CANADIAN AND US HEALTH CARE SYSTEMS PERFORMANCE AND GOVERNANCE: ELEMENTS OF CONVERGENCE

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1. INTRODUCTION

International comparisons of the organization and performance of health care sectors are increasingly informing policy makers about potential policies relating to the cost of, and access to, health care (White, 1995; Schwartz, Glennerster and Saltman, 1996; Altenstetter and Bjorkman, 1997; Ranade, 1998). Perhaps nowhere have such comparisons featured as prominently as in North America. In debates on health care policy reform politicians, academics and critics in both the United States and Canada have compared the development, funding and delivery systems in the two countries (e.g., Soderstrom, 1991; Redelmeier and Fuchs, 1993; Maioni, 1998; Boychuk, 1999; Tuohy, 2000). The inferences drawn from these comparisons are frequently used in recommendations to modify each system.

The public debate in both countries tends to emphasize the differences between the U.S. and Canadian health care systems. This emphasis on differences was, perhaps, most starkly evidenced in the controversy surrounding then- President Clinton's health proposals. These proposals were designed to extend health insurance coverage to Americans not eligible for existing government-sponsored insurance and not covered by employer-sponsored programs. Supporters of the proposals highlighted both the lower costs of the Canadian health care system, as well as the universal coverage provided by provincial government insurance programs. In contrast, opponents of Clinton's proposals effectively characterized them as an attempt to move the U.S. system much closer to Canada's "socialist" health care system with the attendant bureaucratic inefficiency. Some of the features of the Canadian system that were highlighted included long waiting times to see specialists and to receive diagnostic procedures and surgical treatments (Globerman and Vining, 1996).

In Canada, similarly, opponents of initiatives to permit for-profit delivery of specific health care services argue that allowing it, even at the margin, would result in the inefficiencies and inequities in access that characterize "market-based" health care in the United States. In particular, Canadian health care experts and policymakers point to the high costs of administering numerous health insurance plans as a major inefficiency of the U.S. system. In sum, the argument that privately funded health care leads to gross inequity in access to, and inferior quality of, health care lies at the heart of the current

widespread public support in Canada for government Medicare programs, as well as opposition to any significant introduction of supplementary private insurance for select health care services or even for higher quality levels on non-essential dimensions (such as hospital room meals).

It is not surprising that public debate in the political arena highlights dramatic differences. But, dramatic differences in the organization and performances of health care systems of the two countries would be somewhat puzzling, if they were to actually exist. Dramatic differences would be surprising for two reasons. First, most elements of divergence between the two systems have only emerged in the last fifty years. As Tuohy (2000, p. 1005) points out: "In the 1950s, these two health care systems were as similar as any on the globe". Second, dramatic differences would be puzzling because all health systems are driven by the same set of basic economic problems. One does not have to be a believer in economic determinism to believe (or at least suspect) that these fundamental similarities in the underlying economic phenomena would drive (or at least drift) the systems to convergence on many, if not most, dimensions. Evolutionary economics provides one conceptual framework on the potential dynamics of convergence (Dosi and Nelson, 1994), with its emphasis on "mechanisms that systematically winnow on extant variation" (Nelson, 1995, p. 56). This efficiency survival criterion has been applied to organizations and institutions (Fama and Jensen, 1983a, 1983b).

To be sure, general evolutionary theory, and evolutionary economics as well, also focus on the opposing forces of chance, path dependency and increasing complexity of structures that results in variation or differences (Saviotti, 1996) and, potentially, equilibrium inefficiency (North, 1981, 1990). Nevertheless, health care regimes in North America have been evolving over the past half-century under intense public scrutiny, and major policy innovations have been implemented in both Canada and the United States in response to these public pressures. Unless Canadian and American priorities and preferences with respect to health care institutions and outcomes differ substantially, one would anticipate some degree of convergence, however deliberately, between the two systems if one system was demonstrably "better" than the other.

In this regard, supporters of the Canadian system point to surveys of both health care providers and users of health care services as evidence of a broad preference for the

Canadian system of governance. These public opinion polls show greater support for the Canadian health care system among Canadians than they do for the United States health care system among Americans (Maioni, 1998). Advocates of a single-payer system also underscore surveys of physicians reporting that Canadian doctors are happier, on balance, dealing with provincial government health insurance programs than are American doctors dealing with private insurers and health maintenance organizations (Tuohy, 1999). However, recent polls indicate a possible closing of the gap between Canadian and American attitudes toward fundamental change in the health care sector (Maioni 1998, pp. 12-13).

The broad purpose of this paper is to assess in a preliminary manner the extent to which the Canadian and U.S. health care systems differ in terms of both some basic performance measures and governance structures. By governance structures, we mean the key organizational and regulatory features of the systems that are designed to address the fundamental economic issues that surround the delivery of health care services. Given the vast number of dimensions on which the systems could be compared, this is necessarily an exploratory enterprise. A related purpose is to assess the degree to which the two systems have converged or diverged over time in terms of some of the dimensions that will be discussed. The analysis should shed some indirect light on the extent to which evolutionary forces are working to encourage convergence across national health care systems. It should also identify specific dimensions of performance for which significant differences exist across the Canadian and U.S. systems and help assess whether the differences point clearly to superior performance on the part of one or the other system.

The paper proceeds as follows: the next section provides a brief overview of the main economic issues that must be addressed by health care delivery systems. In doing so, we focus on allocative issues and largely ignore distributive issues, important though they are. The third section reviews statistical and related evidence on both comparative input usage and output performance of the two health care systems. The purpose is to assess whether one of the other of the two systems is clearly superior in terms of performance, as well as the degree of convergence or divergence of these performance dimensions over the last four decades. The fourth section examines how the two systems

are evolving to "handle" the agency, adverse selection and moral hazard problems that will be described in the next section and assesses the extent to which the similarity of these economic forces have driven, or at least nudged, the two systems to convergence. The section identifies and discusses one dimension of specific convergence: the bureaucratization of health care management in both countries. The section concludes with policy inferences relevant to this bureaucratization.

2. ECONOMIC FORCES DRIVING HEALTH CARE SERVICES

A major force driving health care provision across countries to convergence is the inherent sameness of the market failures that any sophisticated health care system faces (Blank, 2000). The range of market failures associated with the delivery of health care services are well known (Phelps, 1992; Folland, Goodman and Stano, 1993). One main source of market failure is the information asymmetry that exists between suppliers and consumers for most health care services (Vining and Weimer, 1988). Many health care services are intrinsically highly variable in quality. The quality of treatment that a patient receives is contingent on the combination of time, effort and skill of the service provider. Patients ordinarily cannot assess before they receive treatment the quality of the service they are going to receive.[1] In more technical language, few health care services are "search goods". At best, health treatments are experience goods (quality can be assessed as it is being received). However, patients are unable to assess the quality of some health service treatments at any point in time—they are post-experience goods.

Where goods have experience or post-experience characteristics, patients are inevitably reliant on agents to assess the quality of service. At the same time, the agent is also the provider of the service. As a consequence, potential principal-agent problems characterize the health care delivery system. Such problems, if not effectively addressed, can lead to higher costs and lower quality than would otherwise be realized. Hence, an important issue confronting any system of health care is the implementation of effective

[1] Early hopes that consumers could effectively use the Internet to become more informed buyers of health care services appear to be premature. Specifically, while many use the Internet to acquire health care information, the quality of that information is questionable. It might also be noted that, in many cases, providers are uncertain about the outcome of their treatments, in part because health care providers cannot control all aspects of patient behaviour that influence outcomes.

and efficient mechanisms to make agents accountable to principals. The stylized extremes in this regard are direct government delivery of health care, at one end, and market competition between profit-maximizing firms at the other. Indeed, these extremes characterize popular cross-national comparisons of health system alternatives. The theoretical literature, in contrast, stresses the role of "non-profitness" (or more technically, the allocation of residual claims) in controlling these principal-agent problems. Hansmann (1996) and others argue that non-profit organizations that do not receive any residual profit are more likely to be able to convince patients that they will act as responsible agents. This advantage, however, must be set against the reality that agents that are not receiving the residual have less incentive to minimize costs (especially when the "cost" is their own salary or income!). The only way to counteract this tendency is to simulate competitive markets in some manner. In practice, therefore, institutions in all health care systems are likely to contain elements of both bureaucracy and competition.

A second relevant characteristic is that the demand for health care services is uncertain. An individual may never require a particular service. However, they are subject to the risk that they will, and if they do require health care services, the financial costs can be substantial. Therefore, the option value of treatment availability is significant. Under such circumstances, the risk-pooling advantages of "group" health insurance are obvious.[2] However, there are well known problems with any insuring program. Most notably, individuals with "below-average" risks will seek to avoid subsidizing individuals with "above-average" risks (Rothschild and Stiglitz, 1976). This leads to higher costs for higher–risk groups, presuming that insurers can identify the differential risks associated with individual groups of insurance purchasers, *ex ante*, and charge the appropriate premiums accordingly. In this case, if the demand for health insurance is at all price sensitive, some individuals will choose to forego purchasing health insurance, and those individuals are likely to of below-average incomes. A uniform premium-rating system, on the other hand, leads to adverse selection problems

[2] Health care providers also face problems related to uncertain demand for the services. Such uncertainty encourages direct and indirect forms of risk-pooling such as creating relatively large practice groups that affiliate with a number of HMOs or preferred-provider organizations.

where insurers find themselves with customers whose premiums do not reflect the above-average risk that they impose on the insurers.

The need to address potential adverse selection problems while insuring that below-average income and wealth do not preclude reasonable access to health care services is a major potential problem for market-based health care systems. Indeed, it is probably the single most important consideration underlying public support for government funded health insurance. However, Globerman and Vining (1998), among others, note that extensive cross-subsidies across groups of taxpayers to insure universal access to fundamental services such as health care may not be sustainable, at least beyond some point. Specifically, taxpayers in lower-risk categories may demonstrate strong political opposition to the tax increases that are needed to provide health care and related services to individuals in higher-risk categories. In the limit, access to specific types of health care services may be denied to individuals covered under government insurance plans because sufficient funding is unavailable via the tax system. Hence, the issues of "reasonable" access and "inequality" of access must also be addressed by publicly funded health systems.

Finally, insurers must address well-known moral hazard problems. Moral hazard occurs when individuals change their behaviour because they can pass some, or all, of the costs of their behaviour on to other parties. In health care, insured individuals may behave more recklessly with respect to behaviour that is linked to health care usage. For example, health problems related to, for example, smoking, obesity, unwillingness to exercise, drug and alcohol usage are behaviours that can be modified by incentives (Lewis, Choate and Grossman, 1981; Wasserman et al., 1991; Hu, Sung and Keeler, 1995; Chaloupka and Warner, 2001; DiSimone, 2001). Thus, incentives tied to health insurance, such as lower insurance rates for non-smokers, can mitigate problems associated with moral hazard. Moral hazard can also be manifested in patterns of health care usage. For example, in the absence of usage-related charges, individuals are likely to use health care services inefficiently. For example, they will use emergency room facilities when it would be more socially cost-effective to wait to see their personal physician, or they may utilize the services of specialist physicians for concerns that could be as (or more) effectively addressed by seeing registered public nurses.

Both privately and publicly funded health care systems face endemic moral hazard problems. In practice, concerns about discouraging universal access to health care services, or about the quality of care being too closely tied to socio-economic status, lead public sector health insurers to be less aggressive than private sector insurers in using co-payments and related instruments to mitigate problems related to moral hazard. However, informal rationing frequently replaces co-payments and the like as a means of discouraging "inefficient" use of health care services in publicly funded systems. For example, long waiting times for treatment in crowded emergency rooms can discourage visits to emergency room facilities in the same way that co-payments would.[3] Hence, both public and privately funded systems have to address moral hazard either explicitly or implicitly.

In summary, the same major economic problems both health care systems. If significant differences exist in the ways in which the two systems address those problems, one would expect to see meaningful differences in the performances of the two systems. Presumably, there are better or worse policies. On the other hand, it is also possible that observed differences are exaggerated. Specifically, a focus on broad differences, such as the degree of public versus private financing might mask similarities in the specific ways in which the two systems seek to address the problems identified above. The following sections compare the performances of the two systems, as well as the specific instruments and policies used by managers in the two systems to promote desirable outcomes.

3. EVALUATING THE PERFORMANCE OF THE HEALTH CARE SYSTEMS

In this section, we consider a set of "input" and "output" characteristics of the Canadian and U.S health care systems.[4] The goal is to present comparative evidence on the performance of the two systems. It should be recognized at the outset that any such assessment based upon the available data is necessarily both incomplete and imprecise. In particular, the data are selective and do not encompass numerous attributes of health

[3] The type of individuals most affected, at the margin, differ under the two approaches. Long waiting times discourage individuals with high opportunity costs of time that are likely to be from above-average socio-economic groups. Co-payments discourage poorer individuals from using emergency room facilities.
[4] The data are drawn from OECD (2001).

care systems that are of value to users of the system. For example, reliable measures of access are unavailable. Hence, it is not possible to determine the extent to which the more limited insurance coverage in the U.S affects utilization of health care services and, as a consequence, the health status of Americans relative to Canadians. Similarly, it is extremely difficult to evaluate whether and to what extent queuing for specialized services in Canada contributes to increased mental stress and related implicit costs in Canada compared to the United States. Direct productivity estimates are also unavailable for the systems. Hence, measures of cost and health status are usually invoked as proxies for the components of a productivity index. For example, it is often pointed out that Canadians enjoy superior health status compared to Americans, while spending absolutely and relatively less on health care. A problem with such comparisons is that they do not (and cannot) hold constant other influences on health status that may not be directly, or even indirectly, related to the delivery of health care.

Notwithstanding these caveats, statistical comparisons provide a broad perspective on how health care services are produced and consumed in a country and, in a general way, whether unique features of specific national health care systems are related to varying input and output characteristics. In this respect, perhaps the most prominent feature differentiating the Canadian and U.S health care systems is the source of health care funding. In 1999, for example, public expenditures on health care in Canada accounted for 70.6% of total Canadian expenditures on health care while the comparable percentage for the United States was 44.5%, well below the Canadian value. Many observers posit that the much larger role of public funding of health care in Canada underlies differences in the performances of the Canadian and U.S systems. However, the precise linkages between the two phenomena are more often implicit than explicit.

A Comparison of Some Health Input Measures

Comparisons between the two health care systems inevitably highlight differences in overall costs, as well as differences in input mixes. Table 1 summarizes a number of such measures for selected years. The first input measure highlighted is total expenditures on health care as a percentage of gross domestic product (GDP). In 1961, the earliest year for which comparable OECD data are available, the values for the two

countries are quite similar: 5.8% for Canada and 5.2% for the United States. Over time, that percentage increased for both countries, although the increase has been greater for the United States. Thus, in 1999, the relevant quantities are 9.3% for Canada and 12.9% for the United States.[5]

Insert Table 1 About Here

Interestingly, public expenditure on health care as a percentage of total expenditure on health care increased dramatically in both countries over the period. Indeed, over the period 1960-1999, the relative increases were quite similar: 28 percentage points in Canada and 22 percentage points in the United States. Moreover, from 1971-1999, the percentage actually declined in Canada, whereas it increased in the United States. In context, these data are suggestive. These data cast doubt on an explanation of the substantially faster growth of the health care sector in the United States compared to Canada that is based upon the United States' reliance upon a predominantly privately funded health care system. In relative terms, publicly funded health care in the U.S increased at a slightly faster rate than in Canada at the same time that health care as a percentage of GDP more than doubled in the United States, while increasing at around 60 percent in Canada. The more plausible implication is that relative expenditure differences between the two countries reflect more the specific differences in how resource allocation decisions are made in each country than simply whether the decisions are made by public or private sector insurers.

More specific input measures highlight differences between the two countries in the production of health care services. For example, a higher percentage of the total U.S labour force is employed in the health care sector. This is consistent with the higher share of U.S. GDP dedicated to health care. Specifically, 2.6% of total employment in the United States in 1961 was health care employment. It was 7% in 1993, the most recent year for which data exist. For Canada, the relative share of employment accounted for by

[5] Published estimates of health care costs may not accurately reflect indirect costs associated with the operation of national health care systems. For example, Canadian data do not reflect productivity losses in the economy associated with lost work time that, in turn, results from patients waiting for specialist services. U.S. data do not reflect the relatively large bad debts of health care providers. In the latter case,

health care workers was 3.3% in 1961 and 5.6% in 1993. More interesting, perhaps, are the differences in the mix of health care employment reported in Table 2. For example, general practitioners were around 4% of health care workers in Canada in 1993, whereas they were 2% of health care workers in the United States. Practical nurses were also utilized much more intensively in Canada -- they accounted for around 32% of the total health care workforce in Canada in 1993, while they accounted for 23.5% of the total health care workforce in the U.S in that same year.[6]

The obvious inference is that the U.S health care system utilizes other health care inputs more intensively than does Canada. Unfortunately, the available data do not permit identification of all such inputs. However, available input expenditure data do point to specific differences. As shown in Table 2, the U.S spends absolutely and relatively more on "administration" than does Canada. Thus, in 1999, total (relative) expenditure on health administration and insurance in the United States was 6.1%, while it was 1.9% in Canada.

Insert Table 2 About Here

By way of comparison, in 1961 these same percentage values were 4.9% in the United States and 2.8% in Canada. This difference in relative overhead expenditures has been interpreted by many scholars as reflecting economies of scale in administration that are more fully realized by a single-payer system. In the latter interpretation, it is the proliferation of insurers and health organizations that underlies the greater relative and absolute expenditures on health care administration in the United States (McKinsey Global Institute, 1996; Reinhardt, 2000). However, at least some of this administrative spending provides benefits. The U.S. administrative system tracks, costs, and prices specific activities and procedures. This ensures that prices at least somewhat approximate marginal costs. The Canadian system is notoriously weak at allocating procedure-specific costs, because of the weak incentives to do so. The result is many

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services are provided, but they are not recorded as expenditures. Whether such omissions bias the relevant comparisons for or against one or the other country is unclear.

[6] The percentages are virtually identical if one goes as far back as 1976.

skewed relative prices and resulting misallocation of resources (Hurley and Card, 1996; Vining, 2000; Hamilton, Ho and Goldman, 2000; Donaldson, Currie and Mitton, 2001).

Expenditure data also indirectly suggest that the U.S health system uses a relatively greater number of specialists than does Canada. Partly as a result, the income of physicians relative to the mean of all employees is substantially higher in the United States than in Canada. In 1992, the most recent year for which data are available, physicians made around 5.5 times the mean income of all employees in the United States. In Canada, physicians made 3.6 times the mean income of all employees (Table 1). That this does not reflect an overall greater relative demand for health care workers in the U.S is suggested by the fact that nurses incomes relative to the mean of all employees was virtually identical in the two countries in 1986. While it is possible that physicians have less bargaining power in Canada than in the U.S. -- as Canadian physicians essentially bargain with a single provincial government payer -- the substantially higher relative income of U.S. physicians also likely reflects the greater relative share of higher priced specialists in the overall U.S health care labor force.[7]

Finally, pharmaceuticals and other non-durables account for a greater share of health care expenditures in Canada (15.4%) than in the United States (11%) in 1999. This represents almost a reversal of the situation in 1961, when the comparable percentages were 12% in Canada and 16.2% in the United States. The relatively greater emphasis on pharmaceutical therapy in Canada appears to be mirrored by a weaker emphasis on the use of durable capital inputs. While comprehensive data on physical capital stocks in the health care sector are unavailable, some information is available on the use of diagnostic equipment in the two countries.

Table 3 shows estimated numbers of CAT scanners, MRI machines and lithotryptors in the two countries for 1990 and 1997. In all cases, U.S. utilization of these technologies far exceeds utilization in Canada, even given the much larger absolute size of the U.S health care sector. This observation highlights the technological intensity of U.S hospitals and clinics, as well as the propensity of Canadian provincial government health ministries to restrict spending on capital equipment (see also Weil, 1995).

[7] To be sure, specialists in the U.S. may have higher costs of doing business than those in Canada with some portion of those costs being passed through to payers.

Insert Table 3 About Here

In summary, the frequently cited propensity for the U.S to spend relatively more on health care than Canada is often proposed as evidence that single payer government-funded health care systems are more cost-effective than multiple payer privately funded systems. Without standardizing for output performances, such claims are obviously tentative. Beyond this caveat, the underlying statistical relationships themselves call into question the validity of such claims. The amounts spent on health care relative to GDP were virtually identical in the two countries in 1961. Over the subsequent four decades, health care spending relative to GDP rose more rapidly in the United States than in Canada. Over the same time period, however, public health care financing relative to private financing also increased faster in the United States relative to Canada, presumably reflecting the emergence and growth of the Medicare system in the United States since 1965. Indeed, both countries can be characterized as trending to mixed public-private financing schemes over the past four decades (Globerman and Vining, 1996). Hence, any explanation of relative overall expenditure differences based simply upon differences in financing sources may well be spurious.

As noted above, the two countries clearly differ in the input "mixes" used to produce health care. In broad terms, the U.S. system has historically used capital equipment and specialists more intensively than Canada. It has also been more intensive in the use of administrative inputs. Canada, in turn, has been more intensive in its utilization of nurses and other non-specialized personnel, as well as pharmaceuticals and other non-durables. These input differences do not lend themselves easily to inferences about which system is exhibiting superior performance. On the surface, it seems unlikely that the relatively large differences in input mixes reflect differences in factor prices across the two countries. That is, one or both countries might be using "inappropriate" mixes, where inappropriate is defined as a mix that does not minimize the costs of producing output along any output expansion path. In the absence of meaningful input price data, one is forced to look at output performance measures in order to draw any indirect inferences about the technical efficiency of the two systems.

A Comparison of Some Output Measures

There are two broad available measures of output that we report upon. The first is the actual set of activities carried out by the two health care systems. The second is a set of health indicators that should be, at least to some extent, related to the performance of the health care system. With respect to the latter, the conventional wisdom is that Canadians enjoy better health status than Americans, notwithstanding the greater absolute and relative expenditure on health care in the United States.

Some evidence on comparative health status is summarized in Table 4. The first few measures report life expectancy at birth and incremental life expectancy at age 65 for men and women in the two countries. For both countries, all measures of life expectancy increased consistently from 1961 to 1997. In most cases, life expectancy in Canada was higher than in the United States at both the start of the period and the end of the period. As well, in most cases, the incremental gain in life expectancy over the sample period is slightly greater for Canada than for the United States. The superior performance by Canada is most notable in the case of infant mortality. In 1961, infant mortality deaths per thousand live births were lower in the United States than in Canada. By 1997, infant mortality deaths per thousand live births in Canada were twenty-five percent lower than in the United States.

Insert Table 4 About Here

Besides somewhat lower mortality rates, Canadians also enjoy lower morbidity rates. For example, significantly higher percentages of Canadians aged 65+ report that they are in good health than do their U.S. counterparts. As another example, the disability free life expectancy of males 65+ was 12.7 in Canada (in 1996) compared to 7.4 in the U.S in 1990. These data add support to a tentative conclusion that the Canadian health care system is a superior vehicle for delivering health care.

As suggested in an earlier section, conclusions about the performances of health care systems that ignore other conditions influencing the health status of populations may be spurious. It can certainly be argued that Americans live a less healthy lifestyle than do

Canadians. Some relevant data are reported in Table 5. For example, in 1971, road traffic accident injuries per million population in the United States were around 52 percent higher than the comparable injury rate in Canada.

Insert Table 5 About Here

By 1997, the U.S ratio was almost 70 percent higher than the Canadian ratio, in spite of the fact that Canadians on average drive in worse road conditions because of climate. Other potentially relevant indicators point to the same large differences in social behaviour associated with higher mortality and morbidity in the United States. Homicide deaths per hundred thousand population were around 5 times higher in the United States than in Canada in 1980. By 1997, they were almost 5.5 times higher in the United States than in Canada. The incidence of AIDS per million population was approximately 25 times higher in the United States than in Canada in 1981 and almost 10 times higher in 1999. Finally, whereas almost 20% of American males and 25% of American females were classified as obese in 1994, only 13% of Canadian males and females were so classified.

The available information clearly suggests that socio-cultural phenomena contribute to substantially greater mortality and morbidity rates in the U.S, all other things held constant. Given this, it is problematic to ascribe any superior outcomes of the Canadian health care system to the organizational and governance structures of the Canadian system. It might be argued that a different allocation of resources within the Canadian health care system indirectly contributes to "healthier" lifestyles in Canada. Unfortunately, there is little information bearing upon this latter issue. One available statistic is relevant in this regard: In 1999, 6.5% of total current expenditures on health care in Canada was classified as public health expenditures; the comparable share was 4.2% in the United States.[8] It is unlikely that the relatively small greater margin of public health expenditures in Canada explains the substantially healthier Canadian lifestyle. Rather, Canadian lifestyles likely reflect a host of policy and non-policy related

[8] By way of comparison, the percentages were 3.4 (in Canada) and 2.9 (in the U.S.) in 1961.

differences between the two countries that are unrelated to the organization and governance of the health care systems.

The performance of specific procedures and treatments is also informative concerning the output of each country's health care system. Unfortunately, the relative dearth of information permits only very limited comparisons. Several indicators are summarized in Table 6. One notable development in both countries is the substantial reduction in average inpatient care-days. This is especially true for the United States where total in-patient beds/1,000 population declined by around 50% over the period 1971-1998. The comparable reduction was around 40% in Canada. As a result, whereas average inpatient days in Canada in 1966 were around two-thirds the comparable U.S. value, the Canadian statistic was actually higher than that for the United States in 1998.[9] The relative increase in expenditures on outpatient care is shown in lines 2 and 3 in Table 6. The increases in both countries are comparable, although more marked for the United States. In both countries, therefore, there has been a successful relative substitution of outpatient services for inpatient services.

Insert Table 5 About Here

The more intensive use of technology-intensive capital equipment in the U.S, described earlier, produces relatively new, technology-intensive and costly medical procedures compared to Canada. Support for this conclusion is provided by two cardiac procedures: angioplasty and coronary bypass. For the first procedure, angioplasty procedures per hundred thousand population were slightly more than three times higher in the United States than in Canada in 1990, but almost five times higher by 1998. Similarly, coronary bypass procedures per hundred thousand population were slightly less than three times higher in the United States than in Canada in 1998, a similar relationship to that for 1985.

In summary, while Canada clearly spends absolutely and relatively less on health care (conventionally defined), it is not possible to conclude unequivocally that Canada has a more efficient health care system than the United States. For one thing, the U.S

population puts considerably greater demands on its national health care system owing to a combination of behavioural patterns and socio-economic disparities that contribute to much higher rates of violent accidents and other incidents, to diseases related to drug abuse and to pathologies associated with obesity. For another, the U.S. health care system is a more intensive producer of relatively high cost procedures and treatments.[10]

The conventional view that access to health care is essentially universal in Canada while it is considerably less than universal in the United States is clearly true. But the magnitude of the difference is much harder to substantiate. The smaller percentage of the U.S. population covered by health insurance does not provide conclusive evidence on this issue.[11] Many uninsured Americans receive charitable health care services or government-provided services. It is difficult to generally characterize the nature of many government-provided medical services in the U.S., because Medicaid is a federal-state matching program, and both eligibility and benefits vary widely across states (Leichter, 1992; Ku et al., 2000).

At the same time, the universality of the Canadian system is increasingly being called into question. First, the Canadian system imposes waiting times for access to specialist physicians and many types of procedures and treatments.[12] While the implications of queuing for the "quality" of health care have been widely debated in Canada, it seems fair to argue that many insured Americans have easier *de facto* access to specialized medical services than do insured Canadians. There is some recent evidence that delays result in considerably longer hospitalization, although not worse mortality (Hamilton, Ho and Goldman, 2000).

Second, several provinces (now, by far, the dominant funders of health care) have begun to institute user fees for many services. The government of British Columbia, for example, has recently begun to implement user fees for a range of non-critical medical services, such as physiotherapy, podiatry and the removal of benign skin lesions. A

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[9] The decrease in inpatient beds/1000 is mirrored in decreases in inpatient care-days in the two countries.
[10] Whether the relevant procedures and treatments can be justified on a social benefit-cost basis is a separate issue (see Globerman and Vining, 1996, pp. 43-48).
[11] While government-funded Medicare covers essentially all Canadians, estimates suggest that up to 40 million Americans are not covered by either private or public insurance. See Maioni (1998, p.9).
[12] For relatively recent estimates of numbers waiting and average waiting times for patients in Canada, see Walker and Zelder (1999).

recent report commissioned by the government of Alberta (January, 2002) recommends similar steps, which would be based on the recommendations of a panel of experts.[13] There is considerable evidence that even quite limited user fees reduce demand (Epp et al., 2000). It also went further and suggested serious consideration of medical savings accounts.

4. SOME ORGANIZATIONAL AND GOVERNANCE CONVERGANCE?

In the previous sections, we reviewed data bearing upon the performances of the two health care systems. We concluded that claims of a superior Canadian health care system are questionable in the context of broad socio-economic differences between the United States and Canada. Certainly, claims that the Canadian system is more efficient because of its single-payer, publicly funded nature are, at best difficult to demonstrate convincingly. In this section, we consider attributes of organization and governance.

In the 1970s and 1980s, the Canadian healthcare system was at its most centralized. Although the Canadian constitution gave provinces primary jurisdiction over health care, the federal government exercised considerable centralizing influence over the system. This influence flowed primarily from the importance of the federal government's fiscal transfers to the provinces. It was also based on the legitimacy of the principle of universality. The effective primacy of the federal governance was codified in the Canada Health Act. However, as Federal transfers waned in the 1990s, and as health spending became an ever-increasing percentage of provincial spending, this centralizing force waned. In the early 1990s most provinces (which were themselves in fiscal crisis) were able to constrain increases in health spending, but from the middle of the decade onwards it became increasingly difficult and remains so to the present.

Most provinces have also begun to acknowledge that they cannot effectively micro-manage the health care system. Perhaps, more importantly from their perspective, there is a growing realization that they cannot control spending from the provincial capital if they have to actively manage the health budget. As a result, in most provinces there has been a push to regionalization with, at least theoretically, fixed regional

[13] For a discussion of the Oregon experience with a similar approach, see Kaplan (1994), Thorne et al., (1995) and Globerman and Vining (1996, pp.54-55).

budgets. This development has been clearly influenced by global trends towards various forms of managed competition (Ranade, 1998). The putative advantage of regionalization for provincial governments is that it allows governments to potentially get out of treating every health care decision as a provincial political decision – the region has its global budget, it has to make the "hard choices" within its budget envelope. Of course, the concept of regionalization requires credible commitment by provincial governments to a "hands-off" policy. This kind of credible commitment is extremely difficult in a parliamentary system. There is, however, some evidence that decentralization and regionalization will continue, if only because provincial politicians realize that this may be the only way to insulate themselves from constant micro-budget pressures that break their aggregate budget.

In contrast, the United States health care system is becoming effectively more centralized, bureaucratic, regulated and, ultimately, political. As Mechanic (1999: 666) puts it: "The growing centralization of medical decision making by large organizations in the U.S. context may have the unintended consequence of making issues more visible and more public and political". The growing centralization and bureaucratization is spearheaded by the rising dominance of "managed care" plans, including health maintenance organizations (HMOs), point-of-service plans (POSs) and preferred provider organizations (PPOs). The growth of government-funded Medicare and Medicaid is also playing a role. The corollary of this growth has been the relative decline of individual fee-for-service providers.

Probably the most important factor in the increased bureaucratization and centralization of the U.S. health care system is the growth of HMOs, both because of the direct effects of their growth and because of their spillover influence on all other aspects of the system (Mukamel, Zwanziger and Tomaszewski, 2001). Relatively small numbers of HMOs now provide the majority of health care in many major metropolitan areas (Appleby, 2001a). Many HMOs are continuing to grow rapidly (Appleby, 2001b). They are also becoming more concentrated; the ten firm concentration ratio for HMOs increased from 58% in 1994 to 67% in 1997 (Feldman, Wholey and Christianson, 1999). "Since the financial condition of many HMOs is currently precarious, such industry concentration is likely to continue" (Town, 2001, p. 967). The regulatory and political

consequences of this growth and increasing concentration are illustrated by the fact that in one recent year over a thousand different bills were introduced in state legislatures regarding managed care practices (Bodenheimer, 1996).

Currently, many large HMOs in the United States are now responsible for more patients than even the largest provincial regions in Canada and, indeed, for more patients than all but the largest provincial Ministries of Health in Canada (Appleby, 2001c). For example, Kaiser Permanente, a leading HMO, now serves over seven million people. As Kaiser Permanente is based on the group/staff model, it does not engage in selective contracting. Medical staff is directly employed by the organization. The larger size of successful HMOs makes it more feasible for them to control some of the agency, moral hazard and adverse selection problems that are endemic to health care. In this context, the activities that large HMOs engage in, particularly those that follow the group/staff model, are very similar to those that undertaken in Canada by regional health boards (Mechanic, 1999: 668). These include cost control, rationing and demand dampening, as well as the appropriate mechanisms to deal with budget conflict between administrators and practitioners over appropriate levels of treatment (Mechanic, 1996).[14] In short, while the Canadian health care system is becoming more decentralized, the United States system is becoming more centralized. In this fundamental respect, health care governance mechanisms in the two countries are becoming more similar.

5. SUMMARY AND CONCLUSIONS

Public debates about "reforming" the health care system in both Canada and the United States usually make reference to the other country's health care system as a standard for what is or is not desirable. The overarching impression given by many debate participants is that the two systems differ markedly in both their organizational governance and in their performances. The majority of academics and policymakers probably put the Canadian system forward as being the superior performer on both the grounds of efficiency and equity.

[14] The degree to which HMO administrators intervene in clinical decisions varies by organization. Canadian physicians have expressed a conviction that there is less intervention in clinical decision-making in Canada; however, there may be a trend among U.S. HMOs to intervene less directly in the physician-patient relationship.

If the Canadian system were clearly superior, one would expect the U.S. system to converge, over time, to a structure more closely resembling the Canadian system, rather than the reverse. In the long run, the will of U.S. voters can be expected to motivate politicians to support Clinton-style reforms of health care, even in the face of strong opposition by private insurers, if there is a strong consensus that U.S. consumers of health care would be better served by a single-payer, government funded system. In fact, the data provide only limited support for the superiority of the historically more centralized Canadian system. Indeed, given the relatively large differences in the demands facing the two health care systems, in particular, the much healthier lifestyles of Canadians, direct performance comparisons between the two systems are almost impossible.

The performance data certainly do not preclude an inference that neither system has historically offered a dominant solution to the common problems that they both face, and that the ongoing evolution of governance forms is leading to a convergence around a relatively narrow set of "interior" solutions. Indeed, both systems do seem to be converging towards models of governance that are, arguably, hybrids of the current two systems. In particular, the U.S. system of governance is becoming more centralized, at the same time as the Canadian system is becoming more decentralized. Certainly, some provinces are moving towards a greater use of user fees and perhaps even medical savings accounts. Thus, stylized "public sector" versus "private sector" characterizations of the governance problems in health care management will become increasingly untenable. Similar decision-making incentives and governance structures will increasingly evolve even with continuing differences in sources of funding and patterns of input and output mixes.

Table 1
Characteristics of Health Care Sector

	1961	**1971**	**1981**	**1999**
1. Total Expenditure on Health Care/GDP				
Canada	5.8	7.2	7.3	9.3
United States	5.2	7.1	9.0	12.9
2. Public Health Care Expenditures/Total (%)				
Canada		73	76	71
United States		37	41	45
	1961	**1971**	**1981**	**1993**
3. Health Care Labour Force/Total Labour Force (%)				
Canada	3.3	4.1	4.6	5.7
United States	2.6	3.9	5.4	7.0
		1971	**1981**	**1992**
4. Physicians' Mean Income/Mean Income of All Workers				
Canada		5.1	3.4	3.6
United States		5.0	4.6	5.5

Table 2
Input Characteristics

	1971	1981	1999
1. Administration/Total Health Care Expenditures (%)			
Canada	1.9	1.7	1.9
United States	4.5	5.2	6.1
2. Pharmaceuticals/Total Health Care Expenditures (%)			
Canada	10.8	8.9	15.4
United States	11.9	8.8	11.0
	1971	**1981**	**1993**
3. GPs/Total Health Care Employment (%)			
Canada	4.2	3.9	4.1
United States	3.6	2.5	2.1
4. Nurses/Total Health Care Employment (%)			
Canada	33.3	31.1	32.2
United States	26.1	24.7	23.5

Table 3
Capital Equipment

	1990	**1997**
1. CAT Scanners		
Canada	198	245
United States	3652	3667
2. MRI Machines		
Canada	19	53
United States	926	2046
3. Lithotriptors		
Canada	10	14
United States	323	627

Table 4
Comparative Health Status

	1961	1971	1981	1997
1. Life Expectancy at Birth				
Canada				
Males	68.4	69.3	71.9	75.8
Females	74.3	76.4	79.1	81.4
United States				
Males	67.1	67.4	70.4	73.6
Females	73.6	75.0	77.8	79.4
2. Additional Years of Expected Life at 65				
Canada				
Males	13.6	13.8	14.6	16.3
Females	16.1	17.5	18.9	20.1
United States				
Males	13.1	13.2	14.3	15.9
Females	16.1	17.1	18.6	19.2
3. Infant Mortality (Deaths/1000 live births)				
Canada	27.2	17.5	9.6	5.5
United States	25.3	19.1	11.9	7.2

	1997
4. Perceived Health at Age 65*	
Canada	
Males	75.0
Females	78.5
United States	
Males	73.2
Females	72.3

* Percentage of population aged 65 reporting themselves to be in good health (1998)

Table 5
Population Characteristics

	1994	
1. Percent of Males That Are Obese		
Canada	13.3	
United States	19.9	
2. Percent of Females That Are Obese		
Canada	13.1	
United States	25.1	
	1980	**1997**
3. AIDS (Incidence Per Millions)	0.2	22.0
Canada	5.0	217.0
United States		
	1971	**1997**
4. Road Traffic Injuries Per Million		
Canada	6412	7376
United States	9754	12500
	1980	**1997**
5. Homicide Deaths per 100,000		
Canada	2.0	1.4
United States	10.2	7.5

Table 6
Indirect Productivity Measures

	1971	1981	1991	1998
1. Total In-Patient Beds/1,000				
Canada	6.9	6.9	6.3	4.1
United States	7.5	5.9	4.8	3.7
2. Inpatient Care /Total Health Care				
Canada	55.3	53.5	48.8	43.1
United States	45.0	49.7	45.2	41.3
3. Outpatient Care/Total Health Care				
Canada	25.2	25.9	27.1	27.2
United States	27.9	28.2	32.0	33.1
			1990	**1998**
4. Angioplasty Procedures/100,000				
Canada			37	70
United States			113	339
5. Bypass Procedures/100,000				
Canada			30	65
United States			137	203

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