Entrenched Health Care Practices and Complex Systems

I have been asked to write about entrenched health care practices and why they make change so difficult in the health field. In this paper I would like to explore several aspects of this issue in Canada, the UK and Australia; examine some of its origins, look at how it manifests itself today and what might be done about it. I have written this short paper with others in the Clinamen Collaborative who will share the authorship with me.

Sholom Glouberman

The idea of professional enclaves in health care goes all the way back to the earliest recorded accounts of health care in the Western tradition. In Mesopotamia health was linked to the will of the various gods and spirits (Biggs, 1995). A large number of cuneiform tablets have given us at least a partial picture of health related activity there as far back as 2000 BCE. The Mesopotamians linked diseases of a particular organ to the action of gods associated with that organ. There was a god of the liver, and a different one for the eye and the heart. The *ashipu* - a priest/medicine man - would diagnose an illness and decide how to placate the god or gods involved. Usually he would make a specific offering to a particular god in order to achieve a cure. (The *ashipu* as priest-doctor had both public and secret knowledge of these interventions and no doubt the mystery associated with privileged techniques was an effective aid to cure even then.) But there also existed another kind of healer, the *asu,* who would administer herbal remedies, apply poultices and perform surgery. The *asu's* techniques included primitive

but effective antiseptics and his medicated bandages were reasonable treatments for open wounds.

Hammurabi's Code provided for the rewards and punishment for surgical procedures as preformed by *asus*. The code regulated fees for surgical success; and punishments for failed surgical procedures included the amputation of an unfortunate surgical hand or an even more tragic loss of the surgeon's head. We would venture to guess that these particular parts of the code were adopted after some lobbying by the dominant *ashipus*.

As the number of different kinds of health practitioners has grown exponentially, the rivalry among them has diminished only slightly. In Australia the Royal Melbourne Hospital list more than one hundred clinics led by physician specialists, some of whom have themselves become the gods of the organs they treat (Royal Melbourne Hospital, 2005).There are now physicians for the liver, the eye or the heart. And we pray to them for a cure.

This differentiation occurs not only inside medicine but also in other health related professions. In the United Kingdom the Royal College of Nursing web site declares more than one hundred different "specialisms" including four in community nursing for children, as well as such areas as incontinence, wound treatment, and surgical support. (Royal College of Nursing, 2005). In addition, physiotherapy in the UK ranges from practitioners who specialize in working with children with neurological difficulties to those who support elite athletes (Chartered Society of Physiotherapists, 2005). Similar expansion has occurred in the differentiation in health related publications, service

delivery organizations and research enterprises. A brief survey of health related agencies in one part of Toronto, Canada suggested that there are more than three thousand of them. Very few advocate cutting each others' hands off, but they do compete for status and limited resources. And some have become dominant.

One source of the differentiation among health providers is the division of labour in the acquisition of knowledge in health care. There are those who spend their effort on understanding herbal remedies while others develop surgical skills. Each of these activities can become completely consuming. And this division of effort has benefited all areas of health care by concentrating knowledge and skills about particular conditions and treatments in the hands of those who are dedicated to them.

Differentiation also results in the need for integration. In general, the greater the differentiation between different components of clinical practice, the greater the need for integration of the entire process. Without such integration clinical services become fragmented with increased gaps, needless rivalries, duplication of effort, and more frequent mistakes. In the current state of affairs in the health field the differentiation of knowledge and skills has occurred without adequate integration and resulted in varying degrees of fragmentation. (Glouberman & Mintzberg, 2001a).

The puzzle is to try to understand why so little integration has occurred in the health care system, why it has become so fragmented. At least part of the answer may come from asking some questions like the following: What keeps different groups like specialist doctors, nurses, managers so deeply entrenched in their separate positions? What does this entrenchment mean? Do they feel more comfortable in the trenches? If it is a defense

mechanism, what do they defend against? Are they defending themselves from attacks by outsiders? Or like World War I soldiers are they in trenches because they have been conscripted into a circumstance that is not of their own doing?

We must explore some of these questions and think about how to remedy the situation. More specifically we must think about how to increase collaboration and cooperation amongst these entrenched groups, to foster a stronger recognition of our interdependence in order to increase our capacity to collaborate and improve the coordination of patient care.(Glouberman & Mintzberg, 2001b)

We believe that health care systems function much like *complex adaptive systems*. Such systems are distinct from mechanical or electrical *complicated* systems. For example, the electronics of a personal computer can be said to be *complicated*, while the impact of the introduction of the personal computer on society as a whole can be seen as *complex*. An individual computer might possess hundreds of individual parts, and even millions of switches, but in general these parts have identifiable and limited interactions with each other and with the software used. The startup procedure is linear and sequential. Many computer parts are entirely independent of each other. One can, for example, change the hard drive without worrying about unexpected alterations in the behaviour of the battery, or change the video display without affecting the keyboard.

By contrast, the massive and unforeseen social consequences of the rise of the personal computer can be seen as *complex*. Not only did it change personal productivity, but it also produced other somewhat unexpected changes. New industries were spawned like those associated with computer games and search engines. Dramatic and ongoing changes

materialized in existing industries from banking and bookselling to film and music. The rapid delivery and sharing of information and ideas through the personal computer has had, and will continue to have, unexpected consequences to national and international politics, culture and even health. For example, sedentary computer-related activity has increased the risk of obesity among children and youths and repetitive strain injury among adults.

While the electronic system of an individual computer may require a relatively complicated account in order to predict how it will function, the way in which personal computers interact with the social, political, and cultural environments produced effects that continue to be massive and, in many cases, unpredictable. Health care systems are complex largely because they include interactions among many different groups of people with highly differentiated knowledge bases and values that result in often unpredictable consequences to innovation.

A pervasive health policy mistake in recent years has been to consider health care systems as complicated when they are, in fact, complex. Many efforts at health care reform consider health care systems and organizations to be built in much the same way as a computer or even a car. If all the pieces can only be put together properly then the system would function. The result has been the restructuring of health care systems in many countries. In many parts of Canada hospitals have been merged with each other and/or with community agencies, in an effort to "integrate" health care organizations in a given area into regional organizations. This regionalization in Canada is in sharp contrast

to approaches to the same problems in England where hospitals were receiving independence as trusts and being de-regionalized. Similarly, at the same time as insurance purchasers and hospital providers were being integrated into Health Maintenance Organizations in the United States, the UK was severing the previously close connection between funders and service agencies by creating a purchaser-provider split. It seems that there is no universal structural solution to health care integration.

A second mistake is to confuse structural integration and the integration of the actual delivery of services. This is easy to see in hospitals, which although they are single organizations, often have fragmented and somewhat disconnected services. This fact is ignored in many reform measures which continue to locate services in the same organization or to merge the services into single "programs", imagining that such structural changes would by themselves do the job of improving the coordination of patient flow. The failures of many forced mergers in health care, the costs associated with often dismal and unhappy efforts to introduce "program management" are then presented as the resistance of entrenched forces to change.

Most of the efforts to "reform" health care systems have been to integrate services which are seen to be excessively fragmented. Much of the talk about "the right service at the right time and place", and about "seamless delivery" is in response to a similar kind of mistake: the attempt to reduce all health care interventions to measurable industrial tasks. The notion that there can be rigid protocols for nursing interventions, like there are for cooking hamburgers at McDonalds, making beds in a hotel, or assembling cars on the line is to confuse *complex* human interactions with *complicated* mechanical procedures.

The non-reducibility of many human interactions to recipes and formulae does not mean that they cannot be done well. It only means that they cannot be done by rote. Just as there are no complete recipes for raising a child, there are none for determining all provider-patient interactions. A physiotherapist at a conference once said that she was retiring early because she could not live with the consequences of the formalization of her community based interventions. She used to see patients with particular conditions as long as they needed her. Most needed about six visits; some needed only two and a few had to be seen ten or twelve times. The development of "best practice" protocols for her area by expert academic physiotherapists meant that she had to see all patients with that condition no more than six times. An unexpected consequence was that her patients no longer trusted her. They felt that she was working by rote. She found that she had to spend the first three visits engaging their trust and three more visits to treat them. So she decided to retire. Are we to believe that the problem was her resistance to change?

Complex systems are extremely sensitive to changing conditions. There are many examples of rapid and unexpected change in health care systems, as in other complex adaptive systems. The rapid and completely unexpected success of GP fundholding in the UK during the period of the Thatcher reforms in the early 1990s is one example. The then minister of health thought that it might be a good idea to offer general practitioners a relatively small amount of money to pay for elective procedures. Experts who heard about this at the time thought that it was an irrelevance - that no GP would adopt it and the initiative would pass unnoticed in the wake of the development of large district purchasing organizations which would hold the vast bulk of the funding. In the event, the purchasing organizations rapidly converted into performance managers, using

hierarchical clout rather than money flow to control hospital behaviour. (The current situation in England perpetuates this. Primary Care Trusts which now have the money exercise little control over hospital activity and budget, while Strategic Health Authorities, with no money exercise powerful hierarchical control over both PCTs and hospitals.)

On the other hand, GP fund holders dramatically changed the dynamic between hospital based consultants and GPs. The telling joke was that before GP fundholding GPs would send Christmas cards to hospital surgeons so that they would be remembered and their patients well-treated; once GPs had the money, the surgeons began to send cards to the GPs to get patients. Similar unintended and fairly rapid changes have occurred as a result of other seemingly careful and measured interventions. . The stampede to gain Trust status by UK hospitals was unexpected and forced a revision of scheduled changes in the early 1990s when the local unit managers saw the chance to become chief executives. In the United States, the introduction of Diagnostic Related Groups (DRGs) had an unexpectedly rapid consequence in reduced hospital lengths of stay when physicians recognized the economic opportunities resulting from faster patient turnovers

Because health care systems are complex it is not possible to develop effective formulaic recipes for predictable changes in them. Yet efforts to find set structural answers persist. This may help explain the widespread perception of resistance to change.

There are many examples of reform disasters that resulted from formulaic interventions. In Ontario, Canada the government in its wisdom decided to *do* something about the oversupply of hospital beds. The obvious solution was to close some of the hospitals. It

wanted to do this fairly and it also wanted to recoup the excessive cost of hospital services. It then established a Restructuring Commission, which in turn hired a consulting firm to develop a methodology for their studies. The Commission then applied the following self-explanatory methodological steps as chapter headings for each institution they studied. 1: Determine Net Expenses; 2: Calculate Program & Related Transfers; 3: Calculate Clinical Efficiency Savings; 4: Determine Support Service Efficiencies; 5: Re-allocate Other Expenses; 6: Calculate Site Closure Savings; 7: Determine Administrative Efficiencies; 8: Add back Selected Expenses; 9: Establish the Cost of the Reconfigured System. The result was a series of mergers and hospital closures that destabilized the system, and resulted in no savings to it. Some of the mergers never succeeded and are now beginning to unravel.

This formula is yet another excellent example of the mistaken attempts to treat complex systems as merely complicated. Although one might speak of resistance to change here, as if it were a kind of passive intransigence, the stakeholders of hospitals under threat of closure thought of themselves as joining the Resistance – a righteous response to a change that would bring about the loss of a very valuable institution. The Restructuring Commission elicited very rapid change – it brought powerful defensive forces into play. In Toronto the response to a forced merger between the feminist Women's College Hospital and Sunnybrook, a former Veterans Hospital, has continued for ten years. The costs have been high in terms of morale, efficiency and management burnout. Today many believe that demerger will come (at further cost).

Other mergers like those in the University Health Network between the Toronto General Hospital, The Toronto Western Hospital and Princess Margaret Cancer Hospital, have settled into uneasy confederations, retaining their separate sites and placing a chief executive on each, thus adding yet another management layer and increasing costs. The projected savings were never achieved. Indeed costs of managing an unhappy organization full of internal splitting and rivalry is greater than for three separate ones.

The question then is what can help us respond to entrenched practices that appear to be resistant to any change at all? We cannot provide a manual to deal with this kind of situation, but we can present four suggestions for moving forward.

1. Accept that we will not find a formula or recipe as a solution to our complex problems. A comprehensive manual is not in the cards. This is hard to accept because we are inclined to seek general and replicable answers. We must constantly remind ourselves that we have tried to find formulaic answers and most have failed. Yet we persist in this effort with the desire for replicable solutions, standardized protocols, organizational re-engineering and so on. As a result we continue to treat the complicated aspects of the system and to ignore its complexity.

2. Recognize the current need for stability in the health field. After the reforms of recent years, many health care systems remain unstable. Unstable environments are even less predictable and less manageable than stable ones. Most attempts at reform initiated major structural changes and then introduced new ones before the first set had a chance to settle. In many cases, nurses lost permanent employment and become jittery without job security. Then rehired part time, they remained insecure and unhappy. We have thrown

our cards in the air and then turned on a strong fan to keep them from landing. Therefore we should stabilize our health care systems as much as possible. This can be done perhaps, by providing job security for our nurses and paraprofessionals, assuring adequate income for doctors and stabilizing funding for health care institutions and services.

3. Spend enough time to understand local conditions and to respond to them. Find out what is valuable in a particular institution or service. Build on what already works to achieve what we want. Examine the situation of each professional group: identify their current assets and the pressures they are under. Think about what they would most like to see and create a path of least resistance for them. Consider the possibility of moving things in that direction while achieving other health care goals.

4. Introduce relatively small interventions. Make small changes in stable environments to build on local strengths. It is logical to seek the smallest and most local intervention to effect change. Though there is no assurance of success in smaller initiatives, there may also be a much smaller price to pay for failures. These opportunities vary between situations, but they can include such things as rewarding and increasing the profile of programs where good collaboration is evident, providing the kinds of development opportunities that are sought by staff, introducing in-house opportunities for the development of new programs that work across the various boundaries of specialty and discipline.

At the end of our paper we return to the initial topic. We might conclude that the entrenchment of particular professional practices is stronger in less stable environments

where the professionals who provide the services feel that they are under threat. Stabilizing their environment, reducing the overall threat, and instituting relatively small changes that respond to local conditions can help them emerge from their defensive enclave in order to collaborate with colleagues and improve their practice.

The Clinamen Collaborative

Sholom Glouberman, PhD

Murray Enkin, MD

Phil Groff PhD

Alejandro Jadad MD

Anita Stern RN

November 28, 2005

References

Biggs, R. (1995). *Medicine, surgery, and public health in ancient mesopotamia*

Chartered Society of Physiotherapists. (2005). *Clinical interest and occupational groups.*

    http://www.csp.org.uk/director/groupandnetworks/ciogs.cfm

Glouberman, S., & Mintzberg, H. (2001a). Managing the care of health and the cure of

    disease - part I: Differentiation. *Health Care Management Review, 26*(1), 56-69.

Glouberman, S., & Mintzberg, H. (2001b). Managing the care of health and the cure of

    disease - part II: Integration. *Health Care Management Review, 26*(1), 70-84.

Royal College of Nursing. (2005). *Specialisms.*http://www.rcn.org.uk/specialisms/

Royal Melbourne Hospital. (2005). *Outpatients*

    *clinics.*http://www.mh.org.au/Royal_Melbourne_Hospital/DEPARTMENTS/O-

    R/Outpatients_Clinics/