates and distribution of disease and health, and changes in population composition and location, and relate population changes to the occurrence of different health problems. Political scientists study the political, legal and administrative impacts of new healthcare demands and supplies. (With health as expensive as it is the politics of healthcare are a major regional or national concern, in every country.) Philosophers ponder the ethical aspects of healthcare - for example, issues related to people's right to die.

Sociologists like us study a wide variety of topics related to health and healthcare. Often, we encroach on other disciplines' territory. Like some others, we study the demographic, economic and political aspects of the healthcare "problem". In addition, we think about the social effects of new challenges to healthcare delivery: for example, what will be the effects of longer, healthier lives on educational institutions, workplaces, and family lives. How will prolonged lives produce a greater demand for self-care and home care, and how these will affect people's lives outside healthcare institutions. Most broadly of all, how will people conceive of, plan, and actually lead their lives in a world where, increasingly, people are leading longer though not always healthier lives than they had expected to? We haven't all - individually or collectively - made provision for this rush of good fortune.

These are just a few of the issues that interest and concern us, but they give some flavour of the problem at hand.

What We "Know" about the Future of Healthcare: Major Trends

Given these concerns - which are numerous and immense - what can we expect about the future? Will our concerns prove justified? Will we find solutions to our problems of healthcare, and if so, how will we find them? What is our best method for thinking about this problem? As students of the future, we should have the inside track at answering some of these questions.

We know that these problems that concern us are not going to solve themselves. They will require human action, for various reasons. Most important, we know that progress is not everything people had hoped it

would be. Some human problems from earlier centuries still remain, and ill health is one of them. As infectious diseases are beaten back, new degenerative causes of death and morbidity make their presence felt. And even among infectious diseases, new germs and bacteria emerge, and old ones evolve. Sickness remains a battle between human and non-human species; a battle that will never end until one species wipes out the other. Let's hope that doesn't happen soon, since we human hosts are likely to be the ones who will lose that contest.

There are other reasons why healthcare will not solve itself. We have seen, in the last ten or so years, that economic and political progress is very slow to come to certain portions of the world. And, whenever war or economic calamity or political upheaval present themselves - as in so much of Africa, the former Soviet Union, and in many portions of Asia - health gains are lost, illness rises to catastrophic proportions (often in the form of epidemics), and life expectancies fall. We will not solve the healthcare problem so long as people make wars and otherwise create civil havoc.

On the other hand, we will continue to make efforts to deal with these problems of healthcare. There is, everywhere, a growing interest in health promotion and illness prevention, not merely in remedying the harmful effects of illness on a person-by-person basis. This concern is not only universal in its scope; it is being acted on internationally by large, often well-funded organisations with political backing. We have reason to hope that these initiatives will continue and will gradually bear fruit. Note, however, that this will be a never-ending battle. We will never lack for illnesses to prevent and good health practices to promote, so we are merely near the beginning of a long, new process.

Third, healthcare research and promotion will increasingly depend on the flood of research findings that are made available to us, more and more quickly, by new information technology. Chief among these is the Internet and the web sites that anyone can access from their own homes. However, every technological advance brings its own problems. The new information technology has given everyone a new problem: information overload. We have yet to figure out how to organise and use this information at our fingertips: how to evaluate it, organise it, and act on it.

So, in the future, people will have both new and old diseases to grapple with. Healthcare researchers and providers will have, on their side, new information technology and new preventive techniques and infrastructure to help in the battle with illness. How they will do so remains to be

seen; however, we can make some educated guesses. As social scientists, we already know a great deal about likely major trends in healthcare. That is because they are already unfolding.

The first of these trends is *decentralisation*. Increasingly, we are receiving high quality health care in the home, where (non-professional) members of the household provide it. In some respects, this parallels the decentralisation we can observe in other areas of our lives. Increasingly, our education occurs outside of schools, our paid work outside of factories and offices. Increasingly, our homes are becoming places for non-familial activities, or activities in which, formerly, other family members did not play much part.

A second trend is what we will call *customisation*. Increasingly, health problems vary from one patient to another, and call for individualised responses in unique household settings. This is not, strictly speaking, a new thing. Illnesses and conditions have always varied from one patient to another. However it is only in relatively affluent, long-living populations with high expectations about good health that these variations will be taken seriously. Regimentation and uniformity are less necessary in rich countries. As the human race becomes more affluent, we can afford to take human variation into more account, and we are more likely to customise our treatments of one another, in healthcare and otherwise.

A third trend is *digitisation*. Like every other area of life, healthcare is becoming more reliant on computerized (digital) technology. Increasingly, health care is delivered or mediated by technology which is, increasingly, portable, miniaturised, and user-friendly. This, among other things, makes possible the decentralisation of healthcare from hospitals and clinics, into schools and people's homes, which we referred to earlier. Whether this mechanisation leads to higher quality care is, of course, something people do not agree on. Whenever machinery makes an appearance, many complain about the loss of the human touch or the human element. However, on balance, it seems unlikely that we could accomplish many diagnoses or treatments without this mechanisation, which will continue.

A fourth major trend in health care is *globalisation*. Everything has become internationalised: commerce, political decision-making, the flow of information and culture, and of course, disease and health. Increasingly, health problems are globally mobile and health care strategies are shared internationally, despite occasional cultural, economic and political barriers. This is a major accomplishment, and it is miraculous that such global influence persists, despite competing political interests, different

languages and cultures, variations in wealth and poverty, and upheavals of war and civil unrest. Make no mistake; this globalisation of healthcare is part of a larger and, for most world leaders, more important game of power brokering and empire building. Nonetheless, it is part of our world and it will continue.

A fifth major trend is the continued and growing rapidity of *change*. Everywhere, change - social, political, cultural, economic, and medical - is institutionalised. People expect change to continue. Change itself is what we expect of governments and ourselves. Increasingly, research on healthcare must prepare us for continual change, for change will continue to be the only constant.

A sixth major trend is the growing concern of healthcare providers with *chronic illness*. Acute illnesses or conditions are still important. They still kill large numbers of people around the world every day, and keep many more people home from school or work. However, increasingly, chronic diseases are replacing acute ones as sources of concern and expenditure. This is particularly true among older people, and particularly true among the more affluent classes in more affluent countries. Thus, if the future world comes to look more like the affluent industrial and post-industrial world that exists today, we can assume an increase in chronic illnesses. And such a change appears to lead to greater interest in alternative medicines, which give many people in North America a feeling of being helped through an otherwise unconquerable condition.

A seventh major trend is continued growth in *health consumer awareness*. Increasingly, health consumers use the Internet to become better informed and more demanding about healthcare strategies their professional caregivers are providing. In this area of life as in every other - for example, just as when we buy a car, choose a college, or go to a movie - we want to purchase wisely and get the best we can for our money. Our access to, and interest in, what the web has to tell us about healthcare will continue to grow, and we will put more and more pressure on our health caregivers to be at least as well informed as we are.

Finally, we can assume that health care will continue to be *supply driven*. Increasingly, practitioners and insurers (public and private) will define what may and may not be considered legitimate illnesses and legitimate treatments. This has already become a battleground, since life and death and taxes - the most universal, important and inevitable human concerns - are all tied up with healthcare delivery. So, we can anticipate that we consumers will continue to depend on the good sense of healthcare suppliers. Much of the politics we see in the coming centu-

ries will be attempts to regulate and oversee these suppliers of good health.

The Complexity of These Issues: Trends and Contexts

The health and healthcare problem is complex - more complex than we have indicated so far - since the trends we have been discussing interact with social contexts in complicated ways.

Consider two major trends - decentralisation of health services and increasing use of technology (including biotechnology) in health services - which will influence substantially the nature and amount of home-based care in the future. The decentralisation of health care is part of the larger process of government's reducing its contribution to and control of all services. It comprises many sub-processes like de-institutionalisation, privatisation, and de-professionalisation of health services. The increasing use of technology comprises many features like the miniaturisation of diagnostic and treatment machines, the increasing use of distance communication via the Internet, and new treatments from biotechnological research to treat conditions, diseases, pain, and euthanasia. These trends have many implications for home-based care, though they could be mediated by economic, demographic, political, and cultural factors.

Decentralisation

As part of their attempt to reduce the deficits and debt, governments have been reducing their contribution to health care. The most obvious way in which this is happening is the closing of hospital beds or even hospitals themselves. This is the process of deinstitutionalisation. As part of this process, patients have shorter stays in hospital (e.g., a day for birth of a baby instead of a week), and more patients are treated on an outpatient basis. Thus, in the future, patients are likely to require more home-based care than in the past.

Privatisation, the turning over of a publicly supported service to the private sector, either by leaving the field (e.g., some highway construction) or paying a private company to undertake the service (e.g., plans for clinics in Alberta and home-care services), is a very popular strategy of governments reducing deficits. In Canada, a country with universal health care coverage, 70% of the health care costs (e.g., physician services, hospitals, some drugs, etc.) is paid for by governments, and 30% (e.g., extended benefits, some drugs, dental services, etc.) is paid for privately.

In the future, governments are likely to contribute even less to these costs. As a result, insurance companies or the families of the patients will pay for more of the costs. In addition, new private agencies will emerge to undertake tasks left by governments, or to compete with voluntary associations for government grants.

De-professionalisation of services consists of having non-professional workers perform work previously done by professionals (e.g., substituting family members or lesser-trained agency workers for nurses and technicians in the care of patients). Often the professionals are downsized and end up working at a voluntary or private agency. This occupational move may also lead to the process of de-skilling, professionals working at a job which uses less of their training and skills and pays less for the work (e.g., specialist nurses doing routine home-care visiting). In the future, home-based care will involve less professional care than in the past.

Increasing use of technology

Miniaturising of diagnostic and treatment machines is likely given that computing power of microchips follows Moore's Law of doubling every 18 months. The miniaturising of machines for diagnosing conditions (e.g., echo testing, electrocardiograms, electro encephalograms, etc.) would permit home-based diagnosing and monitoring of conditions. Miniaturising machines for treatment like dialysis and drug taking would permit more home-based treatment.

Along with the improved diagnosis and monitoring would come the ability to communicate that information to external agencies via the Internet. It should also be possible for an agency to adjust treatment via the Internet, send assistance, etc, if the readings were to warrant it. The Internet would also be a source of information (e.g., available services, answers to frequently asked questions (FAQ), and updating of home-care information) and decision-making (e.g., by means of a package which uses an inventory of patient characteristics to recommend optimal treatment alternatives).

The biotechnological revolution promises to provide a wide variety of new diagnostic processes and treatments for conditions and diseases that are not easily predictable. Overall, in the future, the increasing use of technology suggests that the quality of home-based care would be superior and more customised to the individual patient than in the past.

Implications

Many implications follow from these trends and their effects. They include:

- * increased responsibility of family members for patients at home,
- * increased likelihood of stress for the care-givers,
- * increased opportunity for the private sector to provide home-based care,
- * increased opportunity to focus on standards of care, and a careful use of resources,
- * decreased opportunity for expressive care and “quantity time” with patients,
- * increased competition for home-based care dollar,
- * increased concern for privacy of information,
- * increased concern for shareholder value in home-based care,
- * increased opportunity for jobs and training in and evaluation of home-based care, and
- * increased concern about what and how much treatment should be made available to people, especially people with terminal conditions.

As governments remove themselves from health care, without making equivalent financial resources available, individuals have to assume more responsibility for the care of their family members. This, of course, is not unusual in human history. Families have had the major responsibility for care of the sick members until the rise of hospitals in the middle of the 20th century. Some middle and upper class homes were even prepared for this by having sick rooms.

However, with the movement of women, the usual care-givers, into the labour force and the redesigning of homes, current families are not likely to be able to accommodate and support a patient as easily as in the past. Major changes in house design and family dynamics will be required. With increased responsibility can come increased stress. Many studies of caregivers have shown that care-giving adversely affects their emotional health (Pavalko and Woodbury 2000). It is possible that increased use of technology and information (see above) could alleviate some of the stress. But what seems to be most helpful is assistance with the tasks, not sympathy.

As governments (e.g., Ontario) seek to reduce their activities, they are planning to open competition for home-based care to voluntary associations (e.g., Community Care Action Centres and the Victorian Order

of Nurses) who have traditionally provided care and private companies on a tender system basis. All concerned will become more involved in thinking about standards of care and evaluation, careful use of resources and balance of services, and generally showing more accountability. But the increased competition may divert people's attention from expressive care-giving and spending "quantity time" with the patient to grant obtaining and proposal and report writing - a phenomenon not unknown to university professors.

With the appearance of private companies would also come the possibility of large multinational organisations being involved either directly or by acquisition of smaller companies. The presence of multinationals could lead to concerns about the privacy of health data and shareholder value. Health data could be sent out of the country to central databases. Data about conditions could be linked to other databases and affect people's ability to get insurance, credit, etc. Shareholder value is of prime importance to public companies. But enhancing shareholder value might involve compromise in service provision. In managed care plans in the U.S., limitations are placed on the amount of care provided to some participants (e.g., who can participate and the amount of care they can expect) and some participants are forced out of plans when their expenses become very high.

With the emergence of new agencies to deal with home-based care, new types of jobs (e.g., home-based care worker), and thus, new types of training (e.g., home-based care education courses and programs, similar to early childhood education and gerontology activation programs at community colleges) would be created. Home-based care continuing education would be available at colleges and on-line. In addition, a need for teachers of home-based care education, administrators of programs and agencies, evaluation experts, textbook writers, etc. would also occur.

Finally, the emergence of new treatments - some of which would be costly - in conjunction with privatisation would generate a debate similar to what is found now in managed care situations. What kinds of treatments and how much of these treatments should be made available? Will these questions be determined by bottom-line or humanitarian considerations? And how will we deal with the problem of euthanasia?

Mediating factors

Four types of mediating social factors, economic, demographic, political, and cultural, might affect the outcomes of the trends. Economic mediating factors include the strength of the economy, level of

unemployment, changes in the work place (e.g., telecommuting), the percentage of women in the labour force, etc. We are now experiencing the longest peacetime boom in the history of North America. If a recession or substantial downturn were to occur, less money would be available for all programs, including home-based care and less money would be available for technological research of all kinds. Thus the scope of plans for home-based care would have to be curtailed.

On the other hand, a downturn could lead to a higher level of unemployment, which might mean that more people would be available to help those needing care at home. The unemployed might also be able to find part-time employment in care giving. Many articles note how people who telecommute are able to spend more time with their children. Telecommuting also would help those who are providing home-based care to spend more time giving care. Since women are the traditional caregivers, the percentage of women in the labour force would affect the nature of home-based care. Places where women have not joined the labour force in as high numbers as in urban North America might not require as much help with home-based care as the cities.

Demographic mediating factors include the ageing, the increasing fitness, and increasing prosperity of the population. An ageing population might suggest that more home-based care would be necessary in the future. But, the increasing fitness of successive cohorts of people suggests not only that they might not need as much care as earlier cohorts, but also that seniors might be able to help other seniors as the organisation Seniors for Seniors does. In addition, the prosperity of these ageing cohorts relative to earlier cohorts suggests that they might be able to afford substantial care without governmental assistance, thus reducing the need to support home-based care.

Political mediating factors include the amount of intervention various governments believe in promoting. Conservative governments believe in less government and more self-reliance on the part of citizens. Thus they are likely to cut back on home-based programs and look to privatise more services. On the other hand liberal governments believe in more intervention and showing that governments are doing something positive for the people. The Liberal party of Canada has expressed support for home care. They might promote it as a way of maintaining their influence in Canadians' health.

Finally, cultural factors include the values and symbols of countries and regions. Universal health care ranks very highly in Canada's value system according to most national surveys. In the annual Macleans/CBC poll (Dec. 20, 1999:34) 79% identified our health care system as a sym-

bol of what makes us Canadian. It represents not only protection for their health problems, but also their communal responsibility to all. As they see their health system declining, Canadians are likely to want to see alternatives to protect their valued institution. Support of home-based care could be such an alternative. If the conservative ideology becomes more ascendant, then more privatising of this area will likely occur, but not even Ralph Klein or Mike Harris suggests the total removal of government from the area of health.

Another value, the right to choice or control of one's body, could substantially affect the debate about euthanasia. It was not such a long time ago when people went to prison for advocating birth control and abortion. If a right to euthanasia is permitted, following The Netherlands' example, then one might expect less need for home-based care. Also contentious, is the concern over biotechnological research. Advances like using fetal brain tissue to relieve diseases of the brain are causing protests. Most biotechnological advances will likely cause long debates and protests, (cf. the debates and protests for comparatively milder topic of genetically modified foods). So it is difficult to predict how home-based care will be affected by this kind of research. On the other hand, improvements of technological devices and communication should be readily accepted and improve the quality of home-based care.

What are the Fuzzy Issues?

More people today are interested in what is called "fuzzy logic" - a type of logic that recognises more than simple true and false values, zeroes and ones. With fuzzy logic, all values are probabilistic. Propositions are represented with degrees of truth and falsity. For example, by this logic we can assert that everyone is an informal care provider. In some communities, and some families, this statement comes close to being 100% true; in others, it may be only 50% or 10% true. Fuzzy logic is useful in expert system and other artificial intelligence applications. It is also used in some spell checkers, to suggest a list of probable words to replace a misspelled one. An example is in the construction of historical genealogies, where a great many people have similar names, the same-sounding names with different spellings, or multiple spellings of the same name.

This approach is useful because it reminds us that, in the real world, things are rarely one or zero, white or black. Most things are shades of gray, with the boundaries between them blurred. This is increasingly

going to be true of the healthcare issues we have noted above, so we are all going to have to get better at our fuzzy logic. Consider some fuzzy logic issues of the near future.

First, consider the increasingly fuzzy goals of our health systems. We are becoming ever less clear about what “good health” looks like. We can agree that we are all concerned about wellness as opposed to a mere absence of illness. But how are we going to define the boundaries and characteristics of wellness? We all have different tolerances of ill health and different expectations about life, liberty, and the pursuit of happiness. And do we include a good death or euthanasia among the goals?

Defining this problem more narrowly, we will need to consider how to divide our time, activity and scarce resources among competing health care initiatives. For example, what should be the appropriate role of prevention versus remediation in the healthcare industry? What is the ethically appropriate role of genetic and mechanical engineering, for the manufacture and repair of human bodies? Where, finally, do we stand on this issue of culling? Should human populations be selected intentionally and not merely accidentally; and if so, how?

Second, consider the fuzzy definition of health recipients. Who are to be the beneficiaries of our health care efforts? With genetic research and genetic engineering, we become more and more aware of the fuzzy boundaries between humans and animals, between recognisable life forms and mere living tissues. What are our moral obligations to domestic animals, to experimental animals, to wild animals, to complex vegetation?

What about our obligations to machines? With the development of artificial intelligence, smart machines become less obviously different from people, at least in the thinking department. Will there be a time when we conduct census enumeration of our thinking machines, and tend to their healthcare as well? This unlikely prospect becomes more likely as soon as we learn how to make machines better at sensing themselves and reporting their internal sensations to outsiders - in effect, making them behave more like people.

We haven't yet dealt with the boundary issues connected with healthcare: essentially, who are eligible, who are not, and why not. This is a problem partly because of genetic engineering, and surgical procedures that use animal and mechanical products to sustain life in humans. In the future, more people will contain noticeably more animal, vegetable, or mineral makeup than they do today.

Third, consider the fuzzy definition of healthcare sites. As we have

already noted, there is occurring a progressive blurring of the boundaries between health-related and other activities in traditional health institutions. This is particularly marked where long-term care occurs, since these "total institutions" are entire social worlds for their residents. The blur is also increasingly apparent in traditional non-health institutions (e.g., families, schools, workplaces) where long term care - hence, medical intrusion - is required on a regular basis.

From the medical standpoint, this problem raises questions of how one might medicalise an outside, secular environment. This is very much like the imperial process of colonisation: going into a new, undeveloped site, taking charge, and re-jigging the social, cultural, spatial and other arrangements to achieve the conqueror's goals. From the standpoint of the colonised - the family members, school attendees, co-workers - the process is very different. It may mean a considerable rethinking of the goals and methods of the institution that is being invaded. What kind of a home will it be when the front room is turned into a sick room? How does this affect the family's social life, for example? What kinds of goals are attainable at school, or at work, when the traditional goals of learning, productivity, or profit making, must be moderated in light of ongoing healthcare needs for the resident students or workers?

Under these conditions, the boundaries between home, school, work, hospital, and other public institutions become blurred. The uses of time, space, money, and technology must be reconceived, each institution in relation to each other. This suggests that the 21st century will be an interesting time: a time to rethink what we mean by home, family, school, and work - and healthcare.

Finally, consider the increasingly fuzzy definition of accepted medical practice. Of course, medical practice has changed for thousands of years and it will continue to change. But change, as we have said, is speeding up, due to research, technological advance, and globalisation. Consider, for example, the rift between alternative and mainstream medicines. The alternative practices vary widely. Some, such as chiropractic, naturopathy and acupuncture use highly trained practitioners and are highly regulated. Research tells us that they work in some situations, and, moreover, tells us how and why they work. Other alternative practices require less training and receive less regulation. Likewise, many are not covered by existing healthcare plans, so people who can afford to pay for them independently mainly access them.

Part of this trend is a new discovery of traditional and folk remedies. It stands to reason that, in many thousands of years of human history,

earlier caregivers will have discovered and developed good means for dealing with local illnesses. Ethno-pharmacology has contributed a great deal to the modern pharmacopoeia of drugs that work today and have, in fact, been working for thousands of years. We already know we have a lot to learn from earlier civilisations and less economically developed societies. Is there any criterion, other than medical profession and insurance company acceptance, by which we can judge the appropriateness or feasibility of alternative treatments? What care recipients consider an acceptable treatment changes slowly and continuously; that is even truer of professional health practitioners. What is old is now, often, new, but there may be ways to speed up the process. We haven't yet figure out how to do that.

What Can Futures Studies Teach Us?

The problem facing futures researchers interested in healthcare is how to make the future less fuzzy. From this standpoint, the problem of healthcare is merely an example of a more general problem, which is how to foresee and operate on the future.

As you know from reading Wendell Bell's classic work *Foundations of Futures Research: Human Science for a New Era* (two volumes: 1997), the futures studies tradition provides us with a number of different ways to study the future of health and healthcare. Some are common-sensical, others more technical and less common (or common-sensical). First, we need to reflect on what we know about health and health care. That is what we have been trying to do in this paper so far: without much in the way of data or technique, reflecting on the issues in terms of what we already know. Second, and related to this, we can reflect on our ethical beliefs about health and health care. What do we as a society believe that we ought to accomplish or stay away from in the realm of healthcare?

A third tradition in futures studies is the practice of imagining possible and desirable futures. We cannot pursue a goal, and hope to achieve it, if we cannot imagine it. Of course, to imagine a goal and even to desire it may not make it come about. So, imagining is necessary, even if it is not sufficient. And this says that we all, from early childhood on, need to be engaged in thinking about what the "Healthy Society" might look like. What do we think a healthy life might include, and how can we organise our lives, families, workplaces, healthcare services, and even our total societies, to bring us a few steps closer to this ideal. Asking this

question will get us thinking more collectively, for the achievement of a healthy society is by its nature informed by history, politics and economics; by conditions around the world; and by ecological and environmental conditions.

A fourth tradition in futures research involves projecting the most probable futures. A lovely, and rarely read example, is H.G. Wells's *Anticipations*, a book written in 1900 to foresee the likely evolution of the newly arrived twentieth century. In this task, Wells does much better than pure chance. Where his predictions fail, they do so not because Wells thinks too big and expects the outlandish to happen, but because he thinks too small. Wells fails to imagine the technological advances of the second half of the 20th century. Up to 1950, he does pretty well. After 1960 - with the birth control pill, nuclear energy, computers, American world dominance, and economic globalisation - all bets are off.

Projection is a simple technique, founded on the notion that our best bet about tomorrow is that it will be like today. A bit more refinement leads to the supposition that tomorrow will be an average of today and yesterday (and maybe, if we get really clever methodologically, a weighted average of today and a great many yesterdays). Today, we have the tools and the data to view historical trends clearly, and we can begin imagining the future as a time and place that is like today but "further along" in the same way that today is further along some dimension than yesterday.

Most projection of the future, therefore, is linear projection, but it doesn't have to be. The less linear and continuous our models, the more likely they will be correct. The flaws in linear projection can be made immediately obvious in either of two ways. First, consider forward projection. Take any time series of data for the last twenty years and project it ahead one hundred years. Ask yourself what social changes would be needed to accommodate the resulting prediction, and whether these changes are feasible under foreseeable conditions. Usually, the answer is "No." Second, we can accomplish a similar goal by backward projection. Take any time series for the last twenty years and project it backward one hundred years. Go into the data library and find out whether this method has reproduced what was actually going on 120 years ago. Again, usually the answer is "No." Both "experiments" tell us that change is rarely linear, and change rarely occurs one variable at a time.

Projection is still a problematic - though common - method, and

probable futures have the risk of turning into imagined or even desired futures. The mere fact that something is likely has, too often in human history, made it inevitable. We need to anticipate probable futures so that we can embrace them, if we want them to happen, and prevent them, if we don't. We need lots of time to "turn the boat around" if we want to guide Planet Earth in another direction. So probable futures are a useful piece of knowledge. We need to strive for better information about the probable futures of health and healthcare and, particularly, need to develop better tools for understanding and modelling these futures that are sensitive to local variations.

A fifth approach of futures studies is to use probable futures to understand the past. This method has been used to good advantage by very clever people: for example, by Michael Young in *The Rise of the Meritocracy*. When we imagine a future - whether it is desired or feared, considered more or less probable - and then we try to imagine how we might have gotten there and the reasons why, we learn a great deal about what makes a difference in the present. To take the current example, imagining a future "meritocracy" teaches us several important things. First, a meritocracy is probably not fully attainable, no matter what we do. Second, it is probably not a panacea for the social inequalities we currently endure. Finally, it produces new problems which may be as bad as the ones we currently endure.

This example seems to imply that this fifth method of futures research is inherently cautionary and even conservative. That is not necessarily the case. However, this approach does sensitise us to the fact that societies are social systems in which changes in one sector or dimension bring about often unintended and unwanted changes in other sectors or dimensions. We ignore this fact at our peril.

A sixth approach involves advocating particular images of the future. Futures researchers tend to be internationalists and activists, of however a quiet and pleasant variety. We do not study the future merely to appreciate its interesting and ironic qualities. We do so also in the hopes that we can make the future better than the present and better than it would naturally be if we were to do nothing. So, once we have used other methods to foresee the future, we often advocate particular futures which seem, on the basis of our research, to be particularly desirable. We like to think that this type of activity is also a form of research, and not merely politicking. If we are unable to persuade opinion-makers, decision-makers and members of the public of the merits of our preferred future, then we may be misperceiving the future after all. We may

be “seeing” a future that will never occur, is currently taking place in a parallel universe, or cannot occur in our world just yet.

A seventh approach of futures studies that follows on the heels of the sixth is the design of new social policies. Social policies are the means by which most futurists prefer to achieve preferred futures. The making of social policies justly can be criticised as too gradual and slow, too piecemeal, too pragmatic and open to politically motivated compromise. These criticisms are all valid. However, an examination of the alternatives leads us to the conclusion that, although social policy-making is a terrible way of getting to desired futures, it is better than any of the alternative methods. Accordingly, futures researchers study social policies that exist around the world, to find out whether these policies achieve the desired results, and to learn the conditions under which these policies can be modified for use in the home country.

What These Approaches Suggest

The length of this paper dictates that we must now be nearing the end. However, the logic of the paper dictates that we are still near the start. We are, logically, just about ready to begin applying fuzzy thinking and futures research tools to the issues of health and health care. In the interests of both exigencies, we will say a little, but only a little, about everything.

First, the fuzzy goals of our health system need the attention of futures researchers. Never has it been more necessary, or more sensible, to try to think through what a “healthy society” or a “healthy life” might look like, and how we might begin bringing about this future. Most of us in the industrial world can bank on a good eighty or so years of life, at least sixty or seventy of which will be without major activity limitation. Even if life spans do not increase, we know how to increase our person-years lived without any major limitation (chiefly, by controlling smoking, improving lifestyles, and reducing unnecessary risk-related injuries in traffic, at home and at work.). Population health research tells us which groups are at the greatest risk.

Unfortunately, much of what has to be done ultimately comes down to social inequality. Not only poverty and poverty-related social conditions, but inequality itself, leads to higher risks of mortality and morbidity. As futures researchers concerned with health, and as humans, we need to think deeply about the future of inequality and how we can

influence it. This is the hardest problem we may have to face.

Second, consider the fuzzy definition of health recipients. There is no research that will help us decide where to set the boundaries that define which people are deserving of healthcare, and which people (and non-people) are not. Societies in the past and present have varied in where they set the boundaries for easy access to quality healthcare. Some societies, like Canada's neighbour to the south, the United States, leave healthcare to the marketplace, so that people with more money, and better jobs, get to lead healthier lives. This relieves Americans of thinking about how one might set the boundaries more purposively. Once the market takes over, good health is mainly a matter of cash and randomness. "Merit" and "need" don't have to play a part.

In some historical societies, very few people had good healthcare and even they - the very rich, powerful and privileged - had poorer healthcare than a middle-class urban Canadian today. Then, good health was not an issue worth discussing because it was scarcely attainable. The technologies, medicines, and treatments - the know-how - was not in place. These people were also relieved of thinking about how to set the boundaries for good health. As a result, we who are living today are faced with a relatively new problem and little guidance as to how we might approach it. Futures research can help us mainly by leading us to imagine different scenarios of the future, and considering how to reach the one(s) we favour.

Third, there is the fuzzy definition of healthcare sites to consider. Gaining clarity in this matter means re-thinking what we mean by family, work, school, and health: what are the goals of these human institutions, and how much are these goals tied up with particular forms? Can we accomplish the essential features of work in ways that are nothing like our current workplaces? Can we enjoy the pleasures of "home" in less traditional, confining, or uniform fashions? Can we teach and learn as effectively if schools have even more societal functions - for example, as places of healthcare - that they do already?

And, if we conclude that the social functions these institutions perform require a small range of forms, and we cannot really go far beyond those forms without destroying what the institutions do for us, then we will have learned something important. Then, it will be clear that there are, indeed, limits to what a family, a workplace, a school, can bear. It will not do for governments, employers, or rebellious taxpayers to download more social responsibilities on to the backs of our major institutions, with the supposition - in fact, the insistence - that they find a way to

make do under new circumstances. Perhaps families, for example, are capable of taking on the task on significant healthcare in the home; but perhaps they are not. We have to find this out if we are to chart a workable future.

Finally, we want to examine the fuzzy definition of "acceptable" medicine. Regulated, professional healthcare - as practised by licensed medical doctors and nurses, for example - has benefited humanity. The risks of harm are great when someone tinkers with our bodies, so we want our "body repair technicians" to be reliable and highly skilled. For their part, health professionals want to protect themselves, and their practices, against accusations of fault. This is appropriate. However, there are also needlessly conservative tendencies in all organised bodies: tendencies that favour professional self preservation and a reliance on the tried and true, even when this may not be fully necessary for the well-being of patients.

As students of the future, we want to encourage the ability of health institutions to adapt to researching and teaching new styles of healthcare. We want to discourage territoriality and parochialism. This will not only benefit the patients of North American health professionals, who can afford to pay for a variety of costly and inexpensive treatments. It will also benefit the citizens of less affluent countries for whom cost-effectiveness is an even more pressing issue, since the health problems are more severe and the tax base is smaller.

An Application

Some practical suggestions follow from these observations on health care in the future, and many of them lead in the direction of increased attention to, and research on, home care. We will dwell on this topic because this is the area of health related research that is most familiar to us and closest to our own work on families.

All foreseeable trends in health care operate within the context of home care. Thus, home care exemplifies flexible, innovative, and continually changing health care. Under the right conditions, home care will prove - in the future - to be a key element in achieving flexible, high-quality health care around the world. This suggests that technology, and technology education, have an ever-greater role to play in health care delivery. One approach to achieving these benefits is through future-oriented Home Care Institutes, which might incorporate the

following:

- A Global Health Monitor - a clearinghouse for information on global trends in health care and health planning, with an annual publication - **HEALTHY WORLD** - focussing on home care trends around the world.

- A National Health Survey - within each country, an annual national survey of well-being, activity limitation, access to health services, treatment received, and satisfaction with treatment, producing an annual publication - **HEALTHY HOME SURVEY** - that focuses on home care trends.

- A National Health Index - with the data from the survey and frequent updates an index measuring our ability to reduce disability and improve the quality of life could be distributed in - **A HEALTH INDEX QUARTERLY UPDATE** - like the updates to the economic data.

- A Home Care Inventory - a clearinghouse for results of research on (a) new treatments, (b) new technologies, and (c) program evaluations, supporting an online electronic journal - **HEALTHY HOMES MONTHLY** - that focuses on home care trends.

- A Home Care Grants program - the **HOME CARE TOMORROW PROGRAM** - to seed-fund innovative (a) pure research, (b) program evaluation, and (c) the development of new patentable technologies and techniques in relation to home care.

- Traineeships - **HEALTH INNOVATION TRAINEESHIPS (HIT)** - to support dissertation research on topics related to trends and developments in home care and other innovative health care.

A second approach to facilitating change is the creation of a Patient Resource Inventory System (PRIS). This would use the internet and computer technology, plus network sampling techniques drawn from sociology, to ensure that all health and service providers have access to timely, complete and accurate information about every service recipient. Information available on the system would include complete medical, economic, and social data that are relevant to ensuring that a sick, dis-

abled or frail elderly person receives immediate, appropriate attention from members of his medical, familial or social network.

What is critical in the development of Home Care Institutes and Patient Resource Inventory Systems is that they (a) can be implemented in low-income countries, as well as high income countries, (b) can change continuously with advances in technology, medical knowledge, and social science understanding of health and health care.

Conclusion

What have we learned about futures research from this exercise? There is still no magic formula that enables us to predict the future, much less ensure that it turns out the way we want. At best, futures research gives us a set of tools, concerns and questions for thinking about topics that concern us - whether they are healthcare, families, inequality, education, or otherwise. There are no simple technological fixes for any of these problems. All of them will require planning, support by the powerful and the population at large, and massive spending.

What futures research brings to the table is a style of thinking that is particularly appropriate for "big" problems - problems that are interdisciplinary in scope, global, and take a long time to study and resolve. As I said earlier, futures researchers tend to be internationalists. They are also cross-disciplinary thinkers. Most important, they are optimists: they assume that solutions can be found to human problems, through the application of research-based knowledge. Without this optimism, there is no future, no humanity, and therefore, no problem to solve. We hope our comments have shown that there are still some problems to solve.

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