Chapter 1

Current Practices in Select Healthcare Systems

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ABSTRACT

In this chapter, current practices of healthcare delivery in three economically advanced countries will be reviewed. Is healthcare delivery commensurate with economic prosperity? Countries with technological and economic advantages may be better poised to deliver healthcare efficiently. However, this is not the case in fact. The following review will show that medico-legal and technological prowess may not translate into a healthier life and better healthcare delivery. It will be argued that poor allocation of ample resources is tantamount to resource insufficiency. The chapter will cite anonymous but true cases of patients to illustrate the salient points.

INTRODUCTION

In this chapter, current practices of healthcare delivery in three G8 countries will be reviewed. Does economic prosperity lead to a better quality of delivered healthcare? Countries with technological and economic advantages may seem to be better poised to deliver healthcare efficiently. However, this may not be the case in fact. The following review will show that medico-legal and technological prowess may not translate into a healthier life and better healthcare delivery. Distribution of wealth does not necessarily correlate with the distribution of health. It will be argued that poor allocation of ample resources is tantamount to resource insufficiency.

In the attempt to provide improved healthcare for its citizens, many of the G8 countries have tried everything in the spectrum from a publicly funded healthcare system to a fully private system. Common to all these are the intimidating waiting lists for doctors’ appointments or surgeries. Some may argue that a waiting list is an inevitable byproduct of an economically efficient healthcare system. Patients who are deemed to be surgical candidates are obviously quite ill and possibly in pain. If you ask such a patient if a waiting list is acceptable,

DOI: 10.4018/978-1-60566-772-0.ch001
the answer would be a resounding rejection of such a concept.

The issue at hand is more than an argument about what constitutes a welfare system. The concept of economic efficiency in healthcare is a red herring. To be efficient from an economic standpoint may not be the same as efficiency in the distribution of healthcare. One may argue that a competitive market resulting in economic efficiency may result in a distribution of wealth with people holding extremes of wealth or poverty. Inequities in health distribution may be a similar outcome of an economically efficient system. The United States of America is an example of this disparity in healthcare. There can be no such tradeoffs in healthcare. In an efficient healthcare system, one cannot accept a dichotomy with some people having ready access to healthcare and some having none. The existence of such a state of society is, admittedly, a failure of the healthcare system. Society must see to it that the last person who needs healthcare receives it.

Some may be quick to interpret this as an advocacy of socialism. In truth however, there is no such thing as socialism in healthcare. Socialism is an economic concept. Wealth distribution is an economic concept. But an equitable distribution of healthcare is as much a necessity as the distribution of oxygen. Everyone ages and every aging person is a potential healthcare consumer. Healthcare is a prime example of market failure. Therefore the allocation of healthcare by free markets is inherently inefficient. The reason a market for healthcare fails is due to (a) the existence of externalities discussed below and (b) the existence of transaction costs and asymmetric information. President Barrack Obama and Secretary of State Hillary Clinton have both strongly emphasized the philosophy that “every American has the right to affordable healthcare” during their 2008 presidential campaigns. Yet a waiting list is a denial of that essential service of healthcare.

In such a context what is a surgical or patient care waiting list? One may have a society where all its citizens have access to healthcare but are placed in a waiting list to see their doctor or to receive appropriate surgical intervention. How does this differ from a society where some have immediate treatment of their illnesses and some do not? The emergence and establishment of surgical waiting lists must therefore be considered a cost to society due to pain and suffering of those waiting patients. The impact on the patients’ quality of life and society’s productivity is obvious. In the written words of the Supreme Court of Canada Chief justice Beverly McLachlin in the 2005 Chaoulli v. Quebec (Attorney General) case, “Access to a waiting list is not access to healthcare.”

Consider, for example, patient D.L. from Canada who has a brain tumor compressing on her optic nerve. She was virtually blind in one eye and was losing vision in the other. She was placed on a waiting list and it took several months for the surgery to decompress the tumor. On the day of the scheduled surgery, she was “bumped” and the surgery was cancelled due to unavailability of beds. One month later, her vision now worse, she was taken to surgery emergently. As another example, in the specialty of ophthalmology, the mean waiting time for cataract surgery in Canada was 17 weeks in 2005 (Conner-Spady, B.L., Sanmugasunderam, S., et al., 2005). Patients in the U.K. have had to endure long waiting lists for surgery, some as long as six to nine months (Martin, R., Sterne, J.A.C., Gunnell, D., et al., 2003). Even in the U.S. with a mostly private healthcare system, waiting lists are not uncommon (Hurst, J., & Siciliani, L., 2003).

How then do these waiting lists emerge? Can anything be done to improve such a system which tolerates the pain incurred by waiting patients in stark contradiction to its mission to care for the health and suffering of its citizens? In the Supreme Court of Canada judgment (Chaoulli v. Quebec, 2005) above, all justices of the Supreme Court agreed that such delays can affect the patient physically and psychologically and may cause irreparable harm.
This chapter will compare the healthcare systems of Canada, the United Kingdom and the United States of America. The purpose of this comparison is not only to understand the genesis of surgical waiting lists in economically advanced countries, but also to find solutions by increasing efficiencies in existing allocation of resources rather than additional capital investment. For example, it is seen in what follows that increasing capital expenditures or hospital capacity does not strongly correlate with improved healthcare status in the U.K. but it does in the U.S. This is possibly related to the way the healthcare system is financed.

Canada

An attempt at universal healthcare was first legislated in Canada in the province of Saskatchewan in 1946. This eventually led to the Medical Care Act in 1966, which provided a framework for each province to offer a universal healthcare system. The success of this led to the Canada Health Act of 1984 and a commitment by the federal government to support the well-developed healthcare system predicated on the principles of universality, portability, comprehensiveness, public administration and accessibility (Lewis, S., Donaldson, C., et al., 2001). Thus, the government insures every Canadian and this insurance is portable anywhere in Canada. The Canada Health Act requires that every hospital and physician should be financed only by the government with no individual user charges. In addition, there cannot be any third party coverage for these services nor can a hospital or physician accept third party insurance for their services for Canadians. The fiduciary responsibility of healthcare delivery is relegated to individual provinces. However, there is a complex revenue sharing agreement between the federal government and the provinces that serves as a financial spigot, which can be turned off if individual provinces do not abide by the Act. This could potentially threaten the transfer of funds from the federal to the provincial government should a province choose to accept third party insurance or charge extra billings to patients.

Year after year the federal government sits with the provinces to renegotiate the transfer payment agreements. The little band-aid changes to the transfer agreements negotiated during these meetings did not do much to fundamentally alter the efficacy of healthcare delivery. Population demographics was changing with time and the healthcare budgets were falling behind unable to respond to these changes. Eventually, there was a stagnation in the real amount of spending for healthcare in the provinces leading to nation-wide reviews of the healthcare system. This led to a series of reforms, most notably, a decentralization of healthcare budgetary decision to regional health boards (Province of Alberta, 1994).

The key requirement in the Canada Health Act is that physician and hospital services be 100% publicly financed. But the provision of these services can be private. Doctors need not be government employees. Hospitals are non-profit corporations. However, there have been some recent developments in several provinces that have to be considered in assessing their impact on patient waiting lists. (Figure 1)

The Canada Health Act governs the financial conduct of hospitals and physicians. With an aging population, there has been an increase in the relative financial outlay for prescription drugs and community care. The latter is not under the purview of the Act. For example, in 1971, the median age in Canada was 26 and in 2001 it was 37.2. In addition, the percentage of people over 65 years of age is expected to grow from 8% in 1971 to 26.5% in 2051 (Statistics Canada, n.d.)

Second, the federal and provincial governments seem to have done little to respond to changing demographics and increasing demands on the healthcare system. The regionalization system appears to have divided the accountability for patient care between the provincial governments
and the regional boards. Thus, if a patient in Saskatoon needs urgent medical or surgical care of a certain kind, the regional boards seem to have no moral responsibility to provide that and, in fact, may be better off sending the patient to another province or to the U.S for that care. Patient care costs for medical care received in another province are borne by the province, not by the regional board. The way the incentives work, regional boards may as well have more services rendered to patients from outside the province and thereby use their limited resources for their immediate needs. In the economics literature this is a classic problem of what is known as ‘externalities.’ The best examples of these inefficiencies are derived from the polluting factory. Consider a factory that produces computer hardware. Supposing the firm installs a production process by which the chemicals used in the process of etching circuit boards and microprocessors are washed away and deposited in a nearby flowing river. Or, for that matter, pollutants may be released underground and thereby pollute the water table. In either case, the cost of polluting the river or
the water table is not borne by the factory. It is indeed borne by downstream fisherman or those who consume that water. Since those costs do not enter the balance sheet of the polluting company, its production decisions, which are guided by its costs, are completely blind to the enormous costs imposed on others. Such myopic decision-making by firms are rectified by taxing the firm for it’s output so that the costs of cleaning up the river or water table is seen by the firm as a tax. This will enter its balance sheet and thereby affect its production decision. Such a process is called “internalization of costs”. The costs of certain decisions taken by the health boards are not borne by the health boards but accrue to the governments and the patients. Excess use of carbon-based fuels and resulting high pollution levels is another example of externalities and wrong production decisions. In the context of Canadian healthcare and the recent regionalization, these externalities must be internalized. One possible approach to achieve this is by imposing an actual or implicit tax on the regional health boards for patient pain and suffering from waiting lists. The problem, however, with this approach is that health boards are not for-profit organizations and such taxes will do little to internalize the externalities.

The next approach to rectifying the problem of waiting lists is to view the situation from another perspective. The literature on Game Theory has looked into the problem of incentives in complex contracts under asymmetric information. One of the most popular theory is the principal-agent model. In these situations, one individual (the principal) contracts with another individual (the agent) to undertake a task whose outcome will affect the welfare of the principal and when the principal lacks information about the efforts or production process known only to the agent. In the context of Canadian healthcare, the Federal government is the principal who hands over a sum of money to the agent who is the provincial government who has to undertake the task of providing healthcare to its citizens. The Ministry of Health in the provincial government then pays its agent (the regional health boards) to deliver healthcare. So one has to examine the incentives to perform in a model where there is one principal-agent relationship (Federal Government – Provincial Government) and this, in turn, results in another principal-agent relationship (Provincial Government – Regional Health Board). The final output affects the welfare of the patients. The broader questions is: how can one structure incentives at all levels so that the healthcare is delivered with efficiency and patient welfare is maximized? This question and its solutions have been well-addressed by “Contract Theory”. In their book on Economics, Organization and Management, Milgrom and Roberts (1992) develop the conditions for designing an efficient contract. One of the conditions is called the “informativeness principle”. This states that any measure of performance that reveals information about the effort level chosen by the agent should be included in the compensation contract. Hence, waiting lists and underemployment of specialists are clearly monitored data. By including them in the Federal transfer of funds for healthcare, the two agents are given the proper incentives to reduce waiting times and hence patient suffering. Thus, if Federal transfer of funds are sensitive to patient waiting times and availability of specialists, then Provincial governments and regional health boards will find ways to reduce those waiting lists and provide an adequate supply of specialists for the patients. Short waiting lists should be rewarded with higher levels of funding while long waiting lists should trigger decreased funding. While this sounds counter-intuitive, the incentives it provides in a principal-agent setting will nevertheless achieve efficiency in healthcare delivery.

There is also the issue of strategic representation or misrepresentation by regional health boards with the current incentives. Larger waiting lists will provide sufficient rationale for the health boards to request a budget increase. If the Provincial and Federal governments award such
an increase, pursuit of higher budgets will result in increasing waiting lists and chronic shortage of specialists.

Finally, in some provinces, marginal privatization has developed. Day surgery clinics have sprouted that offer surgeries for which the patient does not require hospital admission.

How then do these factors affect healthcare delivery in Canada? First, in contrast to a market driven healthcare system, a public healthcare system ignores the realities of demand and supply. Supply decisions are made with little concern for current or future demand. This leads to rationing and wait lists. Patients have to wait for diagnostic imaging, surgery, hospital emergency room and even access to a primary care physician (Esmail N., Hazel, M., & Walker, M.A., 2008). From the time a specialist decided to undertake treatment to the time the patient actually receives treatment is a waiting time during which all parties agree treatment is needed, but treatment is however not given. In the specialty of neurosurgery, for example, the 2008 waiting time from decision to treat to treatment is 19.4 weeks, which is one of the highest in any OECD country (Milgrom, P., & Roberts, J., 1992). Mean 2008 waiting time for an MRI scan was 9.4 weeks. Second, the availability of modern medical technology is restricted. For example, neuroendovascular techniques have evolved into a subspecialty in neurosurgery several years ago and most countries have nation-wide centers of excellence for these modalities of treatment for cerebral aneurysms. However, the province of Saskatchewan has yet (at the time of writing this book) to have a neuroendovascular facility, which is already the standard of care throughout the world. Third, the recent trend of new private day-surgery centers have eased the burden on surgical waiting lists and the government has so far looked the other way as these centers have clearly improved patient access to critical surgeries and physicians.

In summary, the Canadian healthcare system is founded on principles that are now ignored. Patients do not have timely access to healthcare and not having such access is, indeed, denial of healthcare. Suffering while on a surgical waiting list can only be appreciated by those who suffer, and least by those whose administrative decisions lead to waiting lists.

**UNITED STATES OF AMERICA**

In contrast to the Canadian healthcare system, the U.S. has adopted a market-based system. Private insurance companies cover a majority of individuals for their healthcare costs. Employers pay for the coverage. But employment is not a guarantee of health coverage. In 2005, nearly 15% of employees had no health insurance coverage from their employers (DeNavas-Walt, C.B.P., & Smith, J., 2007). In 2007, nearly 45 million Americans or about 16% of the population have no insurance coverage at all. Private insurance covered 68% of the population (DeNavas-Walt, C.B.P., & Smith, J., 2008). The insurance companies and the government depending upon the coverage held by the patients compensate physicians and hospitals. Most hospitals are private enterprises. Thus the purchase of medical equipment is viewed as an investment by the hospital, which reaps greater returns on the investment if more patients use the equipment. This is in contrast to Canada where new equipment is often viewed as a drain on a fixed budget. As a result of this availability of medical technology in the United States, it is currently one of the most advanced nations in the world in healthcare technologies. For example, in 1990, the number of MRI units per million population is 3.69 in the United States compared to 0.46 in Canada (DeNavas-Walt, C.B.P., & Smith, J., 2008). (Figure 2)

Despite market forces at work, patients in the United States do encounter waiting lists for surgeries, emergency medical care and physician appointments. Canada’s rationing is supply based while the United States rations based on price.
That is, those who cannot afford healthcare are doomed to a parallel inferior system where waiting lists and poor accessibility are the norm. In a market-based system, the allocation of resources is shifted in favor of those sectors where the marginal returns are higher. In 1986 the United States Congress passed an Act called EMTALA (Emergency Medical Treatment and Active Labor Act) requiring hospitals and ambulance services to provide care to anyone needing emergency treat-
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ment regardless of their ability to pay. Hence the uninsured patients crowd emergency rooms for routine ailments that are best managed in physician offices. This generates wait times for insured patients. The same price rationing consequences apply to surgical wait times. Although these times are much smaller than in Canada and the U.K. they nevertheless exist and represents a failure of a market based system.

A recent OECD study found that the major factors reducing waiting times for elective surgery are: higher number of acute care beds, higher surgical activity levels in hospitals, fee-for-service remuneration, a higher healthcare budget and a lack of fixed budgets for hospitals. Surprisingly, the study demonstrated that a younger population is not a factor in reducing waiting times. In a multivariate analysis in the same study it was found that the number of acute care beds and the number of physicians and specialists had the largest impact on waiting times (Fuchs, B.C., & Sokolovsky, J., 1990).

In summary, the United States does have waiting lists for elective surgeries, but the waiting times are an order of magnitude less than those in publicly funded systems. The humanitarian considerations for uninsured people, makes the system for insured people slightly inefficient. However, the principal (insurance company) – agent (doctors and hospitals) model in the United States is much closer to full efficiency than in Canada and the United Kingdom.

UNITED KINGDOM

Healthcare in the United Kingdom works under a blend of public and private systems. The National Health Service (NHS) refers to four publicly funded healthcare systems in the U.K. with its components in England, Scotland, Wales and Northern Ireland. In addition, citizens may choose to purchase private medical insurance for hospital and doctor services. In 2001, 11.5% of the population held private medical insurance (Siciliani, L., & Hurst, J., 2003). Furthermore, 40% of adults with private medical insurance are in the top decile of income. As a percentage of total healthcare expenditure, public to private ratios were 83.3:16.7 (Laing, W., & Buisson, C., 2001). NHS does not cover all necessary medical treatment costs. The benefits are ill defined and its decisions are based on an analysis of costs and benefits of a particular medical technology, pharmaceutical or procedure. The National Institute for Clinical Excellence makes such recommendations. In some instances the health authorities may make rationing decisions. Drugs may be excluded because of poor therapeutic value or excessive costs. Employers mostly purchase private medical insurance provided by for-profit and non-profit organizations and most are group policies. NHS patients must have a referral from a GP to access secondary level care with specialists.

With poor hospital capacities and low per capita specialists figures, waiting times to see a specialist was on the average 13 weeks in 2001-2002 (Laing, W., & Buisson, C., 2001). NHS Trust hospitals had the longest waiting lists with between 52% and 83% of patients waiting longer than six months for elective surgery found in 25% of NHS hospitals (OECD Health Data, 2001). Interestingly, this study found that in contrast to the United States data, not much association was found between waiting times and hospital capacity and number of beds. Paradoxically increasing the number of specialists increased average waiting times suggesting that the supply of doctors induced demand. Individual level of employment, affluence and urgency of disease shortened waiting times. This mostly indicates the relative efficacy of the private medical insurance arm 40% of whose subscribers are in the top income decile as noted above. (Figure 3)
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Figure 3. United Kingdom: Financing of health care, 1999 (Source: Health Care Systems in Transition: United Kingdom, 1999. European Observatory on Health Care Systems)

COMPARISONS

The three OECD countries discussed above have three different healthcare systems although many would argue that the U.K. and Canadian systems are closer in principle to each other than to the United States. Recent OECD health data reveals some interesting differences among these three countries (Martin, R., Sterne, J.A.C., Gunnel, D., et al., 2003).

Table 1 below, gives an estimate of waiting times for surgery in the United States compared
to key OECD countries in 2001 (Mohan, R., Mirmirani, S., 2007).

The following comparisons of resource allocation in the three countries are from the OECD 2008 health data. (Table 2)

An Example

Given an understanding of the healthcare systems in the three countries, this section will consider as an example the generation of waiting lists in one of the provinces in Canada. We will specifically consider two kinds of surgical waiting lists: waiting lists by the specialist to see the patient after referral by a GP and patient waiting lists after a decision is made to undertake surgery.

Consider the first waiting list. Family physicians or GPs send a referral letter to the specialist. The specialist then places the patient on a clinic waiting list. This waiting list is generated due to the limited hospital and outpatient facility resources as well as the limited number of specialists that the health boards have decided to recruit. Thus, a specialist can only run a fixed number of clinics per week. The number of clinics is independent of patient demand for referrals. There may be days when the specialist has time to see patients but the hospital and outpatient facilities do not have the resources to allow the specialist to see patients as the same resources are shared by several specialists. In one of the specialties, for example, the clinic waiting list is between 150-250 patients waiting to be seen. Patients scheduled to see a specialist may be pushed back due to a more urgent referral. This combination of triage and limited resources can render a waiting list long and increase patient dissatisfaction with the healthcare system. It also impedes timely care of patients who are suffering. Some patients wait for over a year to get to see their specialist.

Consider the second waiting list. This is divided into two parts: those patients who are placed on “the board” and those who are on an elective waiting list. The “board” is for emergency surgeries that are constrained by limited resources. When the day’s scheduled surgeries are completed,

Table 1.

<table>
<thead>
<tr>
<th>Countries</th>
<th>%CT Scanners Per 1000 Pop.</th>
<th>%MRI Scanners Per 1000 Pop.</th>
<th>Health Expenditure % GDP</th>
<th>Practicing Physicians Per 1000 Pop.</th>
<th>Male Life Expectancy at Birth</th>
<th>%Public Asking for Complete Rebuild of System</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>33.9</td>
<td>26.5</td>
<td>15.2</td>
<td>3.7</td>
<td>75.2</td>
<td>34</td>
</tr>
<tr>
<td>Canada</td>
<td>12</td>
<td>6.2</td>
<td>9.8</td>
<td>2.1</td>
<td>78</td>
<td>12</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>7.8</td>
<td>5.6</td>
<td>8</td>
<td>2.9</td>
<td>77.1</td>
<td>15</td>
</tr>
</tbody>
</table>

Table 2.
the patients on the board get their turns. Due to limited resources again, only one or in rare cases two operating rooms are allowed to run to clear the board. Board surgeries can fall under three categories: E1, E2 and E3. An E3 surgery has to be called within 24 hours. An E2 surgery has to be called within 8 hours of booking and an E1 has to be called within 1 hour of booking. In practice though an E3 can have patients waiting several days for their surgeries and, in some instances, patients have walked out of the hospital in frustration against medical advice. In addition, an E3 surgery cannot be started after midnight. An E2 surgery can only be started after the day’s cases are done and an E1 case can “bump” a scheduled elective surgery usually from the same surgical specialty. A patient may join the board as an emergency arrival at the Emergency Room. That patient may be a new patient, a patient not on the scheduled waiting list or one who is already on the scheduled waiting list and his condition has deteriorated.

The second part of the second waiting list is the patients who are placed on a scheduled waiting list for elective surgery. This list is generated by the degree of urgency of the patient’s ailment requiring surgery. Patients on this waiting list are called on a specific date to come for surgery. However, there is a chance that on the day of their scheduled surgery, they may be refused surgery because of limited resources on that day. They would they go back on the scheduled waiting list and once again, wait their turn. It is easy to see that the system has been patched up with disjoint solutions that disregard patient suffering while waiting and inappropriate use of limited resources.

The keys to the inefficiency in the system are the limitation of resources that is blind to demand and the sharing of these limited resources by all the surgical specialists. A surgeon may be given, for instance, 3 or 4 operating days per month. Thus, if he has 70 patients waiting for surgery, some of the patients would have to wait for 6-8 months provided none of the scheduled patients is “bumped” by non-availability of resources on the day of surgery or none is “bumped” by a more emergent patient who entered the system through the emergency room.

CONCLUSIONS

The analysis above suggests that surgical waiting times are generated from a lack of addressing the mechanisms underlying the generation of waiting lists. Statistical studies done in each of the three countries in this chapter appear to show different independent factors affecting waiting times. Specifically, in Canada, limited number of hospital beds, limited number of specialists, limited operating times, limited medical technologies and a system operates under economic externalities can all contribute to long waiting lists and increased patient suffering. In comparing the three countries and their healthcare systems, the issues are not the relative superiority of one system versus the others. It is the degree to which each country lacks the proper incentives to achieve efficiency within its system. The issue therefore is the inadequacy of ad hoc incentives in a system without a formal modeling-based understanding of the healthcare delivery. One cannot blame a given system for the inefficiencies generated by inappropriate or inadequate contracts and incentives.

REFERENCES


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