HEALTH INSURANCE IN THE BAHAMAS

An Analysis of the Blue Ribbon
Commission's Proposals
and an Examination of Alternative
Policy Options

Prepared by

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The Nassau Institute

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EXECUTIVE SUMMARY

The Bahamas' government is currently on the path towards creating a universal access health insurance program for all Bahamians. The experiences of the world's most developed nations, the majority of which guarantee access to health insurance regardless of an individual's ability to pay, as well as economic studies of health care and health insurance provide a wealth of information on how best to structure such a program. It is this evidence that should ultimately guide policy development in The Bahamas. Not following the guidance contained therein will likely result in unnecessary and potentially costly consequences.

Are the policies/options chosen by the Blue Ribbon Commission on National Health Insurance the best options for The Bahamas based on economic research and international evidence?

After adjusting the data for the age of the population in each nation, since older populations will naturally spend more on health care services because of the health needs that are necessitated by the ageing process, the data shows that The Bahamas current health care program is more costly than those found in any of the world's most developed nations except the United States. This high level of health expenditure purchases relatively good access to health care when compared to citizens living in the world's most developed nations and to citizens living elsewhere in the Americas. On the other hand, the quality of care in The Bahamas is below that available in most developed nations despite the relatively high expenditure on health and availability of care. When compared to less developed nations in the Americas, The Bahamas' health system manages a somewhat better but still average relative performance on measures of quality. Put simply, The Bahamas current health care program is expensive and delivers relatively good access to treatment, but the quality of that treatment does require some attention as it is below what might be reasonably expected for that level of income, health expenditure, and relative access to care.

A key metric for The Blue Ribbon Commission's (BRC) proposal then, is whether it can improve the quality of health services in The Bahamas without increasing cost or adversely affecting income growth. Unfortunately, the BRC's proposals, if implemented verbatim, would create a substandard health care program whose cost far exceeded what was necessary to deliver the level of quality/access that would be provided to residents of The Bahamas.

More specifically, the BRC's 8-part proposal contains several important flaws that must be recognized by Bahamians. First, the BRC has called for a health care program that provides "equal access to comprehensive health care" (BRC, 2004:1). In practice, the use of this term could be construed to mean the prohibition or strict regulation of privately purchased care in the Bahamas, which is inefficient and could lead to a lower standard of care.

The BRC has also proposed providing emergency care at no charge to all including illegal immigrants and the transient population, as well as providing treatment for communicable diseases at no charge to illegal immigrants. While the idea of ensuring that all have access to care in times of need might be attractive, it does bring with it serious cost concerns and concerns about foreigners in need of high cost services coming to the Bahamas illegally for 'free' treatment in the emergency room (possibly for both emergency and non-emergency cases). Also, though providing treatment for communicable diseases makes some sense for public health reasons, the BRC's proposal may be too generous/broad and might result in illegal immigration by those seeking low-cost care for HIV/AIDS.

Further concerns about the BRC's proposal revolve around the fact that the benefit package being recommended would be at least as generous as programs in developed nations. The world's most developed nations, and many less developed nations, are struggling with the implementation of newer technologies in their health programs because of the effect this has on aggregate spending. While new medical technologies (including pharmaceuticals) can and do provide better health outcomes and more comfortable treatment for patients, their cost must somehow be tackled by any NHI program. In this regard, the BRC's proposals emulate poorly thought out policies that have been implemented in other nations.

The question of affordability & sustainability of a generous and comprehensive program is also an important one that must loom large in the discussion of NHI in The Bahamas. All indications are that health expenditures in large developed nations are growing significantly faster than their overall economies, bringing the sustainability of public health expenditures into question. Given that the future growth rates of NHI spending in the Bahamas are likely to be similar to those in developed nations, their sustainability is an even greater issue given The Bahamas slower growth economy.

Also, the proposed financing model for NHI will have an impact that is not dissimilar from a new tax on economic activity. Additionally, the BRC's proposal that employers share in the cost of employee health premiums results in an unnecessary restriction on the marketplace, and the cost will still ultimately be paid by employees through lower wages and/or benefits.

The future cost of comprehensive NHI is also an important question to consider. First, the ageing of The Bahamas' population will increase the cost of health care services because of the well known relationship between health expenditures/needs and age. That increase will require significant subsidies from the younger and healthier in the future. There is also the question of how the implementation of NHI will affect the utilization of health care, the provision of health care, and the introduction of technology, and thus ultimately the cost of health care services.

Provider payment is another area where the BRC has recommended a policy regime that is not in keeping with best practice. The evidence on physician remuneration suggests that capitation is, on balance, inferior to a payment regime based principally on fee-for-service. Thus, the BRC's recommendation that The Bahamas move away from fee-for-service remuneration of physician services is ill-advised. The BRC's recommendation that hospitals and facilities be paid by a capitation-based budget (contracting with a capitation based payment) is also ill-advised because such a payment scheme disconnects funding from the provision of services to patients, and so incentives to provide a higher or superior quality of care to patients are virtually absent.

Finally, handing over management of the proposed National Health Insurance (NHI) program to the National Insurance Board (NIB) will result in a less efficient system than would exist if a private contractor or private competitive marketplace were to administer the program. The fact that the NIB operates inefficiently should come as no surprise – a vast literature and body of evidence exists showing that government and government business enterprises tend to be inefficient service providers compared to market equivalents. The BRC's proposals are not a solution to the problems inherent in the public provision of services.

Recommendations

The following recommendations are based on the evidence examined throughout this report. Their implementation would result in a more cost-effective and efficient health care program than that which would result from following the BRC's recommendations.

1.   Hospitals, clinics, and other health activities/services should be privatized.

2.   Other government activities related to the health sector should be subjected to a competitive bidding process where private sector and public sector bidders are treated equally.

3.   Accreditation/certification of facilities and caregivers should be handled by a private third party.

4.   Hospital and facility care should be funded using a prospective fee-for-service, or case payment, system.

5.   Physician care outside of hospitals should be funded fee-for-service.

6.   Patients must be required to share in the cost of NHI-funded services they consume through either co-payments or deductibles. Low income populations should be exempt from this requirement.

7.   NHI should be provided by both public and private insurance companies in a competitive marketplace. Bahamians should be required to purchase insurance by law, while those who cannot afford insurance should be given vouchers to purchase insurance from the provider of their choice. NHI insurance providers should also be permitted to offer a multitude of insurance options and not be regulated to the extent that consumer sovereignty or insurance plan flexibility is needlessly restricted.

8.   A private parallel health care sector must continue to exist and should be subject to a bare minimum of regulation.

Introduction

On January 31, 2004, the Blue Ribbon Commission on National Health Insurance presented its report to the Prime Minister of The Bahamas. The report contained a comprehensive review of both the current health program in The Bahamas as well as a proposal for a National Health Insurance program (NHI). The Commission's report, along with a cost and financing analysis completed in 2005, is supposed to form the basis for a change in government policies that will see the introduction of a universal access health insurance program for all citizens of The Bahamas.

The intention behind all of this work, guaranteeing access to health insurance regardless of an individual's ability to pay, also underlies the health policy regimes of the majority of the world's most developed nations.[1] Notably, most of their programs have been thoroughly studied and reformed since they were first introduced. Put another way, the Bahamian pursuit of universal access health insurance is neither revolutionary nor unique, nor is it occurring in a world where evidence on how to best structure a health program is scarce.

There is a wealth of evidence from developed nations on both the economic costs of introducing new tax-funded initiatives and the costs/benefits of various health policy options. Evidence on whether or not the introduction of a national health insurance scheme is necessary to ensure that all individuals have access to treatment regardless of their ability to pay for it is also available from economic studies of insurance and markets. This evidence should be what ultimately guides policy development in The Bahamas. Not following the guidance contained therein will likely result in unnecessary and potentially costly consequences.

The Bahamas is not the first nation to consider implementing a national health insurance program, so it should not needlessly suffer the ills endured by so many flawed attempts that came before it. Also, an evidence based approach to health care policy is vital if The Bahamas wishes to ensure that the ultimate set of policies introduced is the best option available.

This examination of the health care program in The Bahamas is broken down into five sections. The first examines the case for NHI in principle. The second section provides an overview of the current state of health care in The Bahamas. In this context, section 3 analyzes the Blue Ribbon Commission's proposal in detail, and considers whether or not the policies/options chosen by the Commission are the best options for The Bahamas based on economic research and international evidence. Section 4 briefly examines the world's most successful health care programs, all of which can serve as a potential guide for policy in The Bahamas. Finally, section 5 offers several policy recommendations for The Bahamas based on the international evidence and economic research examined in sections 1, 3, and 4.

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1   Defined here as member nations of the Organisation for Economic Cooperation and Development (OECD)

Section 1: The health care system and a population's health

A health care system generally encompasses, for the most part, acute care and physician services. There have been numerous studies, including one by the World Health Organization, showing that there is little or no correlation between the health care system (spending) of a country and a population's health status (Ramsay, 2001; WHO, 2000; Oxley and MacFarlan, 1994). This lack of connection between spending and health status explains why policy discussions about redirecting resources to public health and primary care are common, as there is evidence that public access to sanitation, safe water, immunization, screening services such as mammograms, and other preventive care have a positive effect on a population's health (see for example WHO, 2000; Ramsay, 2001).

Given the tenuous connection between the health system and population health, government really should focus on simply ensuring universal access to and the availability of basic health care. Beyond this, government should be concerned only with ensuring that those who cannot afford to pay for medical services have access to them when they require care and, perhaps, requiring their citizens purchase (public or private) health insurance for catastrophic events. One of the main, theoretical, reasons for extending government intervention into health care further than these core areas is adverse selection.

Insurance and Adverse Selection

Insurance initially developed as a market response to the need to minimize the impact of a catastrophic event. The genius of insurance is to share collectively the financial risk of a catastrophic event occurring that could not easily be afforded by a business or by individuals. Suppose the residents of a neighbourhood of ten households expect that one of the houses in the neighbourhood will burn down. However, they do not know which one. It costs less for all households to pool some money to pay to rebuild the one house that burns down than for each household to save enough money to replace its house if it burns down, given that there is only a 10% chance of this occurring for each household.

Insurance markets have developed in the health care sector to deal specifically with the risk of illness. People pay a fee to an insurer so that, in the case of a major health event or an injury, the insurer will pay them a certain amount of money, thereby reducing the financial cost to them of such an event. In the health insurance market, many people (the pool) share the risks of needing health care services so that, when something terrible happens, an individual is compensated for their loss out of the fees paid by everyone who insured themselves against this risk.

Adverse selection is the negative economic consequence that can result from an asymmetry in information, where purchasers of insurance (those buying into the pool) know their own likelihood of needing the insurance and the insurance providers (the managers of the pool) do not. In the case of medical insurance, people in poor health or those who have a family history of severe illness have an incentive to hide their higher risk from the insurance pool so as to avoid paying the higher insurance premiums that would be required to cover that risk adequately. At the same time, insurers will want to charge the ill more for an insurance policy than they will the healthy, because the cost of providing them insurance is higher (insurance policies are priced according to the likelihood and cost of illness plus an administration charge). If the insurers are unable to differentiate between high-risk and low-risk individuals, they cannot offer a fair policy to either group: the healthy will not purchase an insurance package priced for the ill and the insurance company will lose money if it sells a package priced for the healthy to the ill. Further, if the insurance company offers any policy in between the "fair" rates for the ill and the healthy, the healthy are likely to leave the insurance pool, thus raising the average risk level of the pool and forcing premium prices upward. This spiral of adverse selection, wherein risky people seek insurance from insurers who do not want to insure them and healthy people avoid insurance from insurers who want to insure them, can theoretically cause private markets in health insurance to fail (Evans, 1984; Folland *et al.*, 2001).

When government intervention forces the entire population to purchase insurance, all risks are pooled—high-risk individuals are pooled with low-risk individuals—such that all individuals pay an insurance premium based on the average risk level of the pool. In this way, the problem of adverse selection is overcome by preventing low-risk individuals from leaving the insurance pool and allowing high-risk individuals into the pool at a lower rate than would be necessary to insure them otherwise.

But, is this community pooling of risk necessary to overcome adverse selection? Though the empirical evidence on adverse selection is limited, Cawley and Philipson (1999) have found that, at least in the life insurance market, adverse selection may not actually occur in the modern marketplace. Noting that a private insurance market can exist in the presence of adverse selection if an insurer charges higher prices for increasing quantities of insurance (the opposite of bulk discounting), the authors find that unit prices for life insurance actually fall once readily apparent risk characteristics (age, sex, smoker or non-smoker, measured health status, income, and wealth) are accounted for. Further they find (accounting for a number of factors) that low-risk individuals actually purchase more insurance than high risk individuals (Cawley and Philipson, 1999). This result casts serious doubt on the claim that a government insurance program is necessary to overcome information asymmetry problems (Zelder, 2000).

It can and has been argued that the health care market is different from other markets because of the severity of market failures: uncertainty of incidence of illness, economies of scale, insufficient evidence for rate making, moral hazard, and asymmetric information. For the discussion of public policy however, "market failure" should be used to describe instances in which the government can improve welfare in a way the market cannot. The mere existence of problems with the market is not reason enough to support government intervention, especially given that there has been documentation of serious government failures: poor public accountability, information asymmetry, abuse of monopoly power, and failure to provide public goods. (For example, see Clemens *et al.*, 2004, Tullock *et al.*, 2002; Harding and Preker, 2000; Mitchell and Simmons, 1994.)

Section 2: The Bahamas' Health Care System

There are many ways of organizing a health care system to achieve the goal of improving the health of the population. Despite many structural differences, most systems take into account three basic principles: affordability or cost, access to care, and quality of care. This section provides an overview in numbers of how The Bahamas currently fares in these areas.

It should be noted that The Bahamas' GDP per capita was larger than that in all nations in the Americas except Canada and the United States in 2002/2003, the most recent year for which data is available from PAHO.[2] In addition, GDP per capita in the majority of nations in the Americas is below The Bahamas' GDP per capita by a significant margin (PAHO, 2006).[3] The Bahamas GDP per capita is also high enough to rank in the lower third among the member nations of the Organisation for Economic Cooperation and Development (OECD), also known as the world's 30 most developed nations (OECD, 2005; PAHO, 2006)[4]. Put simply, The Bahamas has a GDP per capita that is high compared to its neighbours, and that is comparable to that in less-wealthy developed nations. Thus, the comparisons below primarily examine The Bahamas' performance relative to the world's most developed nations. Comparisons to other nations in the Americas (many of whom have incomes well below those found in the developed world) are also made where information on developed nation performance is not available in a comparable format.

Cost

In 2001, the most recent year for which data is available, total health spending in The Bahamas was approximately $343 million or roughly 6.9% of the total value of goods and services produced in The Bahamas that year (also known as the gross domestic product or GDP) (BRC, 2004). The government's share of this total expenditure was about 48% or approximately $164 million or 3.3% of GDP. Private health expenditures in 2001, including private health insurance expenditures and out-of-pocket spending, added up to 52% of total spending or approximately $180 million or about 3.6% of GDP (BRC, 2004). The summation of spending is shown in table 2.1.

Total health care expenditures as a percentage of GDP can be compared between nations in order to gain a better understanding of the relative expenditure on health care in The Bahamas. Comparing the percentage of GDP spent on health care con-

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2   This comparison includes only those nations for whom information was available in PAHO, 2006. GDP per capita information was not available for Anguilla, Aruba, Bermuda, Cayman Islands, Cuba, French Guiana, Guadeloupe, Martinique, Montserrat, Netherlands Antilles, Puerto Rico, Suriname, Turks and Caicos Islands, and the Virgin Islands (US and UK).

3   The Bahamas' GDP per capita (US$, PPP) was $16,852 in 2002. The average GDP per capita (US$, PPP) in the Americas, not including the United States or Canada or those nations for whom data was unavaialble, was $7,156 (PAHO, 2006).

4   For this comparison, 2002 GDP per capita (PPP value, $US per capita) for The Bahamas from PAHO, 2005 was compared with 2002 GDP per capita (US$ PPP) for OECD nations from OECD, 2005. The Bahamas ranked 26th overall, ahead of Hungary, Slovak Republic, Poland, Mexico, and Turkey.

trols for the level of income in the countries compared and shows what share of total production is committed to health care expenditures in each nation. The percentage of GDP statistic also avoids flawed comparisons with low expenditures in less developed nations and does not overvalue high expenditures in relatively rich countries like Canada and Germany.

In order to compare health spending in The Bahamas with that in developed nations, it is also necessary to account for the fact that there are very few Bahamians over the age of 65 relative to the proportion of the population over that age in developed nations (table 2.2). Notably, the years of life lived after age 65 are the most costly in terms of health expenditures because of the health needs that are necessitated by the ageing process. One study has suggested that individuals consume more than 50 percent of their lifetime health expenditures after the age of 65 (Brimacombe *et al.*, 2001). Having few people over this age threshold, as is the case in The Bahamas, will mean naturally lower levels of expenditures while nations that have many older citizens will naturally have higher health expenditures. Thus, a comparison of health spending between nations should account for this natural increase in some way.

Esmail and Walker (2005) have produced an age-adjustment methodology, originally employed to compare health expenditures and access to health services in developed nations, which can be used here to allow for a more appropriate comparison of spending in The Bahamas with that in developed nations. The methodology effectively normalizes health spending in a given nation to the level it would be if that nation had the average share of population over age 65. The calculation itself, shown in a footnote below, is based on a measurement of Canadian spending growth related to the ageing of Canada's population, and estimates that there would be a 69.8 percent growth in the share of GDP spent on health care for a 100% increase in the share of the population over age 65 (Esmail and Walker, 2005).

As shown in table 2.3, health spending in The Bahamas tied for first among developed nations in 2001 after age-adjustment, suggesting that the health care program is expensive. Put another way, The Bahamas' current health care program is more costly than those found in any other developed nation except for the United States once the relatively small proportion of Bahamians over age 65 is accounted for.[5]

Access

With respect to the availability of physicians, The Bahamas is doing fairly well when compared with the world's developed nations. Overall, The Bahamas ranks third on

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5   The Age Adjustment Formula

The formula is built from the following components:

1. (Senior's Proportion of Population Base Country) = B
2. (Senior's Proportion of Population Estimated Country) = E
3. (B – E) / E =
4.   * = ; where   is the adjustment factor estimated to be the increase in health expenditure related to a 100% increase in the seniors' share of population. A study of health spending in Canada estimates that = 69.8% (Esmail and Walker, 2005)
5. (Health Expenditure (%GDP) Estimated Country) = π
6. (+ 1) * π = Adjusted Health Expenditure (%GDP)

The Calculation is as follows (for The Bahamas):

1.   = (13.9-5.2) / 5.2 = 1.67 (167%)
2.   = * = 1.166
3. (+ 1) * π = 14.9

Source: Esmail and Walker, 2005, calculations by author

an age-adjusted basis with 3.6 physicians per 1,000 population (table 2.4), well ahead of the 30-nation average of 2.9.[6, 7]

Another indicator of access to health care is the availability of high-tech medical devices. Such devices are costly to purchase/implement, but can improve medical outcomes by providing greater information on a patient's disposition thus allowing for more accurate diagnosis and treatment. Greater numbers of these machines in a given nation suggests that patients have greater access both to high-tech diagnostic services and to modern/advanced health care services in general. Unfortunately, unlike in comparisons of developed nations, information on the number of magnetic resonance imaging machines (MRI), computed tomography scanners (CT), and positron emissions tomography scanners (PET) are not available for The Bahamas in any major health information databases. However, information on the current location and number of MRI machines in The Bahamas is known[8] and can be compared with recent information on the number of machines in developed nations. This comparison is shown in tables 2.5 and 2.6.

With respect to the availability of MRI machines The Bahamas ranks 11th among the 25 nations compared in table 2.5. For CT scanners, The Bahamas performs a somewhat better 7th among the 24 nations compared in table 2.6, with an above average inventory of this diagnostic technology.

The lack of comparability between international databases and databases that include information for The Bahamas makes further comparisons with OECD nations difficult. However, it is possible to examine other indicators of the accessibility of health care in The Bahamas and compare them with those for other Latin American and Caribbean nations to see if The Bahamas is as far ahead of the others as its health spending and GDP per capita numbers suggest it should be. It should be noted that the information for the following comparisons of nations in the Americas have not been age-adjusted, due to the developing nature of many of the economies and markets. The adjustment methodology produced by Esmail and Walker (2005) was intended to normalize statistics for the health programs of developed nations, and may not be useful when comparing statistics from developing economies. However, a consideration of the impact of age-adjustment will be presented qualitatively in discussing The Bahamas' relative performance where appropriate. As such, it is important to note that The Bahamas ranks 25th of 48 nations in the Americas in the share of population over age 60 (table 2.7), and has a below average share of population in that age category (PAHO, 2006).

With respect to immunization rates, Bahamians have fairly good access to care. In each of the three categories of immunization available from PAHO where there is data for The Bahamas, The Bahamas health system manages to provide coverage for nearly the entire population. In each case, the coverage in The Bahamas is above the PAHO average for those nations for whom data are available (table 2.8).

In terms of hospital capacity, The Bahamas ranks 14th among the nations in the Americas with 3.4 hospital beds per 1,000 population (table 2.9). This compares to an

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6   The age-adjustment calculation used for spending has been applied to physician to population ratio. This is to ensure that this comparison of access to health care accounts for naturally higher demand in older nations and naturally lower demand in younger nations like The Bahamas. The underlying assumption behind the use of the spending adjustment formula is that increased use of services (physicians, technology, etc.) will rise roughly proportionally to the increased use of all services. This is the same process employed for the comparison of developed nations' health programs by Esmail and Walker (2005).

7   It should be noted that, before age-adjustment, The Bahamas ranked third last ahead of only Mexico and Korea with 1.67 physicians per 1,000 population.

8   According to Lowe (2006), The Bahamas has one MRI machine (Doctors Hospital) and three CT scanners (Doctors Hospital, Princess Margaret Hospital, and The Bahamas Heart Centre).

average of 2.9 for those nations for whom data are available, and compares favourably to Canada's 4.3 when the relatively young age of The Bahamas' population is taken into consideration. In total, including consideration of the relatively low share of The Bahamas population over age 60 relative to other nations in the Americas, access to hospital beds in The Bahamas is well ahead of a number of nations and easily comparable with that in Canada or the United States.

It should be noted that an increased reliance on day surgeries (where patients do not stay overnight in hospitals), reduced hospital lengths of stay, and greater use of pharmaceuticals that substitute for hospital treatment can affect the use of hospital beds and allow some nations to deliver more health services per bed than others. Information on hospital capacity that accounts for these facts is not available for international comparison. However, the average length of stay reported for Princess Margaret Hospital and Rand Hospital by the Blue Ribbon Commission compares favourably with the average lengths of stay in OECD nations (BRC, 2004: 51; OECD, 2005).

The use of hospitals, on the other hand, is relatively low in The Bahamas in absolute terms when compared with other nations. More specifically, the hospital discharge rate (the number of patients discharged from hospitals—a measure of the utilization of inpatient services) in The Bahamas was 78.4 per 1,000 population in 2002 compared to an average of 87.6. In this comparison The Bahamas ranked 26th of 44 nations for whom data was available (table 2.10). However, this utilization rate taken in the context of a very young population is not significantly different from that in Canada (91.0) or the United States (113.4), suggesting a developed-world level of inpatient service utilization.

In summary, access to health care in The Bahamas appears to broadly reflect the relatively high level of health expenditure in The Bahamas. It is, however, important to note that The Bahamas' GDP does not rank among the world's wealthiest nations and so Bahamians may require more health care naturally than citizens in wealthier nations such as Switzerland or Canada due to the correlation between lower income and poorer health (CIHI, 2004). This would negatively affect the adequacy of this relatively good level of access. Still the overall picture is one of fairly good access to the health system though aggregate statistics may disguise disparities among the population.

Quality

The fundamental purpose of a health sector in an economy is to provide health services for the population's benefit. This aspect of health services is the principal reason for much of the study in the field and the debate about the characteristics of health systems from all sides. Unfortunately, while there is a great body of literature on the economic aspects of health service provision and on the principles in health care provision (from each according to ability, to each according to need), comparatively little work has been done on the actual ability of health care systems to provide quality care for patients and the population in general.

In attempting to determine whether health care services are being provided at a level commensurate with the amount of money spent or commensurate with the level of quality that the current desire for change would suggest in The Bahamas (higher levels of quality would likely result in a lesser desire for change), it is important to compare the quality of health services delivered in The Bahamas to that delivered in other nations. This can be done through the comparison of measures that examine the abil-

ity of the health care system to provide a healthy long life, low levels of mortality from disease, and effective treatment for terminal illnesses. It should be noted, as discussed in section 1 above, that the quality of health services delivered does not necessarily improve the health of the population as measured by population health statistics such as life expectancy. However the quality of health services can affect the likelihood of surviving an illness or disease known to be treatable. In other words, a comparison of statistics designed to measure health outcomes that are closely related to the quality of health care delivered can provide a reasonable basis on which the quality of health services can be judged.

One of the many metrics of health system quality is the ability to prevent death among children, particularly younger children. There are two basic measures of this dimension of quality that are commonly available for comparison between nations: infant mortality and mortality before age 5. Each measures only mortality in aggregate and is based on the assumption that death at the youngest ages should be preventable.

Infant mortality measures the number of deaths among children less than one year old as a rate per 1,000 live births. Though the infant mortality rate can be affected by immigration from poorer countries, unhealthy outlier populations, and other population demographics (Seeman, 2003), it can also serve as an indicator of a well-functioning health care system. Recent work from the OECD on the relationship between health care resources and health outcomes makes the most pertinent case for inclusion of this statistic as a measure of health system performance. Zeynep Or (2001) found that OECD countries with more doctors perform better on infant mortality statistics: a 10% increase in the ratio of physicians to population can lead to a 6.4% reduction the rate of mortality. Further, Or notes that these mortality statistics are a useful measure of health system performance, since "the performance of a health system is often judged by its capacity to prevent deaths at the youngest ages" (Or, 2001).

Tables 2.11 and 2.12 compare the infant mortality rate in The Bahamas to those in OECD nations and other nations in the Americas. When compared with developed nations The Bahamas performs relatively poorly on infant mortality, ranking 28th among the thirty nations in table 2.11. While this performance is well below the average, it should be noted that The Bahamas' infant mortality rate is improving faster than the average.[9] Compared to other nations in the Americas however, The Bahamas ranks 18th among the 49 nations in table 2.12. In this comparison, The Bahamas' infant mortality rate is well below the average (14.3 vs. 20.9) but still well behind the leading nations (the top 10 nations have an average infant mortality rate of 7.6). The rate of improvement in The Bahamas is only slightly greater than the average for nations in the Americas (12.8 percent vs. 12.0). Overall, The Bahamas' performance on infant mortality is neither impressive nor disappointing, though the rate is lower than might be expected given The Bahamas' relatively high health expenditure and relatively large physician population.

The Bahamas performs similarly in mortality of children under the age of 5: compared to other nations in the Americas, The Bahamas ranks 14th and well behind the top 5 nations compared. However, though the mortality rate in The Bahamas is well above that in the top 5 nations, it is also well below the average mortality rate for the Americas (table 2.13).

The World Health Organization has constructed an index of equality of child survival that can be used to consider whether the incidence of child and infant mortality falls

9   The infant mortality rate and five-year performance for first-ranked Iceland should be treated with caution as the rate varies significantly from year to year due to the small population there.

disproportionately on children from lower income families, or whether mortality rates are relatively equal between income groups. A calculated rate of 1 in the index means that the child mortality rate is equally distributed among the population in a given nation, while rates below 1 show increasing inequality in the incidence of mortality. In this comparison, The Bahamas again puts in a middle of the road performance, ranking 39th among OECD nations and countries in the Americas for whom the calculation has been performed (table 2.14). Notably, The Bahamas' performance broadly reflects its income position: the equality rate of mortality in The Bahamas is above the Americas average but below the average for OECD nations.[10]

Unfortunately, while the use of infant and child mortality as measures of the effectiveness of a health system can provide valuable insight, it also includes a number of effects that are not related to the health system. Measures such as crime, pollution, water quality, and public sanitation systems also have an effect on survival making it difficult to specifically isolate the effect of the health care system through these measures. A second set of measures that focus on the burden of mortality from a specific subset of health conditions is likely to give more accurate insight into the performance of The Bahamas' health care system itself by removing many external effects on longevity that are included in infant and child mortality. In other words, the following comparisons are more likely to measure the performance of the health system itself than simpler measures of survival.

A measure known as Mortality Amenable to Health Care can be used to compare the actual quality of health care systems by examining their ability to prevent deaths from conditions where such an outcome should be preventable through appropriate medical intervention. Nolte and McKee (2003) recently published a comparison of a number of OECD countries on this measure using detailed statistics on causes of death published by the World Health Organisation, information that has been updated using more recent data for publication in this report. The comparison produced by Nolte and McKee also subdivided mortality data by the age at which death occurred, in order to more closely capture the actual quality of health services. In many cases, only childhood deaths were considered, since deaths at older ages were suspected of resulting from another medical process. In addition, the measurement of mortality for some illnesses was capped at higher ages in order to accommodate evidence relating to the effectiveness or potential ineffectiveness of modern medicines in dealing with these conditions at more advanced ages. An age limit of 75 years was used for most other statistics (Nolte and McKee, 2003). The specific causes of death and age ranges considered by Nolte and McKee, and used in this updated comparison, are shown in table 2.15.

As this breakdown relies on more detailed information on the causes of death than that used to develop aggregate mortality statistics above, only 19 OECD countries can be compared with The Bahamas in table 2.16. This comparison of health system performance also includes 50% of the mortality from ischaemic heart disease (IHD), though Nolte and McKee were unsure whether it should be included in their comparison. Since the relationship between health services and reductions in mortality from IHD has not been confirmed, Nolte and McKee felt that comparisons with and without the statistic should be presented. They also note, however, that there is growing evidence showing that up to half of premature mortality from IHD may be linked to the effectiveness of health services (Nolte and McKee, 2003). In addition to this growing evidence on the links between health services and IHD, the OECD has noted that

10 This finding echoes an earlier one showing that the equality of mortality is correlated with the level of economic freedom, which itself has been shown to be related to income (Esmail, 2003; Easton and Walker, 1997).

the health care policies in countries can create variations in treatment patterns for IHD and access to technologies and pharmaceuticals for IHD patients. It is for these two latter reasons that the measures presented here include 50% of mortality from IHD. Finally, the measures of mortality below have been standardized for population age profiles.

When compared with the performance of health programs in select developed nations, The Bahamas' health care program performs relatively poorly on this measure. The Bahamas ranks 20th among the 20 nations compared in table 2.16, with a mortality rate that is roughly 70 percent greater than the average mortality rate. This level of performance is well below that which should be expected in a nation that has a relatively high level of health expenditure and that has relatively good access to care.

Two additional comparisons on health system performance can be found in a comparison of cancer incidence and mortality rates. Using data from the GLOBOCAN 2002 database (Ferlay *et al.*, 2004), it is possible to determine the estimated number of deaths that would occur as a result of breast cancer and colorectal cancer in 2002 as a proportion of the number of the estimated new cases that would occur in that year. This data is useful in estimating the proportion of patients who will survive a bout with these cancers in a given country. In other words, this estimate can provide an estimate of the proportion of patients who are likely to be cured from a disease, which is often considered a basic measure of the effectiveness of health care practices (Berrino *et al.*, 1999).

Ratios for estimated mortality from breast cancer in 2002 to estimated incidence of breast cancer in 2002, using age-standardized ratios to eliminate any bias from older or younger populations, are given in tables 2.17 and 2.18. Although these summary statistics do not measure the true underlying chances of surviving breast cancer in a given country, they can be used as comparative measures to give a rough approximation of the underlying efficiency of the health system in identifying and treating this disease. In this comparison, The Bahamas also performs relatively poorly, managing to outperform only two OECD nations. When compared the other nations in the Americas, The Bahamas manages a somewhat better though still below average performance of 11th of 30 nations for whom data is available.

Yet another comparison of cancer treatment outcomes can be made for cancer of the colon and rectum. This type of cancer is a major cause of both mortality and morbidity in western countries for those over the age of 50, and is second only to lung cancer as one of the most common forms of cancer in the developed world (Semmens and Platell, 2001; Farrands and Britton, 1984; Ferlay *et al.*, 2004). The likelihood of surviving colorectal cancer is highly dependent on early detection and treatment of the disease. This is confirmed by medical research, which indicates that the five-year survival rate of patients with early tumors can be better than 90%, while those with tumors that have spread substantially falls below 50% (Farrands and Britton, 1984; Lefall, 1981).

Due to the link between medical intervention and survival rates from colorectal cancer, the ratio of mortality to incidence of the disease within a country can be used as a rough measure of the general effectiveness of that country's health care system. Ratios for estimated mortality from colorectal cancer in 2002 relative to estimated incidence in 2002, using age-standardized ratios to eliminate any bias from older or younger populations, are given in tables 2.19 and 2.20. Again, as in the case of breast cancer above, these ratios do not measure the true underlying chances of surviving a bout with colorectal cancer but do give a rough approximation of the comparative underly-

ing efficiency of the health system. Once more The Bahamas falls behind most developed nations in the health system's ability to deal with disease, ranking 28th among the 31 nations compared. As was the case in breast cancer mortality, The Bahamas fares somewhat better when compared with other nations in the Americas but still manages a below average performance.

Conclusion

The Bahamas commits a relatively large share of its income to health care annually and yet does not stand out when compared with other nations in either access to services or the quality of those services. Access to care is neither excellent nor poor in The Bahamas, though statistics show that Bahamians do enjoy relatively good access to health care when compared to citizens living in the world's most developed nations and to citizens living elsewhere in the Americas. On the other hand, the quality of care in The Bahamas is below that available in most developed nations despite the relatively high expenditure on health and availability of care. When compared to less developed nations in the Americas, The Bahamas' health system manages a somewhat better but still average relative performance on measures of quality.

It is interesting to note that the health system's performance on quality is broadly reflective of The Bahamas' relative income position: above that of many less developed nations in the Americas but behind the majority of OECD countries. This finding reflects the well known relationship between income and health status, suggesting that income growth should be an important goal for The Bahamas from a health viewpoint. However, there is still significant work that must be done with regards to the quality of health services if The Bahamas' performance is to more closely match its relative income position.

In summary, The Bahamas health care program is costly and delivers relatively good access to treatment. But the quality of that treatment does require some attention as it is below what might be reasonably expected for that level of income, health expenditure, and relative access to care. The important question to ask then is: will the Blue Ribbon Commission's proposal for health reform and the introduction of NHI improve the quality of health services in The Bahamas without increasing cost or adversely affecting income growth?

Section 3: The Blue Ribbon Commission's Proposal

The Blue Ribbon Commission's (BRC) report laid out 8 proposals for health care reform that the government should adopt in order to create what the BRC felt would be the best structure for a health insurance program for all Bahamians. The analysis below examines each of these recommendations.

Recommendation #1: *NHI should be Universal*

The BRC has recommended a health care program that provides all Bahamians "equal access to comprehensive health care" (BRC, 2004: 1). The BRC has also recommended coverage for legal but non-national residents under the same terms as conditions as Bahamian citizens, as well as a guarantee of access to emergency care regardless of ability to pay for both the transient population and illegal immigrants. In addition, treatment for communicable diseases is to be provided to illegal immigrants regardless of ability to pay.

The first important concern that must arise from this recommendation is the use of the term equal. There are two reasons for this concern. First, the use of this term could be construed as a recommendation for the prohibition or strict regulation of privately purchased care in The Bahamas. This would be the only way to ensure that care is provided to all Bahamians on income-neutral terms – no Bahamian would receive care of a higher standard than that which could be afforded for all.

Support for this concern can be found in several sections of the report. On page 105, for example, the BRC recommends an examination of the areas for supplementary insurance and a determination of the role for private insurance in The Bahamas in order to ensure financial stability and control for NHI and includes in its second recommendation that private health insurers be regulated (BRC, 2004). This must be taken in the context of the negative tone often employed throughout the section discussing the development of private health insurance in The Bahamas. For example, despite agreeing with the World Health Organization that "pre-payment financing mechanisms are the most effective way, and often the only way, to ensure access to costly health care services," (page 81) and finding that "the primary reason for the growth of the private health insurance industry is that Bahamians believe quality health care can only be acquired in the private sector," (page 94), both of which are economic rationales for private health insurance, the BRC determines that "…there are no obvious economic reasons for the growth of private health insurance in The Bahamas" (page 94). The BRC (2004) also notes that "there is an over-reliance on private health insurance …" (page 81), which is interesting given the lack of substantive evidence in support of this position, and given that the purchase of private insurance is essentially a matter of individual choice.

The prohibition of private health insurance can have a number of negative effects. It is important to remember that, where privately funded health services are available, private health insurance provides citizens with quick access to care when needed in return for a regular premium payment prior to the onset of a condition. Insurance also allows those who might prefer to do so, to pay an anticipated and fixed premium over time for access to private care, rather than pay the higher and less predictable cost for private care when they wish to receive it (even if they can afford to do so). Thus, private health insurance creates opportunities for those in lower income groups and allows people to tailor their expenditures to their own preferences.

In addition, the monopolization of health care insurance, which happens when the government disallows private insurance, means that individuals other than those with sufficient means to pay directly have no effective choice in the health care they receive. Without effective choice, health care delivery becomes a common, uncontested standard, leaving patients in a situation where they cannot protest for better quality by choosing to purchase health services from a different provider. Monopoly insurance also abolishes the need for hospitals to be efficient and innovative due to a lack of competition. Since patients are not easily able to opt for higher quality accommodations, surroundings, or care when there is no private comprehensive insurance system to provide broad access to such services, the public health care system will not need to consider offering them (Boucher and Palda, 1996).

Restrictions on or regulation of private health care and private health insurance, while not as harmful as outright prohibition, are not benign. Regulation of services and prices can dampen the incentives for innovation and the introduction of greater choice through differentiated product offerings. Such regulation can also drive up the costs of health care services as competition stagnates and the incentive to decrease prices as a result of efficiency and innovation is virtually eliminated by a government determined rate. A private health sector, when active alongside a universal insurance scheme or even when acting as the sole provider of health services, must be allowed the flexibility to compete over the price and quality of services freely through the introduction of more innovative and effective forms of treatment and insurance cover.[11]

Clearly, the evidence supports the BRC's statement that private health insurance should continue to allow Bahamians to "access health care in their discretion," (page 100), but does not support the BRC's calls for regulation and government oversight (BRC, 2004). Recommendations that would attempt to create greater equity across income bands through the prohibition of PHI or through regulation of private fees for treatment (recommended by the BRC on page 50) should not be followed.

The second concern regarding the use of the term equity relates to the geographic distribution of the population and health care providers/facilities. As shown in table 3.1, the population of The Bahamas is distributed among a number of islands and cays, with the majority of the population (84.9%) residing on New Providence and

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11 A good example of this sort of competition is the introduction of wait list insurance plans in the UK, which provide patients with access to private care only if their wait time for care in the public system is greater than a certain threshold. Such insurance policies allow greater access to private care because they are substantially less expensive than comprehensive private health insurance policies, and would not have been possible if insurance offerings and prices were heavily regulated. The case of LASIK laser eye surgery in the United States, which is not covered by insurance, not heavily regulated, and sold in a free market with price advertising, competition, and consumer driven purchases is yet another example of the benefits of competition. The average price for standard LASIK has fallen over time in the United States, which bucks the general trend for the cost of medical treatments, while innovators have introduced newer and more precise forms of LASIK treatment (which naturally cost more, but not much more than the standard procedure originally cost when introduced) (*Wall Street Journal*, 2006).

Grand Bahama. In addition, The Bahamas three major public secondary/tertiary care facilities are located on either New Providence (Princess Margaret and Sandilands Rehabilitation Hospitals) or Grand Bahama (Rand Memorial Hospital). The Bahamas main provider of private inpatient care, Doctors Hospital, is also located on New Providence. In addition, as shown in table 3.2, public clinics that provide primary and some secondary care, are located throughout New Providence and the Family Islands, but are in greater number on New Providence, Grand Bahama, and Abaco (BRC, 2004).

While this distribution of facilities is sensible for both technical and economic reasons—care facilities are located in the most populated regions of The Bahamas and thus are able to enjoy economies of scale and provide the superior outcomes from treatment that come with higher patient volumes of certain treatments—it does mean that access to care is presently not equal in The Bahamas. The 15.1% of the population not residing on Grand Bahama or New Providence must travel to another island when in need of specialized treatment or hospital care. In addition, some residents of the Family Islands do not have access to a full service health centre in their area which means they must travel to other islands/areas for comprehensive primary care as well.

Again, it must be emphasized that this is an appropriate distribution of health care services for both technical and economic reasons. However, politicians seeking election to parliament may use the term equal to mean all residents regardless of location should have the same access to care in their region. This could even include access to a hospital and/or larger health clinic on their island/in their area. This can easily lead to the proliferation of hospitals and larger health care clinics in areas where it is neither technically nor economically reasonable to locate such facilities. Since the number of recipients of such proliferation is relatively small and well identified (the residents of a given island/region), while the cost is spread among all Bahamians paying NHI premiums and thus relatively small on an individual basis, calling for larger or new clinics/hospitals for his or her constituents would be politically expedient for a politician seeking votes. The demand for such expansion/proliferation is real in The Bahamas: the BRC noted that Bahamians asked about possible expansion of health care facilities in the Family Islands if NHI were implemented during public discussions (BRC, 2004: 91). All of this suggests that Bahamians must either abandon the term equal or very carefully define it to ensure that health care investment is not guided by political desire but instead by economic and technical realities.

A second important concern with the BRC's first recommendation is the provision of emergency care at no charge to illegal immigrants and the transient population as well as treatment for communicable diseases at no charge to illegal immigrants. While the idea of ensuring that all are cared for in times of need might be an attractive one, it brings with it serious effects that must be carefully considered. First, transient populations from developed nations, notably vacationers and visitors, are generally likely to be capable of paying for their medical treatment, and the costs of their care should not be borne entirely by Bahamians.

Second, the policy of free emergency care may also result in foreigners in need of high-cost services coming to The Bahamas illegally for treatment in the emergency room. Some illegal immigrants may also seek care for non-emergency conditions through the emergency department, which will have to be handled at the point of care by either turning away patients or billing them for their services (both of which can

be difficult and/or dangerous).[12] The issue of providing subsidized care to immigrant populations is not a small matter: according to the BRC, 8.4% of the patients treated at the Princess Margaret Hospital's General Practice Clinic in 2002 were Haitians.

While it makes sense for public health reasons to ensure that all of the population is immunized from/treated for harmful communicable diseases which can be transferred among individuals through casual contact, serious questions about this policy choice arise when considering communicable diseases that are very costly to treat and that require a less casual contact for transmission. An example of such a communicable disease is HIV/AIDS, which requires far more than casual contact to acquire (generally, bodily fluids must be transferred from one individual to another either through the sharing of needles, sexual contact, or some other form of direct fluid transfer) and is not inexpensive to treat. Offering free treatment for such diseases[13] can substantially increase the burden on those paying for NHI and can encourage illegal immigration by those seeking low-cost care for their health condition. Free treatment, by reducing the cost of illness or the risk of death/severe morbidity from illness, might also lead to reductions in the use of preventative measures such as condoms (Alcorn, 2004; Handsfield and Wood, 2002; Strathdee *et al.*, 2000).

In most developed nations, illegal immigrants and visitors are not guaranteed access to fully subsidized care. Rather, they are required to fund their own treatment except in exceptional circumstances (which can include emergencies). Given the presence of a sizable illegal immigrant population in The Bahamas, a substantial travel and tourism sector, and The Bahamas' proximity to a number of less developed nations combined with the difficulties inherent in protecting vast oceanic borders, the provision of fully subsidized care should be carefully regulated and strictly governed at a minimum.

Recommendation #2: *NHI legislation should be Enacted*

In general, universal health insurance programs (including government insurance programs and those that mandate insurance purchase in a competitive marketplace) in developed nations rely on a law or series of laws passed over time for their creation and structure. There is little reason to believe that the implementation of NHI in The Bahamas should depart from this general trend, regardless of the type of insurance scheme chosen (government or private and competitive). It should be noted however that this recommendation calls for the regulation of private health insurance which is an ill-advised policy discussed at length above.

Recommendation #3: *NHI should be Administered by the National Insurance Board*

The BRC has proposed that NHI be administered by the National Insurance Board (NIB). The BRC claims that the NIB has an existing physical infrastructure that could be easily expanded/employed to implement an NHI program quickly and efficiently. However, the BRC notes that the NIB's relatively high administrative costs, which are roughly equal to 17% of revenue and are largely related to staffing costs, will pose a barrier to the introduction of NHI. More specifically, the BRC found the NIB was currently overstaffed by 25% and poorly managed (BRC, 2004).

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12 It should be noted that illegal immigrants may be more likely to be poor and living in areas that are not well served by water and sanitation services, and thus might be more likely to require health care services in general. This would increase the likelihood of illegal immigrants taking advantage of subsidized care in the emergency room.

13 The BRC has proposed that all HIV positive patients who qualify should receive antiretroviral treatment.

The finding that the NIB is operating inefficiently should come as no surprise. A vast literature and body of evidence exists showing that governments and government business enterprises (GBEs) tend to be inefficient service providers compared to market equivalents. This inefficiency is driven by several main differences between private sector businesses and GBEs.

Kornai (1992) identified budget constraints as one of the major and unchangeable differences between private sector businesses and government. This is because government budget constraints are "soft" since it is effectively impossible for government to be de-capitalized. Private sector businesses, on the other hand, face "hard" budget constraints; if they incur sustained losses, or even a few large losses, the decline of capital can push them into bankruptcy. Kornai argued that this basic and unwavering difference between the two types of entities results in extraordinary differences in operations. Private sector businesses must provide consumers with the goods and services they demand in a timely manner and at affordable prices that are consistent with their quality. GBEs don't face the same constraints. They can consistently lose money by offering goods and services whose prices do not reflect their quality or timeliness.

Another pivotal difference between the two types of business enterprises relates to capitalization. Megginson and Netter (2001) found that GBEs tend to develop with less capital and thus are more labour intensive than their private sector counterparts. GBEs do not incorporate an optimal amount of capital, a fact that has negative implications for both labour and total factor productivity.
    Part of this under-capitalization is inherent to the structure of GBEs. GBEs are nearly always restricted—if not forbidden—from raising equity financing, since additional equity financing would dilute the government's ownership. In addition, many GBEs are also restricted in their ability to raise debt financing, as the government ultimately secures their accumulated debt. This capital restriction can, and has, precluded GBEs from developing prudent business plans. In 1992, Butler found that privatization of state-owned enterprises often results in re-capitalization because governments tend to view capital spending in their businesses to be less important than distributing money to the very visible areas demanded by the public.

It is also important to note that managers of GBEs operate within the general structure of government, which encourages focusing on political goals and targets rather than the desires of customers. For example, Lindsay (1976) found that public managers would be motivated to "divert resources from the production of attributes which will not be monitored [by politicians] to those which will."

Put simply, though it may be convenient to hand the administration of the proposed NHI program to the NIB, there is no economic rationale for the NIB to be the preferred option over a competitive private contractor or a competitive private marketplace. Indeed other functions within the health care program in The Bahamas could well benefit from privatization or at least private contracting within a publicly defined structure.[14] Also, private provision of health insurance and services within an NHI structure is not unheard of – this is the very model employed in Switzerland (Esmail, 2006).

The BRC's proposal that the health system be subjected to systems which ensure accountability is not a solution to the problems inherent in public provision of serv-

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14 The Materials Management Directorate, which warehouses and distributes medical equipment and supplies is one example of a service where substantial gains from privatization exist. The Bahamas' three public hospitals would also be good candidates for privatization as would publicly owned primary care clinics.

ices. Accountability in the delivery of any service comes from freedom of access to information on pricing and costs as well as the ability to punish those who act poorly either by removing them from their position or by purchasing goods and services from a competitor. An appointed board for the NIB which is not elected or accountable to citizens and "systems which ensure accountability" for government ministries are not a replacement for the competitive marketplace where consumers have the ability to not purchase goods and services from those whom they feel are offering a poor package.

It is also important to note that the 17% overhead figure for the NIB cannot be reasonably compared with the commonly used 1% insurance overhead estimate for Canada's Medicare program, which is used as a comparator in the discussion surrounding recommendation 3. Importantly, the estimate for Canada considers only the administrative overhead at the insurance plan level, which covers only the administration incurred in the payment for services according to governmentally determined budgets and price schedules, and in the enrolment of legal residents. Notably, this administrative overhead estimate does not count the administration related to hospital and facility management, benefit management, management of financial reserves, management of patients, etc. The administrative costs for these services, some of which are ostensibly managed by the NIB in The Bahamas, are borne by health providers, health facilities, health regions, government directly, or by patients themselves in Canada.

Bahamians must realize that minimizing administration should also not be the goal of any health policy structure. Some level of administration is in fact beneficial to the operation of any program or organization.[15] The question should not be how low administration can be, but rather what is the optimal level of administration for that particular organizational structure. This optimal level of administration can only be determined in a competitive marketplace, where consumers are able to choose between simpler and more restrictive plans (with low administrative cost) and more complex plans that provide greater freedom and choice (at higher administrative cost). Focusing on better public management of the NIB and focusing on an arbitrary target for administrative overhead will not improve the state of affairs at this GBE in any meaningful way.

Recommendation #4: *NHI should Offer a Comprehensive Benefits Package*

The BRC has proposed that the NHI program should provide a comprehensive health care benefits package, including complete medical care, pharmaceuticals and supplies, dental care, rehabilitation, eye examinations, and emergency transportation. The BRC has also proposed that the NHI program should provide care in both public and private settings, cover the cost of care for referrals abroad when such referrals are medically required, and that services which exceed or are not covered by the NHI program should be available for purchase. In total, the benefit package being recommended for The Bahamas' NHI would be at least as generous as programs in developed nations.

This level of generosity raises several important concerns, the first of which is how access to new and expensive medical technologies will be handled. New medical technologies can be remarkably expensive but can and do provide better health out

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15 For example, it would be administratively cheaper for General Motors or Ford to produce only one type of car, with one specification, in one colour. However, this is not optimal in the eyes of consumers who clearly prefer, as observed by their purchasing decisions, more choice at the expense of greater administrative cost (which is included in the price of their vehicle).

comes and more comfortable treatment for patients. The world's most developed nations, and many less developed nations, are struggling with the implementation of newer technologies in their health programs because of the effect this has on aggregate spending. Notably, one research paper has found that the growth in aggregate health spending by ten OECD governments between 1970 and 2002 was determined primarily by growth in benefit levels (defined as real health spending per person at a given age) while the ageing of the population played a much smaller role (Kotlikoff and Hagist, 2005).

In response to concerns about the cost effects of beneficial new medical technologies, some developed nations have implemented programs to ration access to and implementation of new medical devices and treatments. The UK, for example, has created the NICE program which sets treatment guidelines that can restrict patient access to newer drugs and other services (Pollard, 2006). Canada on the other hand has traditionally underinvested in high-tech diagnostic and surgical services, and has drawn out approval and formulary listing processes that restrict access to new pharmaceuticals (Esmail and Walker, 2005; Harriman *et al.*, 1999; Graham, 2005; Graham and Tabler, 2005). Some nations and the Canadian province of British Columbia have opted for reference drug models, where only the lowest cost pharmaceutical in a broadly defined therapeutic class (which can include drugs for a number of different conditions) is funded publicly, which automatically restricts access to newer and more expensive pharmaceuticals for those who cannot afford to pay for them. In addition, many developed nations ration access to costly health care services through waiting lists.

While rationing access to newer health care technologies does reduce expenditures at the margin, some of these savings are illusory. According to economic research, spending money on newer (and generally more expensive) drugs can actually reduce health care expenditures overall. Frank Lichtenberg (2001) examined the relationship between the age of pharmaceuticals Americans were taking and the numbers of non-drug medical events that these individuals experienced that were associated with the same condition. He found that individuals who were taking newer drugs actually experienced fewer and shorter hospital stays than those who were consuming older drugs. The group using newer drugs also used less non-drug health care services overall (including physician visits, etc.) He estimated that the increase in expenditure of going from a 15-year-old drug to a 5.5-year-old drug would increase the cost of a prescription by about $18, but would reduce the expected number of hospital stays (about 6 fewer stays per 1,000 prescriptions), the length of those stays, and the number of health services used overall, thus saving $71. Greater spending on pharmaceuticals has also been related to longer and more enjoyable lives for citizens (Lichtenberg, 2003; Frech and Miller, 1999).

Savings from rationing access to services through waiting lists may also be illusory in the long term. Adverse consequences from prolonged waiting are increasingly being identified and quantified in the medical and economics literatures. For example, Beanlands *et al.* (1998), in an assessment of the impact of waiting time for cardiac revascularization found that patients who were revascularized earlier had significantly lower preoperative mortality than those who were revascularized later. Those treated earlier also had a lower rate of subsequent cardiac events (a difference which approached statistical significance), and significant improvement in heart function (unlike the patients receiving later treatment). Sampalis *et al.* (2001) found that those who waited longer for a coronary artery bypass graft had significantly reduced physical functioning, vitality, social functioning, and general health prior to surgery, and had reduced physical functioning, vitality, mental health, and general health 6

months after surgery. Patients who waited longer were also more likely to experience an adverse postoperative event, and were less likely to return to work after surgery. Morgan, Sykora, and Naylor (1998) found that patients who waited longer for heart surgery, both in absolute terms and relative to the maximum wait recommended, had a higher probability of death while waiting. In a related inquiry, Rosanio *et al.* (1999) found that those who waited longer for coronary angiography were more likely to suffer the adverse consequences of cardiac hospitalization, heart attack, and cardiac-related death.

While these four examples are in the area of heart surgery, relationships between quicker treatment and improved outcomes/fewer adverse events have been found in the areas of orthopaedic surgery, cancer treatment, and others. In addition, delays in diagnosing illnesses resulting from rationed access to diagnostic equipment are likely to compound these negative effects as they extend the amount of time patients are waiting for treatment. In the long run, all of these negative effects can lead to an increased burden on the health care program and an increased burden on patients who must endure the ill effects of waiting.

All of this is not to say that NHI should not be implemented, but rather to caution that implementation without a clear plan for how these costs will be tackled is ill advised. The BRC seems to have recognized this reality and has proposed several measures that appear intended to control the introduction of new medical technologies. However, their recommendations do not deal with the problem in an optimal manner and emulate poorly thought out policies that have been implemented in other nations.

The BRC has proposed that a national essential drug list be created which would list those pharmaceuticals that would be provided through the NHI program. The BRC has also recommended that this list include generic drugs. While no specific requirement for generic substation has been recommended by the BRC, it is likely that this would eventually become a part of the plan as it has in many other nations. The development of a national essential drug list is similar to the creation of a formulary, where only the drugs listed by government/the insurer are available to patients. Interestingly, the global evidence regarding formularies' effectiveness in containing costs is mixed: Horn *et al.* (1996) found, in an examination of privately insured US patients, that restrictive formularies were generally related to an increase in visits to emergency rooms and admissions to hospital. In addition, as shown above, restricting access to new pharmaceuticals through a formulary process does not necessarily save money in the long run.

A second cost containment proposal from the BRC is to employ gatekeepers who would control access to specialist treatment. In such a model, primary care physicians would be required to see all patients and would refer patients to specialists only when they felt it was appropriate for patients to seek specialist treatment. In theory, this reduces the number of patients accessing specialists and thus reduces the use of a higher cost level of care. In practice, regulations that force patients to see primary care providers before they can receive specialist care have been found to be strongly correlated with the existence of waiting lists in European countries (Hjertqvist, 2006).

The BRC has also recommended that access to high technology services be made available only on referral per defined criteria. In other words, those who will decide who can and cannot access high tech medical care are not necessarily the patients in need of treatment or the physicians who are responsible for diagnosing precisely what treatment is required and delivering that treatment. Put simply, while centrally

determined restrictions on access to services can save a few dollars by reducing the number of patients who receive treatment, such restrictions are a poor substitute for the informed decisions that would be made by physicians and patients in the presence of appropriate incentives.

The main focus of the last two mechanisms being proposed by the BRC is the reduction of what the BRC calls "unnecessary use of services" (BRC, 2004: 6). While some might be surprised by the statement, the excess use of insured goods and services is well understood. This excess use results from the incentives created by reducing the prices of goods and services reimbursed by insurance.

When individuals do not face any charges for health services (i.e., a third party – the government or a private insurance company – covers their medical expenses), they have no incentive to restrain their use of health care. As well, individuals covered by insurance will likely use more health services for an event than those who do not have insurance coverage (Arrow, 1963). This is called moral hazard: insured patients demand more services than they would in the absence of insurance because the marginal cost of care to them is lower than if they did not have insurance. In insurance literature, moral hazard is often seen as a moral or ethical problem. However, Pauly notes that moral hazard is more a result of rational economic behaviour than of lower morality (Pauly, 1968). Individuals may recognize that their excessive use of health care will result in higher premiums or taxes, but their increase in benefits from over-consumption is large, while the incremental cost of their excessive use is small, because the entire population bears the cost. This situation can result in excessive demand and wasted resources, to the extent that the costs of producing these services are greater than what individuals would be willing to pay for them directly.

On the other hand, the absence of insurance may have the undesired effect of encouraging patients to delay seeking care because of cost, which may be more costly and harmful to their health than if they had received prompt treatment or medical advice. Obviously, a balance must be struck between the incentives to underuse, and the incentives to overuse, health care. While the BRC has proposed to enforce a balance through gatekeeping mechanisms and restricted access to new technology, a more efficient way to strike such a balance is through the introduction of user fees or co-payments.

Co-insurance, deductibles, and co-payments are commonly used to control excessive use due to under valuation of insured consumption. Co-insurance requires individuals to pay some fraction of each dollar of cost (usually set as a percentage). For example, a health insurance plan with a 25% co-insurance rate will either require individuals to pay for a quarter of all expenses or only reimburse them for three quarters of all expenses. With co-insurance, patients pay a price for health care that is lower than the market price but greater than zero.

Co-payments and deductibles work in a slightly different manner from co-insurance and may not have as significant an effect in some cases but a far more significant effect in others. A deductible is the amount that a patient must pay out of pocket during a period (say $1,000 annually) before the insurer will start paying for his health care. For health spending below the deductible, the patient's use of health services will be similar to that of an uninsured person. For health spending beyond the deductible, the patient's use of health care will be similar to that of a person with insurance coverage from the first dollar. Thus, a deductible will either have no effect on an individual's use, or will induce the individual to consume the amount that would have been pur-

chased in the absence of insurance (Pauly, 1968). Co-payments or user fees are a form of deductible applied to a given service—a $5 payment for a visit with a physician, or a $10 fee for emergency room visits, for example.

Co-insurance payments, co-payments, and deductibles have a number of advantages. The first is that they increase efficiency in the health delivery sector and reduce costs: if required to bear a portion of health care costs, individuals will curb their consumption of medical care, and medical services of lesser value will eventually be eliminated. A second advantage is that these payments can reduce the financing burden of NHI because they redirect health care financing from payers to users.

Evidence from the RAND health insurance experiment, the seminal study on the effect of cost sharing in a health insurance program, suggests that even modest user fees have an impact (Newhouse *et al.*, 1993). It found that the largest drop in health care consumption resulted from a shift from a free plan to a 25 percent coinsurance plan. And, in Europe, coinsurance rates range between five percent and 40 percent, while co-payments for GPs range between $12 US and $32 US (Gratzer and Irvine, 2002).

Unfortunately, cost sharing can have an adverse effect on the health of the poor and the sick poor. According to the RAND experiment, the health of this segment of the population is severely affected by cost-sharing – both mortality rates and high blood pressure worsen among high-risk individuals. For this reason, any cost-sharing program must either completely exempt low-income individuals, the chronically ill and others found to be adversely affected by the program, have differential rates and/or caps for these groups, exclude certain procedures from user fees (for example, immunization, mammograms or flu shots) or in some other way include a safety net.

Work on the effects of cost sharing in Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden) emphasizes the need for appropriate and effective exemptions for low-income individuals in order to ensure that these individuals are able to access the health care system in times of need (Øvretveit, 2001a). Also, the process by which these exemptions are granted should be proactively administered and automated as much as possible in order to ensure that all who qualify for an exemption are receiving that exemption, since a lack of knowledge of exemptions, social stigmas, and the need to complete special forms (increasing the cost of getting subsidies) can result in many individuals not receiving appropriate assistance or protection (Warburton, 2005; Øvretveit, 2001a).

In summary, a cost sharing scheme (employing co-payments, co-insurance payments, or deductibles) will create the appropriate incentives mentioned above. Patients will have the incentive to make a more informed decision about when and where it is best to access the health care system and about what services should be employed in the course of their treatment because they will bear a portion of the cost of each service delivered up to the annual limit. A cost sharing scheme is far superior to centrally planned restrictions on service use because they leave the decision over which service is best to those best placed to make the decision – the doctor and the patient being treated.

Recommendation #5: *Contributions should be Set at a Rate which is Affordable for the Majority of the Population*

The BRC has proposed that the level of contributions for NHI should be affordable for the majority of residents in The Bahamas and set by Parliament. This contribution

would be an income rated premium for those earning a salary, and a flat rate contribution that would vary by occupational class for the non-salaried sector. The contribution for salaried workers, but not their dependants, would also be shared 50/50 with employers.

The first concern that rises immediately from this recommendation is the potential impact the implementation of NHI would have on The Bahamas' economy. While this concern is noted in the BRC's report, the analysis wrong-headed in its focus on government subsidies for small employers or the self-employed that may be implemented to protect some firms/individuals from insolvency and to improve sustainability (BRC, 2004: 7). The real concern here is not one of the impacts on single sectors of the economy but rather the impact the NHI premium might have on the economy as a whole.

A new mandatory premium for health care that increases with income for salaried workers will have an impact that is not dissimilar from a new tax on economic activity. Increases in taxes affect the incentives for investment, risk-taking, entrepreneurial activities, and working by reducing the value of any gains that might accrue from these activities. [16] Estimates of the cost of tax increases in the United States show that it costs, including the actual dollar of tax revenue raised, anywhere between $1.26 and $2.02 to raise an additional dollar of taxes, depending on the form of taxation used. Most important to the discussion on NHI premiums assessed on an individual is the fact that a $1.00 increase in income taxes costs $1.60—in other words there is a net loss to the economy of $0.60 before counting the bill to taxpayers (Jorgensen and Yun, 1991).[17]

One additional consideration is how a new health care premium that behaves like an income tax will affect The Bahamas' tax haven status, which could have further implications for The Bahamas' economy (Rabushka, 1997).

Additionally, it is important to ask why employers should be involved in the payment of premiums as the BRC has proposed. Doing so could lead to difficulties when changing jobs or tie individuals to a job rather than allowing them greater freedom to move between jobs as well as enter and leave the workforce at will. This is an unnecessary restriction on the labour marketplace.

If the belief underlying employer payment is that this will relieve the burden on employees however, then this mechanism will not accomplish what the BRC intends. It is important to remember that, from the firm's perspective, the wage of an employee is their total income including all benefits and taxes that must be paid (or total payments to/for the employee). This total value is determined by the firm according to the value of the employee's output. Unless the value of an employee rises post NHI implementation, the NHI premium must ultimately be factored in to total income through a reduction in other forms of income.

In the short term, until employers can adjust their wage structure to account for the new costs, the effect of the tax will be an increase in employer costs. While this is only

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16 For a general overview of how taxes impact incentives see Clemens, Jason, and Niels Veldhuis (2005), Submission to The Saskatchewan Business Tax Review Committee. The document is available at www.fraserinstitute. ca.

17 Unfortunately, Jorgensen and Yun do not calculate the cost of a dollar of revenue raised through a payroll tax assessed on employers, which is a good approximation for how the NHI contributions for employees would affect employers. Estimates by the Federal Ministry of Finance in Canada suggest that the cost is lower than that of a personal income tax, $1.27 versus $1.56 in Canada, but still a positive cost for the economy as a whole (OECD, 1997).

a transitional event, it is wrong to assume that this is costless: until employee wages are adjusted over the longer term the premium will squeeze personal income.

In summary, a premium cost levied on the employer will ultimately be paid by the employees through lower take-home wages. Thus, it makes most sense to simply require that individuals fund the entire premium themselves. This will also have the added benefit of greater cost recognition by the insured population, who would be responsible for the full cost of their NHI premium and not just a share of it.

A second concern regarding the affordability of NHI is whether or not NHI will be affordable in the future and for future generations. While an NHI program may appear to be affordable in the short term for the relatively young Bahamas population, over the longer term the number Bahamians over age 65 will increase. This will have the effect of increasing the cost of health care services in total because of the well-known relationship between health expenditures/needs and age. While the BRC has proposed that those over the age of 65 should be required to contribute according to their ability to pay (BRC, 2004: 3), it is also true that individuals over the age of 65 have usually passed their peak earning years and will require significant subsidies from the younger and healthier in order to pay for their health care needs.

The ageing of the population within a comprehensive NHI program also brings with it a cost pressure that is not often considered. An NHI program that provides high tech medical services such as angioplasty, kidney dialysis, and advanced treatment for cancer will help Bahamians live longer at the margin. But Bahamians living longer will also require more expensive health care to maintain their health in old age (Pusey, 2006).

The question of the future affordability of NHI should loom large in the discussion over its implementation in The Bahamas. All indications are that health expenditures in large developed nations are growing significantly faster than their overall economies, bringing the sustainability of public health expenditures into question. That growth is related to both the growth in benefit levels over time and the general ageing of their populations (Kotlikoff and Hagist, 2005). More specifically, the average inflation-adjusted growth rate of total health expenditures per capita in OECD nations (excluding Turkey) between 1995 and 2003 was 4.0% compared with an average inflation-adjusted per capita economic growth rate of 2.9%; an average differential of 1.1 percentage points per year or about 9.1 percent greater total growth over the 8 year period examined (OECD, 2005).

This must be contrasted with the fact that The Bahamas is a small economy based largely on financial services and tourism that is neither as developed nor as diversified as the larger economies of the OECD and thus may be more susceptible to external economic shocks. The Bahamas' economy is also growing at a significantly slower rate than the economies of the OECD. Between 1995 and 2002 the average growth rate of The Bahamas' economy, inflation-adjusted per capita, was just 1.1%, while the economy actually contracted by 3.5% per capita in 2001 (World Bank, 2005). Over a longer horizon, 1990-2002, The Bahamas' GDP (inflation-adjusted per capita) actually contracted by 3.1% compared to an average growth of 29% in OECD nations (excluding Turkey). Average annual GDP per capita (inflation adjusted) growth over the period was 2.1% in OECD countries (excluding Turkey), and -0.2% in The Bahamas. If the future growth rates of NHI spending are similar to those in developed nations, and there is little reason to suspect they wouldn't be given the generosity and universal nature of the proposed program, their sus-

tainability is an even greater issue in a slower growth (or possibly negative growth) economy.[18, 19]

There is one final issue within the concern over economic affordability that has not been taken into account by either the BRC or the Steering Committee on National Health Insurance (SCNHI) in any way: the impact the introduction of NHI might have on the practice of medicine in The Bahamas. Specifically, the SCNHI's estimates of the cost of NHI are based on projected 2005 data – data which do not incorporate the effect of an NHI program on the health sector. Recently published research on the introduction of government insurance in the United States suggests that this could lead to a gross underestimate of the cost of NHI.

Amy Finkelstein (2005) examined the effects of market-wide changes in health insurance during the introduction of Medicare in the United States, which provides public health insurance to all non-poor Americans over age 65. Finkelstein found that Medicare's introduction "altered the practice of medicine" and resulted in "an increase in hospital utilization, measurable hospital inputs (i.e. employment and beds), hospital spending, and hospital technology adoption" (Finkelstein, 2006: Abstract & 31). Put another way, the introduction of public insurance affected the utilization of hospital services as well as the introduction of new technologies and the intensity of care delivered by hospitals (Finkelstein, 2006). This suggests that the impact of NHI cannot be assessed using current cost and intensity figures because these figures will expand significantly following its introduction. The future cost of NHI is likely to far exceed estimates of its cost compiled by the SCNHI thus elevating concerns about its impact on Bahamians and The Bahamas' economy.

Recommendation #6: *Public and Private Providers should be offered the Opportunity to Join the NHI Service Network*

Recommendation #7: *All Provider Payment Mechanisms should be Considered for use, with Capitation being the Preferred Option*

The BRC has recommended that NHI cover services in both public and private facilities under explicit contracts with the NIB (who would administer NHI). Facilities and professionals contracted to deliver universal medical treatment are to be accredited by the Ministry of Health. The BRC has also stated that capitation payments are the preferred method of remuneration for services delivered under NHI.

The BRC's recommendation that private providers be permitted to deliver NHI services is premised on the fact that many Bahamians currently use private health care providers. However, there is a large and well researched base of evidence that recommends private providers be involved in the delivery of health care services because of their greater efficiency and the competition this creates (Esmail and Walker, 2005). A number of European nations have also allowed private providers to deliver primary and acute care services, as well as privatized public providers, and seen improvements in efficiency and consumer-focus as a result (see for example Esmail and Walker, 2005; Lofgren, 2002; and Evans, 2006). While the BRC's desire for private provision of services is not based on the economic and international evidence, it does ultimately reflect best practice.

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18 The total expenditure growth rates, not adjusted for population growth, were: 4.5% and 3.1% for OECD health programs and economies respectively (excepting Turkey), and 2.9% and -2.0% for average economic growth in The Bahamas and the economic contraction in 2001 respectively.
19 Notably, the SCNHI has noted that The Bahamas would have to experience sustained economic progress in order to implement a "fully functional and progressive" NHI (SCNHI, 2005: vii), which is not in keeping with recent economic experience.

However, the BRC is mistaken in believing that capitation payments are the best way to fund NHI services. It is important to note that there are large differences in economic incentives and the efficiency of provision that result from different payment schemes for both doctors and health care facilities. These two areas of provision are somewhat distinct from one another and should be considered independently.

Paying for Physician Services

Doctors may be paid by one of three methods: salary, capitation payment, or fee-for-service. As noted in the BRC's limited review of remuneration models, each of these principal payment methods has advantages and disadvantages that result from the degree to which the payment method is related to actual physician output. Doctors can also be paid through a mixed system that incorporates two or all three of these payment methods in an attempt to capture the positive effects of each, while mitigating the negative.

Salary
Salary schemes allow direct control of costs, as there can be no variability in payment as a result of extra output. This also means that under-production is possible as doctors will not have an incentive to produce beyond a minimal standard, both quantitatively and qualitatively. Thus, positions under salary payment must be supervised to maintain their rate of output (Feldman *et al.*, 1981).

Capitation
Falling part way between a fully activity-based rate of pay and salary is the capitation payment system. Capitation payment systems provide a fixed payment based on the number of patients registered to a given practice. This payment is meant to provide physician services and diagnostic care for the patient; high-cost services (hospitals and specialists) will usually, though not necessarily, fall outside of the capitation scheme. These systems allow for careful control of health expenditures, just as with salary-based doctors, but also create an incentive for physicians to treat more patients as a greater number of registered patients will mean a higher income. Unfortunately, these systems can also lead to over-registering and under-servicing of patients, adverse selection of better risks to reduce outflows of money, and over-referral to high-cost care providers (hospitals and specialists) whose services are funded through a separate budget when the referring doctor could have treated the patients (Oxley and MacFarlan, 1994).

Fee-for-service payments
Fee-for-service payments, unlike the two mentioned above, are linked solely to output; no payments are associated with inactivity. While capitation payments and salaries allow physicians to under-produce while maintaining or even increasing income, this method of remuneration is a strictly activity-based rate of pay, where the number of patients actually treated determines the physician's income. This gives a physician full discretion over the level of service and all referrals but does lead to some variability in income, which may be undesirable for physicians located exclusively in sparsely populated regions. According a recent OECD study, countries that rely on fee-for-service remuneration have a lower probability of experiencing problematic waiting times (Siciliani and Hurst, 2003), a finding that is broadly consistent with the existing literature on the superiority of this method of remuneration.

Further evidence on the benefits of a fee-for-service remuneration policy over both capitation and salary payment schemes can be found in a number of studies investi-

gating the effects of various payment schemes. Hickson, Altemeier, and Perrin (1997), in a study comparing paediatric clinics, found that fee-for-service physicians scheduled more visits, provided better continuity of care, and were responsible for fewer visits to the emergency room than their salaried counterparts. Wilson and Longmire (1978) found, in a comparison of six hospitals, that surgeons in the two fee-for-service hospitals performed almost 50% more procedures in a month than did the surgeons in the two salaried hospitals. Ransom *et al.* (1996), comparing the number of services performed in a single gynaecology clinic under varying payment schemes, found that the number of procedures performed fell 15% when physicians moved from a fee-for-service scheme to a salaried payment scheme. They also noted that the number of elective procedures was most affected by the change in remuneration. Finally, Gosden *et al.* (2001), in a review of the literature, suggested that the quantity of primary care services provided by physicians was higher under a fee-for-service regime when compared with a capitation payment regime.

Though fee-for-service provision is clearly the superior choice for remuneration in terms of the quantity, and possibly the quality, of care provided, the control over income has often led to suspicions that physicians expand the volume of services they provide by recommending unnecessary care. The principal argument for this belief is that health care is a special good that cannot be traded in a normal market because of information asymmetry. This problem arises from the fact that patients are not likely to know their precise health care needs or the costs of those needs prior to visiting a doctor and must rely on the doctor for diagnosis and suggested treatment. Since doctors in private practice who earn money based on the quantity of treatment given can extract residual income in the form of cash (i.e., earn a higher income from greater income in their practice), they will have an incentive to recommend a higher level of treatment than would be cost-effective for the patient. This is known as supplier-induced demand, and is one of the potential drawbacks noted by the BRC for both case payment (a modified form of fee-for-service) and fee-for-service payment systems (BRC, 2004:121).

Supplier-induced demand

The size of the literature about supplier-induced demand (SID) requires a complete and detailed review impossible in this report. Ferguson (1994), however, provides a basic review of different interpretations of SID. He divides models of inducement into four categories:

- market-level models;
- individual model;
- physician response to price incentives;
- small area variation (SAV).

Market-level models
Ferguson analyzes three types of market-level models. First, he examines models that are built on the idea that an increase in the number of physicians will increase the use of health care and thus increase costs. Essential to this hypothesis is the notion that this increase in use is not medically necessary (i.e., it will not improve a patient's health). Studies that examine the relationship between the use and the supply of physicians usually use a basic model that assumes that the number of medical services demanded is determined by the number of physicians and other variables such as price, waiting time, and income. Studies that use this method (Fuchs and Kramer, 1972; Fuchs, 1978; Richardson, 1981) are seen as the backbone of SID theory. Fuchs'

results (1978) show that a 10% increase in the number of physicians leads to a 3% increase in demand for health care. However, both sides of the SID debate have heavily criticized this type of study.

Second, Ferguson examines disequilibrium models. It is often argued that because of its complexities (e.g., public insurance and subsidies) health care markets will always be in a state of disequilibrium; that is, the supply of health care will never equal the demand for it. Cromwell and Mitchell (1986) and Ferguson and Crawford (1989) use disequilibrium models to test the SID hypothesis. Cromwell and Mitchell find that a 10% increase in surgeons per capita leads to a 0.9% increase in all surgery per capita and a 1.3% increase in all elective procedures per capita.[20] Ferguson and Crawford find evidence of persistent disequilibrium but no support for the SID hypothesis.

Third, Ferguson (1994) examines models of imperfect competition. Stano (1987) finds that SID is more important when the local medical market is closer to a monopoly (i.e., when there are very few physicians providing services). As the supply of physicians increases, the importance of SID diminishes. Ferguson concludes his review of market level models by stating: "neither the equilibrium or disequilibrium market-level models … give much support to the SID model" (1994: 73).

Individual-level model
Individual-level models use micro-level data rather than the market-wide data used by market-level models. Stoddart and Barer (1981) use data from 1,300 British Columbia families who received ambulatory care in 1973/1974. Their results support the inducement hypothesis. However, there are several serious econometric problems with the study (Ferguson, 1994). For example, Stoddart and Barer use a test that compares the R2 values of equations with different variables. (R2 values represent the proportion of the change in the studied variables that is explained by the other variables in the model of equations.) Comparing R2 values between equations—let alone those of equations with different variables—is not considered proper econometric analysis.

Ferguson (1994) also examines the work of Rossister and Wilensky (1981, 1983), which uses data from the 1977 US National Medical Care Expenditure Survey. They test supplier-induced demand by estimating the effect of the availability of physicians on several variables, such as the probability of physician-initiated visits, the number of visits to the physician, expenditures on services, and the likelihood of services being used. Wilensky and Rossister's results indicate that the availability of physicians has a positive but small effect on the dependent variables:

What should be clear for even the most casual observer is that the idea is now dead that a large component of physician self-interested, self-created demand exists in response to changes in the supply of physicians. It can happen and does happen; but its policy relevance is small. (Wilensky and Rossister, 1981: 626)

Tussing (1983) and Tussing and Wojtowycz (1986) use a method similar to that of Wilensky and Rossister. Using 1981 data from a survey of health care use in the Republic of Ireland, they find support for the SID hypothesis: the supply of physicians increases the number of physician-initiated doctor visits.

Physicians' response to price incentives
The SID literature has recently devoted particular attention to physicians' responses

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20 These results suggest that a 100% increase in surgeons—a doubling of the number of surgeons—would only increase the total number of surgeries by 9%.

to price incentives (e.g., fees). Ferguson (1994) points out that there is no consensus in the literature on how to formulate this hypothesis. For example, some argue that a decrease in fees followed by an increase in the quantity of services supports the SID hypothesis because physicians are trying to maintain their income level. Others argue that an increase in services that follows an increase in fees is also evidence of SID because physicians now make more money per visit and, therefore, they induce unneeded visits. Ferguson writes:

> Rice (1984: 156) claims that his results show that physicians induce extra demand in the face of lower fees, while Krasnik *et al.* (1990: 1701) argue that their results show that physicians induce demand in response to higher fees. If we accept both results, then we are back in the situation of having an untestable hypothesis, since any response to changes in fees could be taken as evidence of inducement. (1994: 109–10)

Hickson, Altemeier, and Perrin (1987) examined the response of medical service providers to price changes. They constructed an experiment: 18 paediatric resident physicians in a paediatric clinic were assigned randomly to two group practices (fee-for-service and salary). The results showed that the fee-for-service physicians scheduled more visits, provided better continuity of care, and were responsible for fewer visits to the emergency room. Salaried physicians missed more visits recommended by the American Academy of Pediatrics than fee-for-service physicians. The effect on total costs was not clear because fee-for-service physicians had increased costs due to more office visits, but also reduced costs from less use of emergency room care.

Small area variation (SAV)
The literature about small area variation (SAV) examines the reasons why geographic regions with similar populations and similar incidences of illness use physicians' services at different rates. Most studies of SAV have found a significant relationship between the availability of resources and their use. (For a review of the literature, see Paul-Shaheen, Clarke, and Williams, 1987; and Joseph and Phillips, 1984.) Intuitively, it makes sense that, if more resources are available to patients, they will take advantage of them. If a previously unavailable eye-laser surgery that can help patients with glaucoma see better becomes available, it is not surprising that glaucoma patients will opt to have the procedure performed. This positive relationship between resources and use, however, is often used as evidence of SID (see, for example, Folland and Stano, 1989; Wennberg, Barnes, and Zubkoff, 1982; Park *et al.*, 1986; Vayda, 1973; and McPherson *et al.*, 1981.)

Ferguson, despite reviewing numerous articles, finds no support for the theory of SID. He also stresses the weak quality of the methodology:

> The methodology of the literature has been surprisingly poor, considering the importance of the policy implications that have been derived from it … There is virtually no testing for [model] misspecification … Of the literature we reviewed, the only paper to include a set of misspecification tests is that by Rochaix (1993) ….In fact, the SID model is virtually never tested … the few times this has been done … SID fails. (Ferguson, 1994: 124–27))

Feldman and Sloan (1988) also perform a review of the SID literature and reject the SID hypothesis:

> This literature suggests that demand inducement may occur in the market

for surgical services but its extent is less than previously estimated. Little evidence for demand inducement is found in the primary care physician market. (Feldman and Sloan 1988: 258)

Rice and Labelle (1989) are critical of Feldman and Sloan's conclusion, arguing that the latter omitted several important studies that contradict their conclusions. Rice and Labelle state: "there is a great deal of evidence to indicate that physicians do induce demand for economic gain" (1989: 588).15 The Saskatchewan Experiment (Beck and Horne, 1980) is often presented as evidence that physicians do, in fact, induce demand. However, Beck and Horne do not conclude that their findings are necessarily the result of SID.

Despite the increasing number of papers dealing with SID, it does not seem that a consensus is likely. Feldman and Sloan note, "few participants in the debate show any sign of changing their positions" (1988: 239). One thing is certain however: there is a great deal of uncertainty surrounding the SID hypothesis. Further, Newhouse *et al.* (1993) suggests that there is strong evidence that even if physicians induce demand, they will not be able fully to offset the decrease in demand arising from increased cost sharing. As well, Tussing touches a very interesting point: "Patients are more likely to resist demand stimulation when their out-of- pocket costs are high" (1983: 229). In other words, providing individuals with financial incentives may make it harder for physicians to induce demand. Finally, there is the issue presented by Newhouse *et al.* (1993):

> Usually the assumption is that an informed consumer would not value the induced demand at its cost. This assumption, however, need not be valid. For example, if one of the non price mechanisms used to equilibrate the market is time spent per patient, which certainly seems plausible on a day-to-day basis as a physician's patient load fluctuates, a decrease in overall demand from greater cost sharing may lead physicians to spend more time per patient and bill for longer visits. This might be termed supplier-induced demand—but patients might prefer it, depending on whether the visit time initially was optimal. Turning the argument around, suppose overall demand increases because of less cost sharing, with a resultant decrease in time spent per patient. If patients preferred longer visits (and were willing to pay for them), should this be termed a supplier-induced decrease in demand? (1993: 369–70)

In summary, the evidence on physician remuneration suggests that salary and capitation are, on balance, inferior to a payment regime based principally on fee-for-service. Thus, the BRC's recommendation that The Bahamas move away from fee-for-service remuneration of physician services is ill-advised. Following the BRC's advice could in fact end up making the health system more costly than necessary because of the increase in the number of physicians that would be required in order to deliver the same quantity of service that would be delivered under a fee-for-service regime.

> American evidence suggests that physicians working under comparable systems provide about 25 percent fewer office visits than do fee-for-service physicians. The one Canadian study, which contains the Canadian data necessary to study the question, finds that physicians working under fee-for-service provide six more patient contact hours per week than do doctors working under other remuneration systems (Ferguson, 2001).

It should also be noted that a pure fee-for-service or even a pure capitation model

will not work well in serving areas which are not densely populated. Both schemes require sufficient patient registration/volume in order to provide appropriate income for high-demand professionals. This suggests that a mixed payment scheme including a salary component, but still primarily based on fee-for-service, may be required for physicians who reside in less populated regions. However, if less-populated regions are served by traveling physicians who cover a significant population base in total or who are primarily based in populated regions, this may not be necessary at all.

Paying for Hospital/Facility Services

The BRC's proposal that health care providers be paid on a capitation basis and that contracts be written between the NHI system (the NIB) and providers effectively creates a budgetary allocation system or block grant for hospitals where the budget/grant is based on a per capita allocation. Typically, the rationale behind such a funding program is that it provides the NHI system with a direct means of controlling expenditures or costs (Leonard *et al.*, 2003).[21] The predictable result of this payment scheme, however, is fewer services and a lower standard of care for patients.

Block grants disconnect the funding from the provision of services to patients. Incentives to provide a higher or superior quality of care to patients are virtually absent. There is also no incentive to function efficiently, especially in the presence of soft budget constraints (Gerdtham *et al.*, 1999). On the other hand, facility/hospital administrators have an incentive to discharge patients quickly, avoid admissions of costly patients, and shift patients to other outside institutions as a means of controlling expenditures (Leonard *et al.*, 2003). Hospital/facility administrators also have an incentive under block grants to tie up bed resources with long-stay patients who do not need secondary/tertiary medical care in order to prevent the admission of patients who would be more costly to treat.

Opting for a payment scheme that is based on the number and type of patients actually treated would create powerful incentives to deliver a greater quantity and quality of services without leading to dramatic cost increases. This method of funding, best considered a prospective fee-for-service,[22] is most commonly known as the diagnostic related group (DRG) payment system.[23, 24] The idea is fairly simple: the service provider is paid a fee for each individual treated based on the expected costs of treating the diagnosis of the patient at the time of admission including any significant co-morbidities. This is distinctly different from a retrospective payment scheme, where all services actually delivered to the patient, regardless of need, cost, or efficacy, are reimbursed by the insurer.

Unlike a block grant, a DRG-based payment creates incentives for hospitals to treat more patients and to provide the types of services that patients desire. If a provider fails to meet patients' expectations under a DRG-payment regime, the patient's departure to another provider immediately results in lower revenues, which is not the case with a

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21 In practice however, hospital budget limits are often "soft" and not strictly enforced. In countries where they have been enforced, such as the UK for example, hard budget constraints have been associated with rigidities in resource allocation, and the rationing of health services through waiting lists and other measures (Koen, 2000).

22 A *prospective* fee-for-service payment scheme funds patient care based on the disposition of the patient at the time of admission for care—specific fees or rates are associated with specific illnesses or conditions. For more discussion on the differences between *retrospective* and *prospective* output-based payment schemes, see Weisbrod (1991).

23 DRG payment schemes are the most widely used form of prospective reimbursement schemes, where payments are based on the costs of treating specific disease categories.

24 The BRC report uses the alternative term "Case Payment" and refers to the DRG methodology in its discussion (BRC, 2004: 121).

capitation-based budget model. This competition for patients will result in better care and will not lead to the dramatic cost increases that have been associated with retrospective fee-for-service payments where all services actually delivered are reimbursed (Weisbrod, 1991). Since fees are based on the average costs of treating a patient's particular illness or condition, and not based on the services actually delivered, hospitals retain the incentive to control costs in order to avoid losses (or maximize surpluses).

Numerous studies verify the theoretical superiority of case-based payment regimes over budget allocation schemes. Gerdtham *et al.* (1999) found that Swedish county councils that moved to an output-based reimbursement system following health reforms in 1993 and 1994 became more efficient than those councils that had not reformed—they estimated the potential cost savings to be approximately 13 percent. Håkansson (2000) found that the Stockholm county council experienced an 8 percent increase in inpatient care, a 50 percent increase in day surgeries, and a 15 percent increase in outpatient visits, which all added up to an 11 percent increase in activity overall after the move to DRG payments. Despite the increase in activity, total costs actually fell 1 percent, due both to fewer personnel employed in the hospital sector and a DRG price decrease of 10 percent in January of that year. In general, Swedish counties that moved to prospective payment systems outperformed those counties that did not, both in terms of increased output and productivity (Håkansson, 2000).

These changes in hospital efficiency do not appear to have been accompanied by reductions in the quality of or access to care. Håkansson (2000) finds no evidence that the decreases in length of stay that resulted have had a negative affect on patients (in terms of readmissions to hospital) or that elderly patients have been discriminated against. Svensson and Garelius (1994) find no evidence of providers giving treatment to only the simplest or most profitable cases (cited in Håkansson, 2000). Finally, Charpentier and Samuellson (1999, cited in Håkansson, 2000) note that the greatest downside to the purchaser-provider split and the financing reform accomplished in Stockholm County was an inability to handle the new developments at the central management level.

In Italy, Aparo *et al.* (1999) found that the move to DRG-based inpatient care financing resulted in a 32 percent reduction in the cost per discharge, a 58 percent reduction in the average length of stay, and a 62 percent increase in the intensity of care (inputs per day) between 1994 and 1998. In total, the Italian health care system was able to care for twice as many patients in 1998 as in 1994 (despite going from 5.7 inpatient acute care beds per 1,000 population to 4.9), and hospitals did not resort to admitting less ill patients to increase revenues (Aparo *et al.*, 1999; OECD, 2005).

Similarly, Clemmesen and Hansen (2003, cited in Siciliani and Hurst, 2003) found that the move to partial DRG-based financing in Denmark also led to increases in productivity. Their study, following 18 common surgical procedures after the health reform in 2000, found that hospital activity increased by 13 percent in the year immediately following implementation. Equally important, average waiting times fell 17 percent, from 26 weeks to 21.5 weeks (Clemmesen and Hansen, 2003, cited in Siciliani and Hurst, 2003; Kirby, 2002). This mirrors work done by the OECD which found, in a review of 20 OECD countries, that waiting lists are less likely to be seen as a problem in the presence of activity-based financing for hospitals (Siciliani and Hurst, 2003).

Prospective fee-for-service funding systems have also been successful outside of Europe. In Australia, the first two states to undergo hospital finance reform enjoyed increases in the quantity of services while also enjoying decreases in the size of hospi-

tal budgets (Hilless and Healy, 2001). The state of Victoria in particular, now known as the most efficient producer of case-mix adjusted public hospital services in the country, experienced a 25 percent reduction in costs per patient treated between 1991-92 (the last year before reform) and 1996-97 (Steering Committee for the Review of Commonwealth/State Service Provision, 1998; Duckett, 2000).

DRG-based payment schemes also facilitate the introduction of competition into the hospital sector, which is a notable benefit of the BRC's proposal to incorporate private providers within the government managed NHI program. Because the cost of performing procedures is clearly identified—government purchasers know exactly what they are purchasing and for how much—contracting for surgical or hospital care, or even deregulating the hospital sector and allowing freedom of choice for patients, is more easily accomplished. Sweden's Stockholm county has taken this one step further and partly bases the value of DRG reimbursements for all providers on the most efficient provider's cost structure (Lofgren, 2002).[25]

In summary, the BRC's recommendation that hospitals and facilities be paid by a capitation-based budget is also ill-advised. Hospitals and facilities in The Bahamas should be funded using a case-based, or DRG-type, funding model, which encourages both greater efficiency and cost control, and encourages a more patient-focused care setting.

One additional concern with recommendation 6 is the BRC's desire that the Ministry of Health accredit all health care providers. This would create a serious conflict of interest for the Ministry of Health as they would ultimately be overseeing the NHI program and thus would be purchasing health care/managing the insurance plan (through the NIB, which the BRC has proposed should be accountable to Government ministries which deal with health matters and social security), providing health care (through the PHA, whose board is accountable to the Minister of Health), and regulating/accrediting health care.

In addition, partnership with the Health Facility's Council and the Health Profession's Council for accreditation activities could lead to licensing of health care providers, where only those who were licensed by the Ministry of Health & Facility/Profession's Councils would be permitted legally to practice medicine under NHI or even in The Bahamas. This would give the Councils the power to restrict entry, to control the prices and the types of goods and services offered, and, therefore, the power to restrict the choices available to both its members—the suppliers of health care—and the public—the consumers of health care. With such power over all aspects of the health care system, a conflict of interest exists when challenges to the Councils' authority arise which may be beneficial to the consumers of health care in terms of costs, quality of care, and freedom of choice, but which could conceivably weaken their stronghold (Ramsay, 1995).

It is far wiser for The Bahamas to simply require that practitioners and/or facilities maintain certification with an independent third party, which could be any of several licensing bodies in Canada, the United States, or Europe, or independent quality certification organizations that also practice in these regions.[26] Certification by an independent, reputable, and preferably offshore third party would provide the quality signal desired by the BRC and likely by many Bahamians, while a lack of local oversight

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25 St. Goran's hospital, a private for-profit service provider, is historically the most efficient hospital in the county (Lofgren, 2002).

26 One potential example is the Joint Commission International (JCI) accreditation program for hospitals (www.jointcommissioninternational.com).

over the certification process would ensure that harmful political intervention would be constrained.

With respect to contracting, the NHI program must also be designed to permit competition and innovation in the delivery of services. Detailed contracts for services or replicating currently successful models across the health care program (as proposed by the BRC on page 109) can lead to a single model of service delivery. In the long run, that single model may not be the most efficient and effective even if it works well today in a specific region. For this reason, innovation and competition must be permitted so that physicians and patients can, over time, determine what model works best in their particular circumstance. While this may lead to several competing models, such an outcome is unquestionably superior to an enforced one-size-fits-all approach because it better reflects the needs and desires of patients and their care providers.

In implementing an NHI program, Bahamians must also take notice of one additional potential cost pressure that relates to human resources. As it stands, many physicians practicing in The Bahamas were trained in Canada, the United States, and Europe (PAHO, 2002). While out migration of health personnel is not a problem for The Bahamas today, it could be tomorrow as the number of health professionals in Canada and the United States falls further and further short of what the populations desire, and thus these nations' desires to attract physicians from abroad increases. This may require increased incomes for Bahamian practitioners or greater flexibility in practice in order to ensure satisfaction, particularly for those who were trained in Europe and North America. Alternately, this reality may at the very least severely constrain the NHI program's ability to control expenditure growth in professional services.

Recommendation #8: *A Percentage of Revenues should be set aside for Purposes that ensure the Stability and Sustainability of NHI*

On the surface, recommendation 8 seems a fairly benign and prudent recommendation designed to ensure that the NHI program has a financial reserve sufficiently large to protect itself from sudden and expensive health-related events. However, there are a few comments found under recommendation 8 that should be cause for concern. These points either suggest that the BRC's proposal for NHI is likely to begin infringing on the daily lives of Bahamians, or are expensive patches that are intended to make up for the BRC's poor policy decisions in the first 7 recommendations – patches that would not be necessary if the right set of health policies were selected in the first place.

The BRC suggests that "a robust educational outreach programme is necessary to discourage and reduce certain lifestyle choices of behaviours which negatively impact health," (BRC, 2004: 9). While this could be as simple as a set of television and radio commercials urging Bahamians to eat well, exercise regularly, and avoid tobacco and illegal drugs, it is also possible that this comment could develop into considerations of "fat taxes" and "junk taxes" that are now commonplace in developing nations. This might also develop into wasteful government subsidies to physical fitness industries and government constraints on land development in order to create more green space and parks for exercise.

The BRC, under recommendation 8, also discusses using a portion of reserve funds to encourage improvements in quality care and patient/provider satisfaction, and for ongoing infrastructure improvement. If the appropriate funding mechanisms are in

place however, there is no need for additional funds to encourage quality improvements or satisfaction as these would already be encouraged by the funding model. An appropriate funding model would also include capital costs within its structure, thus giving providers an incentive to invest in capital structures that benefit patients not politicians. In other words, these suggested uses for reserve funds (which themselves could be subject to significant harmful political intervention) are only necessary if the wrong policy choices are made in the first place.

Conclusion

The BRC's proposals, if implemented verbatim, would create a substandard health care program whose cost far exceeded what was necessary to deliver the level of quality/access that would be provided to residents of The Bahamas. The cost of that program is also likely to be unsustainable in the long run. In addition, the economic costs associated with the introduction of NHI in general and the BRC's expensive proposal in particular would be significant. If Bahamians insist on forging ahead with NHI, the policy package implemented must not be that proposed by the BRC.

Section 4: The Developed World's Most Successful Health Care Models

Most developed nations have policies in place that strive to ensure that their citizens have access to health care services when they need it, regardless of their ability to pay for it. However, some nations manage to deliver on this promise far more efficiently than others. The available evidence on cost, quality, and access suggests that the structures of the health care programs in Australia, France, Japan, Singapore, Sweden, and Switzerland, should serve as a lesson for those who desire an NHI program in The Bahamas (Esmail and Walker, 2005; Esmail 2006; Esmail, 2004; Ramsay, 2001; WHO, 2000). The basic health structures of these nations are outlined in table 4.1, and are described in greater detail below.

Australia
Australia's Medicare program provides "free" treatment to Medicare patients in a public hospital and free or subsidized treatment for services that are considered "clinically relevant," such as consultation fees for doctors, most surgical and therapeutic procedures performed by doctors, and public hospital services. Medicare does not cover such things as dental exams and treatment, ambulance services, home nursing, physiotherapy, chiropractic services, glasses and contact lenses, hearing aids, prostheses, medicines, cosmetic surgery, and medical services that are not clinically necessary. In 2000, out-of-pocket payments accounted for 16 percent of total health expenditure (UK National Audit Office, 2003).

For professional services provided in a hospital, the Medicare benefit is 75 percent of the schedule fee; for all other professional services, the Medicare benefit is approximately 85 percent of the schedule fee. Australians may insure privately for care in private hospitals, and they may insure with private insurance companies for the gap between the Medicare benefit and the schedule fee. Though physicians are free to charge a fee of their choosing, they can accept 85 percent of the schedule fee only, and no co-payment, in return for billing Medicare directly, rather than the patients; nearly 80 percent of services are billed this way (Hilless and Healy, 2001).

Insurance premiums in Australia—public and private—are community rated. That is, health funds cannot discriminate against people by charging them differential premiums on the basis of their risk (age, sex, health status, and lifestyle). People can switch health funds without penalty.

The federal government's Lifetime Health Cover program takes into account the length of time that a person has had private hospital insurance (or cover) and rewards them by offering lower premiums. As well, the "Federal Government 30 percent Rebate" initiative refunds 30 cents for every dollar that people contribute to their private health insurance premium. Private insurance accounts for about eight percent of health

care expenditure (UK National Audit Office, 2003) and enrolment in private plans is approaching 45 percent of the population (UK National Audit Office, 2003; Irvine, Hjertqvist, and Gratzer, 2002).

France
In France, all legal residents are covered by public health insurance, which is paid for from taxes and compulsory social health insurance contributions from employers and employees. Sickness insurance funds cover 99 percent of the population (UK National Audit Office, 2003).

People are not permitted to opt out of the public system—there is no choice of insurer. However, most people have additional private insurance to pay for services not covered by public health insurance—mutual insurance funds cover about 80 percent of the population, meaning that, for most of the population, 100 percent of the cost of the majority of medical procedures is reimbursed. For ambulatory care, patients pay physicians' bills and are then reimbursed by sickness funds (UK National Audit Office, 2003).

Inpatient care is provided in public and private hospitals. Physicians in public hospitals are salaried, while those in private hospitals receive fee-for-service payments. Within limits, some public hospitals are allowed to treat private patients, for which they receive a portion of the private fee.

There are patient contributions for ambulatory care (about 30 percent for GP and specialist visits), pharmaceuticals (ranging from 35 to 65 percent, for the most part) and 40 percent for laboratory tests (Conference Board of Canada, 2004; UK National Audit Office, 2003). But France waives co-insurance payments for a long list of groups, including disabled children and pregnant mothers, as well as for people suffering from a specified list of expensive illnesses such as AIDS and diabetes (Gratzer and Irvine, 2002). Overall, out-of-pocket payments account for 10 percent of health care spending (UKNational Audit Office, 2003).

Japan
The Japanese health care system is arguably one of the very best universal access health care systems in the developed world. It provides unrivalled access to high-tech equipment and delivers some of the best health outcomes in the developed world, all at a substantially lower cost than systems found in other developed nations (Esmail and Walker, 2005).

The health care system in Japan is a multi-payer model; it has nearly 5,000 insurers, most of whom are quasi-autonomous, non-government bodies. These insurers pay providers directly according to a government fee schedule, and make no other payments to providers (providers are expected to pay for capital investments through fee receipts). The state acts as an intermediary between insurers and providers through the Social Insurance Medical Fee Payment Fund, which screens bills from providers to ensure that only appropriate medical services are fully reimbursed. Insurers pay only the portion of the fee that has not already been covered by the patient.

Cost sharing exists at all levels of care in Japan. Physicians, specialists, and hospitals all require co-payments of between 20 and 30 percent. Reimbursement rates for pharmaceuticals vary depending on the nature of the drug provided and the patients' needs. Maximums do apply to cost sharing, however, which in 1998 reduced the effective cost-sharing rate to approximately 11.7 percent of total health expenditure.
Universal access to health care services in Japan is maintained through automat-

ic enrolment in the health insurance scheme. Individuals are assigned to a specific insurer on the basis of employment status, residential location, or age. Income-based contributions for health insurance are collected from both employers and individuals.

Central and local governments provide insurance for the very poor—those who would otherwise have difficulty affording co-payments in the insurance system—through the Medical Aid program. Though Japanese citizens have no choice in their health insurance provider, they may choose any health care provider they desire.

The health delivery system in Japan is largely privately operated: 79.9 percent of hospitals and 93.8 percent of doctors' clinics are privately owned. Doctors' clinics and hospitals work both in a complimentary manner and in a competitive manner. Doctors in the clinics are not permitted to treat patients in hospitals (patients must be transferred to the hospital's own salaried physicians), while they are permitted to provide ambulatory inpatient surgeries and advanced diagnostic care, as would a hospital.

Waiting times for inpatient surgeries and outpatient visits in Japan are virtually non-existent system wide. Larger hospitals in big cities, which are seen as having a better reputation than their smaller counterparts, sometimes have waits and queuing. The smaller, less prestigious hospitals have a surplus of beds with hardly any waiting lists, and are equally accessible under health insurance in Japan (Jeong and Hurst, 2001).

Singapore
In Singapore, private practitioners provide about 80 percent of primary health care, while government polyclinics provide the remaining 20 percent. For hospital care, the government provides 80 percent of the care and the private sector 20 percent (Ramsay, 2001). Patients are expected to pay at least part of the cost of the medical services they use—inpatient or outpatient—and to pay more if they demand higher levels of service in terms of comfort and amenities. Co-payments apply to even the most heavily subsidized hospital wards. While no Singaporean is denied access to the health care system or use of emergency services at public hospitals, private hospitals are not required to accept all patients.

The main methods of health funding and insurance are organized through the government. Its philosophy is that Singaporeans should be encouraged to adopt healthy lifestyles and be responsible for their own health. To this end, it has devised three programs: Medisave, Medishield, and Medifund, and has recently added a fourth, called ElderShield. As well, it relies heavily on supply-side measures, such as limiting the number of physicians, specialists, and high-technology services, to control health costs.

Medisave is a compulsory savings scheme to help Singaporeans pay for any hospitalization costs they may incur, especially after retirement. It is part of the country's Central Provident Fund, a fund into which both employees and employers contribute roughly the same amount (totaling 40 percent of an employee's income) for an employee's retirement, housing needs, and health care. The contributions are tax deductible and earn interest. Singaporeans can withdraw from their medical savings account to pay for their own hospital bills or those of their immediate family. They keep any amount remaining in their account at the end of the year.

Medishield is a voluntary insurance plan designed to help Singaporeans meet any medical expenses arising from a major accident or prolonged illness. Reimbursements are based on a system of deductibles and co-insurance, and there are claim limits per

policy year and per lifetime. Medishield premiums are paid from Medisave contributions.

Medifund is an endowment fund set up by the government as a safety net to help low-income Singaporeans pay for their medical care. Anyone who is unable even to pay for subsidized hospital care can apply for help from Medifund. The new, low-cost insurance program ElderShield was introduced in 2002 to provide financial protection for individuals suffering from severe disabilities.

Around one-quarter of Singaporean health expenditure comes directly from the government budget; out-of-pocket spending represents about one-third of total health spending; employer medical benefits accounts for another one-third; and Medisave, Medishield and Medifund together contribute less than 10 per cent of total spending (Hanvoravongchai, 2002). When viewed in relation to the inpatient expenditures for which it is intended, the Medisave share is larger. Roughly 85 to 90 percent of hospital inpatients make use of their Medisave accounts to pay their hospital bills (Taylor, 2003).

While the percent of total spending for which Medisave accounts may be relatively small, Medisave plans have been conducive to savings. At the end of 1999, there were more than 2.68 million Medisave accounts, Singaporeans had an average of about S$7,760 in their accounts and the total Medisave balance was S$20.8 billion—equivalent to more than four times the total national health expenditure that year, whereas net assets in Medisave in 1995 were worth only S$12.7 billion (Hanvoravongchai, 2002). A 1995 national survey of senior citizens indicated that Medisave had become the most important source of financing for acute care for the elderly over 55 years of age. However, a large proportion of elderly did not yet have enough funds of their own and had to depend on other sources, including their children's Medisave—although a higher proportion of the 55 to 64 year-olds who spent more time in the workforce could finance their health care from their own accounts than those in older age groups (Hanvoravongchai, 2002).

Sweden
In Sweden, the central government focuses more on the performance of the services and on results than on how the services are organized. There are 26 county councils in Sweden responsible for purchasing from hospitals and other providers the health care services needed for their populations of between 60,000 and 1.7 million people. Local authorities are responsible for the care of the elderly and disabled people in the places where they live.

Swedish residents are entitled to use health services at subsidized prices, but there are co-payments for primary health care, hospital stays, outpatient care, dental care, elderly care, and for prescription drugs. The fees vary by county, but, to limit the expenses incurred by patients, there is a high-cost ceiling. Certain population groups, such as children, are exempt from patients' fees. User fees represent less than 2 percent of the total resources devoted to health care (Hjertqvist, 2002b).

In some counties, such as Stockholm, competition between service providers and private sector contractors has been encouraged. From 1992 to 1994, the Greater Council of Stockholm launched a number of competitive initiatives. With competitive contracting, the council reduced the yearly cost of ambulance service in the Stockholm region by 15 percent, laboratory costs fell by 50 percent, the cost of support staff services dropped by 30 percent, and privatized nursing homes reduced costs by 20 to 30

Individuals purchasing insurance can choose not only between a number of insurance providers in their canton,[31] but also between 4 types of insurance plans: standard insurance, standard insurance with a higher deductible, a managed care plan (Health Maintenance Organization or Preferred Provider Organization), or a bonus insurance scheme where future premium reductions are possible following years where no claims where made. All plans require patients to cover an annual deductible and incorporate a 10 percent coinsurance rate after the deductible is reached to an annual ceiling. Deductibles do not usually apply to children under age 18 who also enjoy a lower ceiling on coinsurance payments, and some insurance companies offer deductible-free coverage to individuals under age 25. In addition, patients are responsible for a daily co-payment of 10 CHF (~$6 USD)[32] for hospital stays (Colombo, 2001; European Observatory, 2000; Zweifel, 2000).

Individuals who do not purchase insurance for themselves forego the choice of insurer, are automatically insured by their canton, and are liable for paying the premium of the insurance package provided (Colombo, 2001).

Provision of health care services in Switzerland is equally competitive. Non- hospital care in Switzerland is primarily provided by physicians in private practice (both general practitioners and specialists), some of whom make house calls in addition to office or clinic practice. Patients generally have unlimited and unrestricted access to the physician of their choice, whether they are a general practitioner or a specialist (no referral is required), unless they have chosen a managed care insurance plan. Non-managed care services provided outside of hospitals are charged as fee-for-service either to the insurer directly, or to the patient who then seeks reimbursement from their insurer.

Both public and private organizations provide hospital care under the mandatory insurance scheme. As is the case with physicians, non-managed care patients are free to choose their hospital, but not necessarily their hospital physician. Doctors working in hospitals are generally employed by the hospital, and receive a salary that is supplemented by payments for services not covered by the mandatory scheme.Importantly, Swiss citizens can choose to finance their health care services privately instead of having the costs of treatment covered by the mandatory insurance scheme. Citizens may also purchase services additional to those covered by the mandatory package either privately or through a supplementary insurance plan.[33] The services purchased most often include private or semi-private accommodation in hospitals, though other benefits and services such as free choice of hospital doctor are also available (European Observatory, 2000; WHO-REO, 2001).

The Swiss model demonstrates that private competition and consumer sovereignty are entirely compatible with a desire to ensure that no one is unable to get adequate health care because of their inability to pay for it. The Swiss model also shows that consumer choice, competition, and appropriate financial incentives can work in unison to create a high performing and cost effective program that is responsive to the needs and desires of patients.

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31 In 1999, a total of 109 insurers offered basic insurance plans in Switzerland, though not all insurers were active in all cantons (citizens are not allowed to purchase insurance from insurers outside of the canton in which they are based).

32 US dollar figure was calculated using the PPP monetary conversion rate for 2004 from OECD, 2005.

33 Supplementary insurance plans in Switzerland are individually priced and are not subject to the community rating regulations.

Section 5: Policy Recommendations for The Bahamas

The ultimate goals of any health care reform should include the formation of a system in which the population's health is improved, people have access to medical services when they need them, consumers control their own health care decisions, and there is accountability (by both providers and consumers) for the use of health care services. Health reforms in The Bahamas must also consider the facts that a universal comprehensive health insurance program does not necessarily improve population health outcomes (discussed in section 1 above), and that The Bahamas' government currently ensures universal access to basic health care services including hospital care (PAHO, 2002; BRC, 2004). The Bahamas must also recognize that the financial sustainability of publicly funded health care programs is a serious concern in developed nations. These goals and realities together suggest that The Bahamas might be best served by the privatization of hospitals and other health related activities, and the introduction of cost sharing for services delivered by the current taxpayer-funded health program. The introduction of a comprehensive NHI program, given the evidence discussed in sections 1 and 3, may not be advisable for The Bahamas.

However, if Bahamians insist that an NHI program must be the goal of any health reform in The Bahamas, then the following recommendations must be implemented within that NHI program to ensure cost effectiveness and quality.

1. Hospitals, clinics, and other health activities/services should be privatized

Some areas of health care seem to fall naturally under the purview of the public sector. For example, it would be difficult for the private sector to provide enough public health and communicable disease management services, yet these services are important in that they have been shown by more than one study to have a net positive social benefit. However, the argument for public sector provision of many other services—including acute and primary care—is less credible.

There is a substantial quantity of literature on the relationship between ownership—private versus public, not-for-profit versus for-profit—and costs and outcomes, both for medical institutions and business in general. The literature generally indicates that for-profit and not-for-profit providers/hospitals are equally efficient, but that there are distinct efficiency advantages in relying on private providers/hospitals vis-à-vis publicly owned providers/hospitals. Further, private health care providers, because of their incentives to increase efficiency and provide a higher level of care in order to attract more patients, will end up enhancing care for all patients, including the very poor. Evidence from the United Kingdom has shown that the lower socio-economic classes benefited the most from the private sector's involvement in hospital care provision (McArthur, 1996).

The privatization of hospitals, primary care facilities, and other services cannot, however, be done without the introduction of competition. As Ferguson notes: "[p]rivate clinics will produce socially desirable results only when they are introduced into a competitive environment" (2002). Without competition between providers, most of the incentives to improve both cost performance and quality will be lost.

2.   Other government activities related to the health sector should be subjected to a competitive bidding process where private sector and public sector bidders are treated equally.

The benefits of outsourcing government activities have been well documented in academic studies.[34] In general, outsourcing of activities reduces the cost of services delivered, and results in either the same or a higher level of quality. It should also be noted that competitive bidding can improve the efficiency of service provision whether the provider chosen through a fair and unbiased process is publicly owned or privately owned. The key to improving service delivery is the involvement of the private sector in a competitive process.

An excellent example of a service that could be outsourced in The Bahamas is that provided by the Materials Management Directorate (MMD) and the Medical Surgical Supplies Distribution Unit (MSSD). These two programs procure, warehouse, and distribute medical and surgical materials and supplies for public health care providers and programs in The Bahamas. As the BRC notes, these programs could be improved through the introduction of "[a]n appropriate inventory accounting system… to avoid problems such as items being out of stock," and an increase in adequate storage capacity (BRC, 2004: 35).

It makes much more sense for government to simply outsource these activities to a competitive provider who already has expertise in procurement, warehouse management, and delivery. The government need only require that the competitive provider deliver services efficiently and ensure that medical materials are available as required, leaving the competitive provider to independently determine precisely what controls and facilities are required to maintain a quality service. Government could, if so desired, maintain oversight of what materials are to be stocked for health care providers through the current Supply, Analysis, Valuation, and Engineering (SAVE) Committee, which is responsible for "ensuring that new and existing biomedical products… are appropriately evaluated and standardized," (BRC, 2004: 35).

3.   Accreditation/certification of facilities and caregivers should be handled by a private third party.

The certification of practitioners and facilities should be maintain by independent third parties, which could be any of several licensing bodies in Canada, the United States, or Europe, or independent quality certification organizations that also practice in these regions.[35] Certification by an independent, reputable, and preferably offshore third party would provide the quality signal desired by the BRC and likely by many

Bahamians, while a lack of local oversight over the certification process would ensure that harmful political intervention would be constrained.

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34 See, for example, Domberger and Rimmer (1994), Savas (1982), McDavid (1988), and Domberger *et al.* (1995).
35 One potential example is the Joint Commission International (JCI) accreditation program for hospitals (www.jointcommissioninternational.com).

4. Hospital and facility care should be funded using a prospective fee-for-service, or case payment, system.

While budgetary allocation systems and capitation payments allow governments to exercise control over hospital expenditures, such schemes result in fewer services and a lower standard of care for patients because they disconnect funding from the provision of services to patients. Opting for a prospective fee-for-service payment regime would create powerful incentives to deliver a greater quantity and quality of services without leading to dramatic cost increases.

This method of funding is one in which the service provider is paid a fee for each individual treated, based on the expected costs of treating the diagnosis of the patient at the time of admission. It creates incentives for hospitals to treat more patients and to provide the types of services that patients desire. It also facilitates the introduction of competition into the hospital sector because the cost of performing procedures is clearly identified.

5. Physician care outside of hospitals should be funded fee-for-service.

Ultimately, the best remuneration systems are those that are output based. Physicians receiving salaries and capitation payments, unless well supervised, will tend towards less output because their pay is not dependent on the quality or quantity of services provided. Fee-for-service payment schemes, or some mixed payment scheme that has a significant output-based component, are clearly the superior choice for remuneration in terms of the quantity, and possibly the quality, of care provided. Opting for a payment scheme that is not based principally on fee-for-service serves to reduce the cost-effectiveness of the NHI program—costs would either rise to maintain services, or service provision would fall to maintain cost.

6. Patients must be required to share in the cost of NHI-funded services they consume through either co-payments or deductibles. Low income populations should be exempt from this requirement.

When individuals do not face any direct charges for health care at the point of service, they have no incentive to restrain their use of health care. Such a situation can produce excessive demand for care and result in wasted resources, to the extent that the costs of producing these services exceed what individuals would be willing to pay for them. Co-insurance, deductibles, and co-payments can increase efficiency in the health delivery sector and reduce costs, and can reduce the burden on those funding the NHI program because they redirect health care financing from payers to users. Since cost sharing can have an adverse effect on the health of the poor and the sick poor, these and certain other groups should be exempted from such a program.

7. NHI should be provided by both public and private insurance companies in a competitive marketplace. Bahamians should be required to purchase insurance by law, while those who cannot afford insurance should be given vouchers to purchase insurance from the provider of their choice. NHI insurance providers should also be permitted to offer a multitude of insurance options and not be regulated to the extent that consumer sovereignty or insurance plan flexibility is needlessly restricted.

A system of competitive social insurers has a number of benefits over a single government insurer model where premiums are levied in a manner which mirrors an income tax. Principally, this system is less likely to suffer from politically-motivated intervention and is more accountable to citizens than a system directly managed by government, as independent bodies collect the insurance payments and disperse the funds for health services. Some tax financing may still be required however to provide coverage for the poor, the unemployed, and possibly the elderly. Additionally, the freedom to choose among insurers generates efficiencies in the health care system as a result of competition and the possibility of varying cost-sharing schemes and benefits that allow lower insurance costs for those willing to pay more out of pocket.

Notably, a comparison published in the British Medical Journal of Britain's publicly funded National Health Service with California's Kaiser Permanente (a competitive private not-for-profit insurance company) found that the per capita costs of the two systems, adjusted for such aspects as differences in benefits and population characteristics, were similar to within 10 percent. However, it found that Kaiser members experienced more comprehensive and convenient primary care services and more rapid access to specialist services and hospital admissions. Kaiser's superior access, quality, and cost performance was attributed to better system integration, more efficient management of hospital use, the benefits of competition, and greater investment in information technology (Feachem, Sekhri, and White, 2002).

8.   A private parallel health care sector must continue to exist and should be subject to a bare minimum of regulation.

A parallel private health care sector gives individuals effective choice in the health care they receive. Without effective choice, health care delivery becomes a common, uncontested standard, leaving patients in a situation where they cannot protest for better quality by choosing to purchase health services from a different provider. It also allows individuals to seek care that the NHI program is either unable or unwilling to provide.

Private health insurance provides citizens with quick access to care when needed in return for a regular premium payment prior to the onset of a condition. Insurance also allows those who might prefer to do so, to pay an anticipated and fixed premium over time for access to private care, rather than pay the higher and less predictable cost for private care when they wish to receive it (even if they can afford to do so). Thus, private health insurance creates opportunities for those in lower income groups and allows people to tailor their expenditures to their own preferences.

Restrictions on or regulation of private health care and private health insurance are not benign. Regulation of services and prices can dampen the incentives for innovation and the introduction of greater choice through differentiated product offerings. Such regulation can also drive up the costs of health care services as competition stagnates and the incentive to decrease prices as a result of efficiency and innovation is virtually eliminated by a government determined rate. A private health sector, when introduced alongside a universal insurance scheme or even when acting as the sole provider of health services, must be allowed the flexibility to compete over the price and quality of services freely through the introduction of more innovative and effective forms of treatment and insurance cover.

Tables

Table 1: Spending on Health Care in the Bahamas 2001

Government Health Expenditure	$ 163,781,000
Private Health Expenditure	$ 179,191,000
Total Health Expenditure	$ 342,972,000
GDP	$ 4,950,000,000
Government Expenditure (%GDP)	3.3%
Private Expenditure (%GDP)	3.6%
Total Expenditure (%GDP)	6.9%

Sources: BRC, 2004; World Bank, 2005

Table 2: Health Spending in OECD Nations and Bahamas, age-adjusted % of GDP, 2001

	2001 Age Adjusted		2001 Age Adjusted
United States	14.9	Denmark	8.2
Bahamas	**14.9**	Ireland	8.0
Mexico	13.2	Belgium	7.7
Iceland	10.6	Sweden	7.6
Switzerland	10.1	Hungary	6.9
Canada	10.1	Czech Republic	6.9
Australia	9.8	Austria	6.9
Germany	9.4	United Kingdom	6.8
Greece	8.9	Italy	6.7
Netherlands	8.8	Japan	6.6
New Zealand	8.8	Spain	6.5
Average	8.6	Luxembourg	6.5
Korea	8.5	Finland	6.5
France	8.5	Poland	6.5
Norway	8.4	Slovak Republic	6.4
Portugal	8.4		

Sources: OECD, 2005; BRC, 2004; Esmail and Walker, 2005; calculations by author

Chart 1: Total (Public and Private) Health Spending in OECD Nations and the Bahamas, age-adjusted % of GDP, 2001
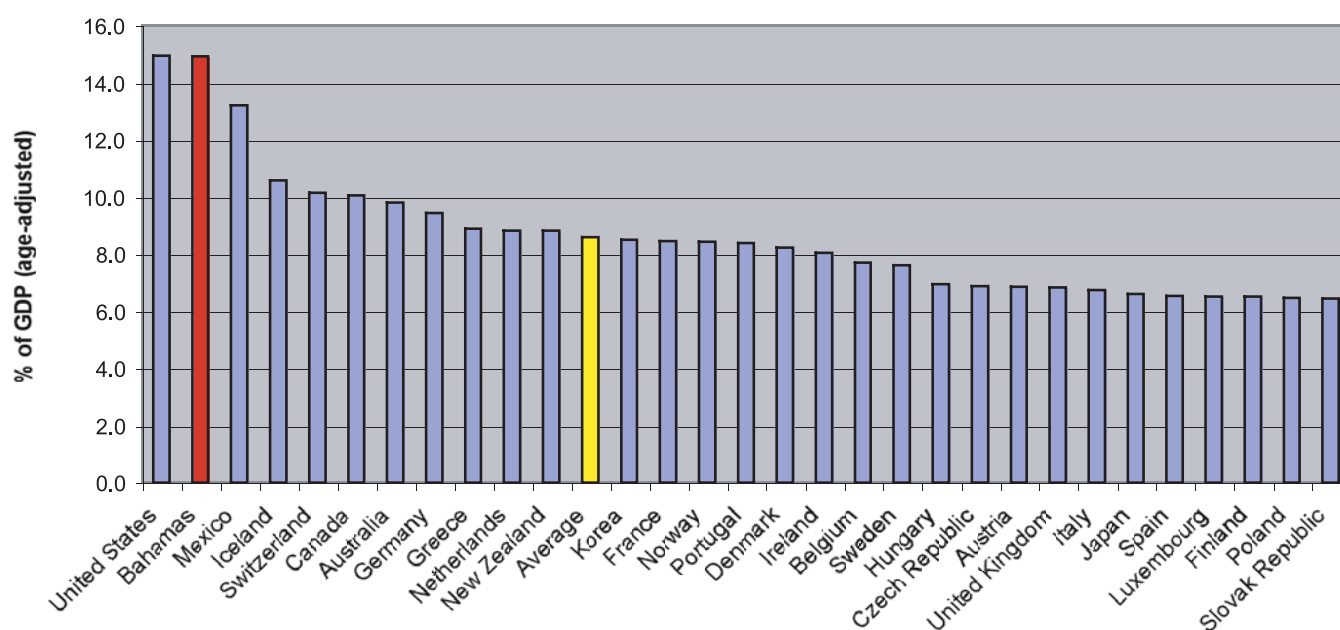
Table 3: Age-Adjusted Comparison of Doctors per 1,000 Population for the Bahamas and Select OECD Countries

	2001		2001
Iceland	4.0	Ireland	2.8
Greece	3.8	Norway	2.8
Italy	3.6	Sweden	2.8
Slovak Republic	3.6	Australia	2.7
Bahamas (2002)	**3.6**	Denmark	2.7
Belgium	3.4	Spain	2.7
Czech Republic	3.4	Finland	2.5
Netherlands	3.3	Luxembourg	2.5
Switzerland	3.3	New Zealand	2.5
Mexico	3.3	Poland	2.5
Austria	3.1	United States	2.4
France	3.0	Canada	2.2
Germany	2.9	Korea	2.2
Average	2.9	United Kingdom	1.8
Hungary (1999)	2.9	Japan (2000)	1.6
Portugal	2.9		

Sources: OECD, 2005; PAHO, 2006; Esmail and Walker, 2005; calculations by author

Chart 2: Age-Adjusted Comparison of Doctors per 1,000 Population for the Bahamas and Select OECD Countries, 2001
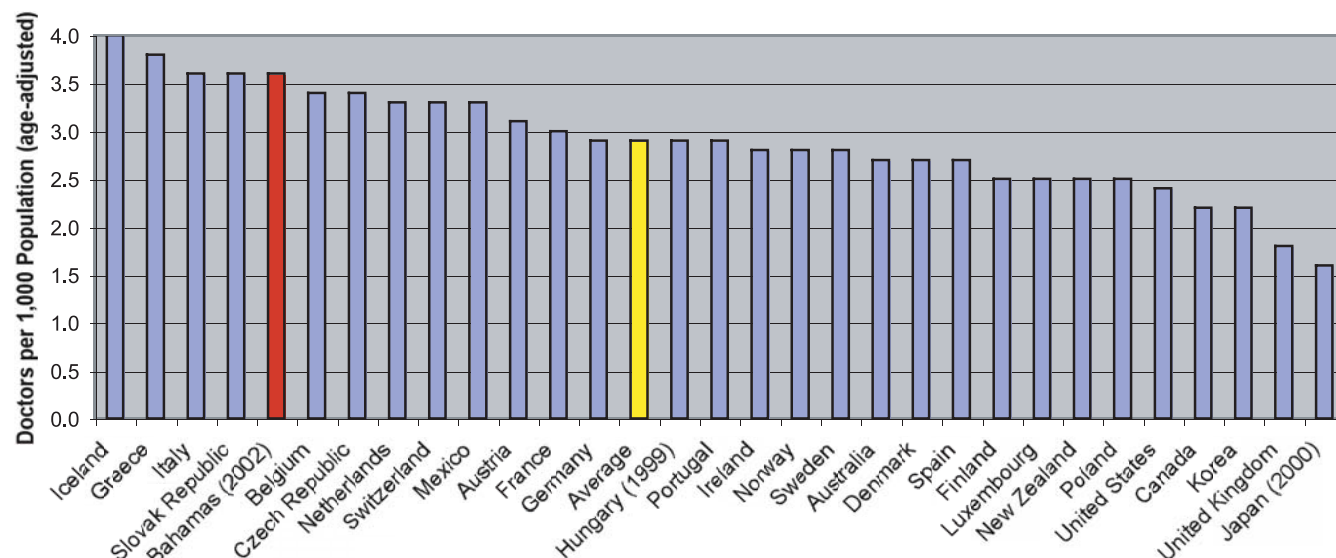
Table 4: Age-Adjusted Comparison of MRI Machines per Million Population for the Bahamas and Select OECD Countries

	2003		2003
Japan (2002)	29.9	Belgium (2002)	5.8
Iceland	19.7	Germany	5.4
Korea	14.2	Canada	4.8
Switzerland	13.2	New Zealand	4.1
Austria	12.5	Australia	4.0
Finland	12.1	Portugal	3.5
Luxembourg	11.1	France	2.5
Italy	9.5	Czech Republic	2.4
United States (2002)	9.3	Hungary	2.4
Denmark	8.7	Slovak Republic	2.3
Average	7.8	Greece (2002)	2.0
Bahamas (2006)	**6.7**	Poland	1.1
Spain	6.4	Mexico	0.4

Sources: OECD, 2005; Lowe, 2006; PAHO, 2006; Esmail and Walker, 2005; calculations by author

Chart 3: Age-Adjusted Comparison of MRI Machines per Million Population for the Bahamas and Select OECD Countries, 2003 (Japan not shown)
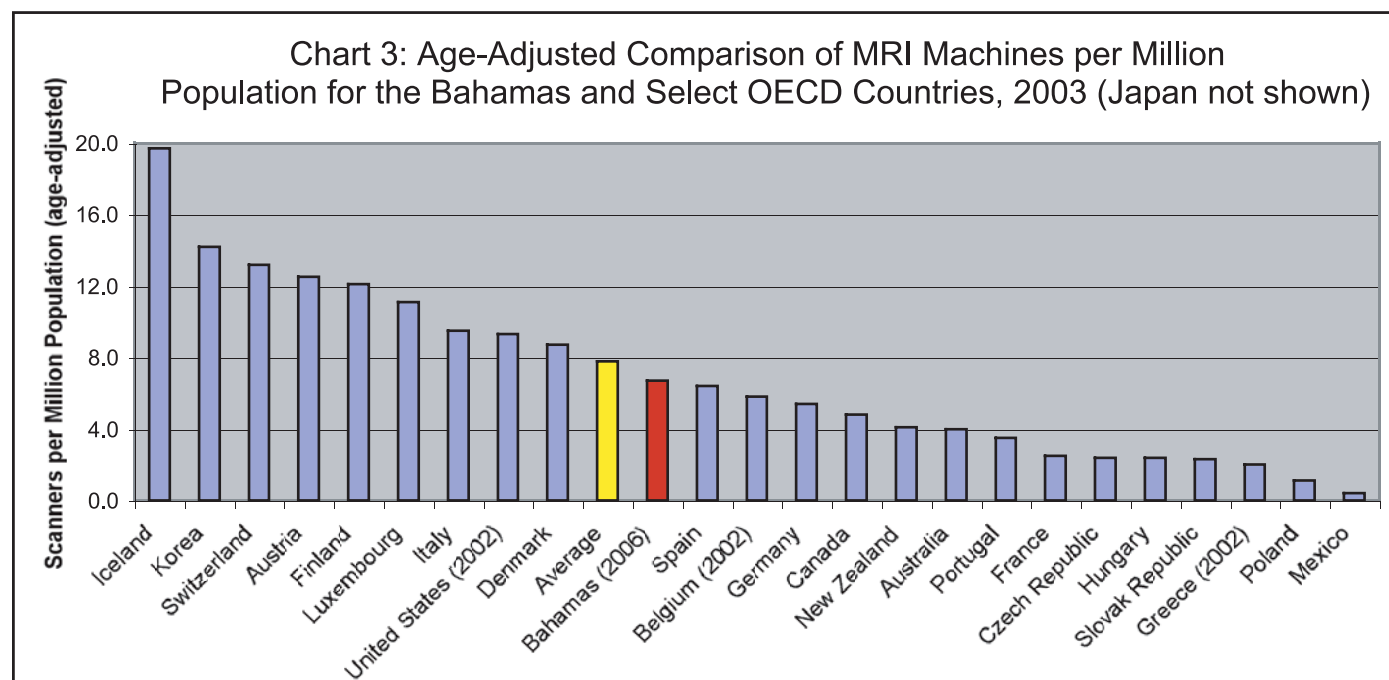
Table 5: Age-Adjusted Comparison of CT Scanners per Million Population for the Bahamas and Select OECD Countries

	2003		2003
Japan (2002)	78.3	Finland	13.2
Korea	50.3	Germany	12.9
Luxembourg	26.8	New Zealand	12.8
Austria	25.2	Czech Republic	12.6
Belgium (2002)	25.2	Portugal	11.4
Iceland	23.5	Spain	11.3
Bahamas (2006)	**20.1**	Canada	11.0
Italy	19.7	Slovak Republic	10.0
Average	18.7	France	7.6
Switzerland	16.8	Poland	6.8
Greece (2002)	14.9	Hungary	6.5
United States (2002)	14.2	Mexico	3.3
Denmark	13.9		

Sources: OECD, 2005; Lowe, 2006; PAHO, 2006; Esmail and Walker, 2005; calculations by author

Chart 4: Age-Adjusted Comparison of CT Scanners per Million Population for the Bahamas and Select OECD Countries, 2003 (Japan and Korea not shown)
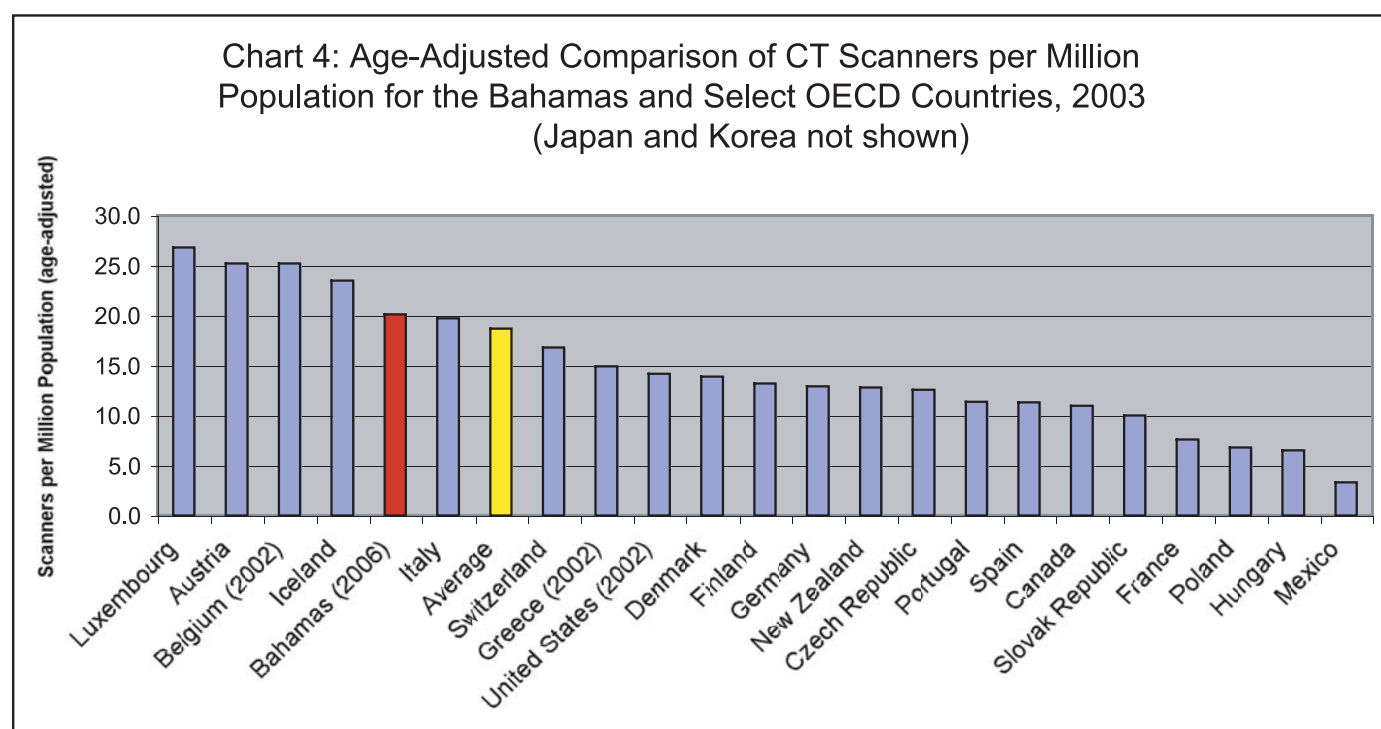
Table 2: Hospital Beds per 1,000 Population for Select Countries in the Americas

	2001	Rank		2001	Rank
Cuba	5.0	1			
St. Vincent & Grenadines	4.7	2	Puerto Rico	3.3	17
Martinique	4.5	3	Guyana	2.9	19
Canada	4.3	4	Antigua and Barbuda	2.6	20
Saint Kitts and Nevis	4.3	4	Chile	2.5	21
El Salvador	4.1	6	Barbados	2.1	22
Honduras	4.1	6	Colombia	1.6	23
Guadeloupe	3.9	8	Ecuador	1.6	23
Montserrat	3.8	9	Costa Rica	1.5	25
French Guiana	3.6	10	Jamaica	1.5	25
Suriname	3.6	10	Mexico	1.1	27
United States	3.6	10	Bolivia	1.0	28
Dominica	3.5	13	Nicaragua	1.0	28
Bahamas	**3.4**	**14**	Venezuela	0.8	30
Cayman Islands	3.4	14	Guatemala	0.5	31
Trinidad and Tobago	3.4	14	*Average*	2.9	—
Aruba	3.3	17			

Note: Some nations were not included due to a lack of data availability

Source: PAHO, 2006

Table 3: Hospital Discharges per 1,000 Population for Select Countries in the Americas

	2002	Rank		2002	Rank
Martinique (2000)	201.9	1	Barbados	80.0	24
French Guiana (2000)	177.2	2	Montserrat	79.4	25
Guadeloupe (2000)	174.5	3	**Bahamas**	**78.4**	**26**
Aruba	164.8	4	Panama	76.7	27
Cayman Islands	136.7	5	Belize (2000)	66.6	28
Colombia (2000)	123.2	6	Dominican Republic	66.1	29
Dominica	120.9	7	Jamaica	66.1	29
Saint Kitts and Nevis	115.8	8	Turks & Caicos Islands	66.1	29
United States (2001)	113.4	9	El Salvador	65.2	32
Cuba	111.0	10	Brazil	64.6	33
Puerto Rico	109.8	11	Mexico	61.2	34
Anguilla	104.8	12	Argentina	60.9	35
Chile (2001)	104.3	13	Ecuador	55.3	36
Bermuda (2000)	92.4	14	Nicaragua	51.8	37
St. Vincent & Grenadines	92.2	15	Guyana	49.3	38
Trinidad and Tobago (2000)	91.2	16	Bolivia	49.1	39
Canada	91.0	17	Uruguay (2000)	46.1	40
Saint Lucia	90.2	18	Honduras (2001)	42.8	41
Suriname (2000)	87.7	19	Peru	35.7	42
Grenada	86.6	20	Guatemala	31.3	43
Costa Rica (2001)	83.1	21	Paraguay	25.1	44
Antigua and Barbuda	81.8	22	*Average*	87.6	—
Virgin Islands (UK)	80.3	23			

Note: Some nations were not included due to a lack of data availability. Source: PAHO, 2006

Table 4: Infant Mortality (per 1,000 live births) in Select OECD Nations and the Bahamas

	2001	% Change from 1997		2001	% Change from 1997
Iceland	2.7	-50.9%	Canada	5.2	-5.5%
Japan	3.1	-16.2%	Australia	5.3	0.0%
Finland	3.2	-17.9%	Netherlands	5.4	8.0%
Sweden	3.7	2.8%	United Kingdom	5.5	-6.8%
Norway	3.9	-4.9%	New Zealand	5.6	-17.6%
Czech Republic	4.0	-32.2%	Ireland	5.7	-6.6%
Germany	4.3	-12.2%	Luxembourg	5.8	38.1%
Spain	4.4	-12.0%	Slovak Republic	6.2	-28.7%
Belgium	4.5	-26.2%	United States	6.8	-5.6%
France	4.5	-4.3%	Poland	7.7	-24.5%
Italy	4.7	-16.1%	Hungary	8.1	-18.2%
Austria	4.8	2.1%	**Bahamas***	**14.3**	**-12.8%**
Denmark	4.9	-5.8%	Mexico	22.4	-13.5%
Portugal	5.0	-21.9%	Turkey	40.6	-4.2%
Switzerland	5.0	4.2%	*Average*	7.1	-11.0%
Greece	5.1	-20.3%			

* Estimate of infant mortality for the Bahamas produced by the United Nations' Population Division (PAHO, 2006)   Sources: OECD, 2005; PAHO, 2006

Table 5: Estimated Infant Mortality (per 1,000 live births)* in Select Countries in the Americas

	2001	Rank	% Change from 1997		2001	Rank	% Change from 1997
Canada	5.1	1	-7.3%	Turks & Caicos Islands	18.1	26	-13.4%
Aruba	6.4	2	-8.6%	Venezuela	18.2	27	-12.1%
Cuba	6.8	3	-29.2%	Virgin Islands (UK)	20.3	28	-14.7%
United States of America	7.0	4	-5.4%	Panama	21.3	30	-10.1%
Martinique	7.3	5	-8.8%	Mexico	21.9	31	-20.9%
Guadeloupe	7.5	6	-9.6%	Antigua and Barbuda	22.3	32	-12.9%
Montserrat	8.2	7	-10.9%	Anguilla	24.6	33	-8.6%
Chile	8.7	8	-24.3%	St. Vincent & Grenadines	26.1	34	-7.4%
Cayman Islands	9.1	9	-16.5%	Suriname	26.4	35	-10.5%
Bermuda	9.6	10	-6.8%	Colombia	26.5	36	-11.7%
Virgin Islands (US)	9.8	11	-12.5%	Ecuador	26.6	37	-20.1%
Puerto Rico	10.1	12	-8.2%	El Salvador	27.5	38	-14.1%
Costa Rica	10.7	13	-9.3%	Brazil	28.7	39	-15.8%
Barbados	11.1	14	-10.5%	Belize	31.0	40	-5.5%
Netherlands Antilles	13.4	15	-5.6%	Nicaragua	31.1	41	-11.1%
Trinidad and Tobago	14.0	16	-6.7%	Honduras	32.7	42	-8.7%
Uruguay	14.0	16	-20.0%	Peru	35.2	43	-16.4%
Bahamas	**14.3**	**18**	**-12.8%**	Dominican Republic	35.7	44	-11.4%
French Guiana	14.6	19	-11.0%	Paraguay	37.4	45	-4.6%
Grenada	14.6	19	0.0%	Guatemala	40.3	46	-12.0%
Jamaica	15.1	21	-3.8%	Guyana	50.5	47	-10.0%
Saint Lucia	15.3	22	-8.4%	Bolivia	57.8	48	-13.3%
Saint Kitts and Nevis	16.3	23	-28.2%	Haiti	63.0	49	-7.9%
Argentina	16.4	24	-24.8%	*Average*	20.9	29	-12.0%
Dominica	16.5	25	-12.7%				

* The estimated infant mortality rate is produced by the United Nations' Population Division (PAHO, 2006)
Source: PAHO, 2006

Table 6: Causes of Death Considered Amenable to Health Care

Cause of Death	Age Range
Intestinal infections	0-14
Tuberculosis	0-74
Other infections (diphtheria, tetanus, poliomyelitis)	0-74
Whooping cough	0-14
Septicaemia	0-74
Measles	1-14
Malignant neoplasm of colon and rectum	0-74
Malignant neoplasm of skin	0-74
Malignant neoplasm of breast	0-74
Malignant neoplasm of cervix and uteri	0-74
Malignant neoplasm of cervix uteri and body of uterus	0-44
Malignant neoplasm of testes	0-74
Hodgkin's disease	0-74
Leukaemia	0-44
Diseases of the thyroid	0-74
Diabetes mellitus	0-49
Epilepsy	0-74
Chronic rheumatic heart disease	0-74
Hypertensive disease	0-74
Cerebrovascular disease	0-74
All respiratory diseases (excluding pneumonia and influenza)	1-14
Influenza	0-74
Pneumonia	0-74
Peptic ulcer	0-74
Appendicitis	0-74
Abdominal Hernia	0-74
Cholelithiasis and cholecystitis	0-74
Nephritis and nephrosis	0-74
Benign prostatic hyperplasia	0-74
Maternal death	All
Congenital cardiovascular anomalies	0-74
Perinatal deaths, all causes, excluding stillbirths	All
Misadventures to patients during surgical and medical care	All
Ischaemic heart disease (50%)	0-74

Source: Nolte and McKee, 2003

Table 7: Age-Standardized Incidence and Mortality from Breast Cancer in OECD Nations and the Bahamas, 2002

	Female Incidence	Female Mortality	Mortality Rate	Rank
United States	101.1	19.0	18.8%	1
Sweden	87.8	17.3	19.7%	2
Finland	84.7	17.4	20.5%	3
Korea	20.4	4.4	21.6%	4
Iceland	90.0	19.6	21.8%	5
Australia	83.2	18.4	22.1%	6
Luxembourg	82.5	19.3	23.4%	7
France	91.9	21.5	23.4%	8
Norway	74.8	17.9	23.9%	9
Switzerland	81.7	19.8	24.2%	10
Canada	84.3	21.1	25.0%	11
Japan	32.7	8.3	25.4%	12
Italy	74.4	18.9	25.4%	13
New Zealand	91.9	24.5	26.7%	14
Germany	79.8	21.6	27.1%	15
United Kingdom	87.2	24.3	27.9%	16
Austria	70.5	20.6	29.2%	17
Greece	51.6	15.4	29.8%	18
Belgium	92.0	27.7	30.1%	19
Portugal	55.5	17.0	30.6%	20
Poland	50.3	15.5	30.8%	21
Spain	50.8	15.9	31.3%	22
Denmark	88.7	27.8	31.3%	23
Netherlands	86.7	27.5	31.7%	24
Ireland	74.9	25.5	34.0%	25
Czech Republic	58.4	20.0	34.2%	26
Hungary	63.0	24.6	39.0%	27
Bahamas	**54.4**	**21.5**	**39.5%**	**28**
Mexico	26.4	10.5	39.8%	29
Slovak Republic	48.0	19.3	40.2%	30
Turkey	22.0	9.7	44.1%	31
Average	69.1	19.1	28.8%	—

Source: Ferlay et al., 2004; calculations by author

Table 8: Age-Standardized Incidence and Mortality from Breast Cancer in select countries in the Americas, 2002

	Female Incidence	Female Mortality	Mortality Rate	Rank
United States	101.1	19.0	18.8%	1
Canada	84.3	21.1	25.0%	2
Puerto Rico	50.4	14.3	28.4%	3
Uruguay	83.1	24.1	29.0%	4
Argentina	73.9	21.8	29.5%	5
Chile	43.9	13.1	29.8%	6
Brazil	46.0	14.1	30.7%	7
Dominican Republic	36.1	11.5	31.9%	8
Venezuela	34.3	13.4	39.1%	9
Nicaragua	23.9	9.4	39.3%	10
Bahamas	**54.4**	**21.5**	**39.5%**	**11**
El Salvador	13.6	5.4	39.7%	12
Mexico	26.4	10.5	39.8%	13
Belize	29.8	11.9	39.9%	14
Peru	35.1	14.0	39.9%	14
Guyana	29.5	11.9	40.3%	16
Trinidad & Tobago	51.1	20.6	40.3%	16
Paraguay	34.4	13.9	40.4%	18
Barbados	62.4	25.5	40.9%	19
Colombia	30.3	12.5	41.3%	20
Ecuador	23.5	9.7	41.3%	20
Panama	29.0	12.0	41.4%	22
Jamaica	43.5	18.3	42.1%	23
Suriname	30.0	12.9	43.0%	24
Costa Rica	30.9	13.6	44.0%	25
Haiti	4.4	2.0	45.5%	26
Guatemala	25.9	12.1	46.7%	27
Honduras	25.9	12.1	46.7%	27
Cuba	31.2	14.6	46.8%	29
Bolivia	24.7	11.6	47.0%	30
Average	40.4	14.3	38.3%	—

Source: Ferlay et al., 2004; calculations by author

Table 9: Age-Standardized Incidence and Mortality from Colorectal Cancer in OECD Nations and the Bahamas, 2002

	Female Incidence	Female Mortality	Male Incidence	Male Mortality	Average Mortality Ration (Male & Female)	Rank
United States	33.1	11.6	44.6	15.2	34.6%	1
Switzerland	25.2	9.7	42.7	15.2	37.0%	2
Australia	35.9	13.3	47.4	18.7	38.2%	3
Canada	30.6	11.7	42.2	16.1	38.2%	3
Japan	26.5	11.1	49.3	17.3	38.5%	5
Italy	26.6	10.9	39.2	16.5	41.5%	6
Luxembourg	30.7	13.4	43.6	18.6	43.2%	7
Iceland	27.0	13.2	34.0	12.8	43.3%	8
Korea	15.8	6.7	24.7	10.9	43.3%	8
Sweden	26.2	11.1	33.4	14.9	43.5%	10
New Zealand	42.2	18.5	53.0	23.2	43.8%	11
France	25.9	11.8	40.8	18.2	45.1%	12
Germany	33.1	15.7	45.5	19.9	45.6%	13
United Kingdom	26.5	12.4	39.2	17.5	45.7%	14
Finland	21.1	9.8	25.5	11.5	45.8%	15
Norway	37.1	16.8	43.4	20.1	45.8%	15
Netherlands	30.8	14.4	40.9	18.9	46.5%	17
Austria	27.8	13.9	42.1	20.1	48.9%	18
Spain	22.5	11.3	36.8	18.5	50.2%	19
Greece	15.6	8.0	19.4	9.7	50.6%	20
Belgium	26.8	14.1	37.0	18.7	51.6%	21
Ireland	27.0	13.7	43.1	23.6	52.7%	22
Poland	23.5	11.4	31.9	18.2	52.8%	23
Portugal	21.0	11.9	35.9	20.0	56.2%	24
Czech Republic	32.0	18.0	58.5	34.0	57.2%	25
Denmark	33.0	19.2	41.0	23.3	57.5%	26
Mexico	7.0	4.1	7.9	4.5	57.8%	27
Bahamas	**14.7**	**8.9**	**15.2**	**8.6**	**58.6%**	**28**
Slovak Republic	27.4	16.0	54.5	33.2	59.7%	29
Hungary	33.7	21.2	56.6	35.6	62.9%	30
Turkey	8.5	5.4	9.1	5.8	63.6%	31
Average	26.3	12.6	38.0	18.0	48.4%	—

Source: Ferlay et al., 2004; calculations by author

Table 10: Age-Standardized Incidence and Mortality from Colorectal Cancer in Select Countries in the Americas, 2002

	Female Incidence	Female Mortality	Male Incidence	Male Mortality	Average Mortality Ration (Male & Female)	Rank
United States	33.1	11.6	44.6	15.2	34.6%	1
Puerto Rico	20.5	7.4	26.6	10.5	37.8%	2
Canada	30.6	11.7	42.2	16.1	38.2%	3
Brazil	14.3	6.4	14.4	6.4	44.6%	4
Uruguay	29.5	14.2	39.6	18.4	47.3%	5
Argentina	19.1	9.8	30.1	14.6	49.9%	6
Chile	15.1	7.8	15.8	7.7	50.2%	7
Guyana	8.9	4.7	16.5	9.6	55.5%	8
Dominican Republic	12.3	6.8	11.6	6.5	55.7%	9
Colombia	14.5	7.6	11.7	7.3	57.4%	10
Venezuela	11.6	6.7	11.2	6.4	57.5%	11
Belize	5.8	2.9	4.9	3.2	57.7%	12
Mexico	7.0	4.1	7.9	4.5	57.8%	13
Nicaragua	10.6	6.2	5.2	3.0	58.1%	14
Suriname	12.5	7.2	10.1	6.0	58.5%	15
Bahamas	**14.7**	**8.9**	**15.2**	**8.6**	**58.6%**	**16**
Trinidad & Tobago	16.0	9.7	14.8	8.5	59.0%	17
El Salvador	6.2	3.7	4.4	2.6	59.4%	18
Paraguay	9.0	5.3	10.3	6.2	59.5%	19
Ecuador	10.0	5.9	7.6	4.6	59.8%	20
Peru	12.3	7.4	11.7	7.1	60.4%	21
Jamaica	12.0	7.3	14.3	8.6	60.5%	22
Barbados	18.5	11.1	24.1	14.8	60.7%	23
Panama	11.2	7.0	12.1	7.4	61.8%	24
Haiti	7.5	4.8	11.3	7.3	64.3%	25
Bolivia	8.5	5.5	15.9	10.3	64.7%	26
Guatemala	7.4	4.8	7.9	5.2	65.3%	27
Honduras	7.4	4.8	7.9	5.2	65.3%	27
Costa Rica	12.2	9.6	11.6	8.3	75.1%	29
Cuba	17.0	13.5	13.4	10.7	79.6%	30
Average	13.8	7.5	15.8	8.4	57.2%	—

Source: Ferlay et al., 2004; calculations by author

Table 11: Health Policies in Top-Performing OECD Countries'

	User Fees*			Private Delivery of Public Services Care	Purchaser/ Provider Split in Public System	Private Health Insurers within Public System**
	Hospital (Inpatient	GP/ Primary Treatment)	Specialist Care			
Australia	No	Yes	Yes	Yes, Contracted	No	n/a
France	Yes	Yes	Yes	Yes, Open Competitive	Yes	No
Japan	Yes	Yes	Yes	Yes, Open Competitive	Yes	Yes
Singapore	Yes	Yes	Yes	Yes, Open Competitive	Yes	n/a
Sweden	Yes	Yes	Yes	Yes, Restricted Competitive	Yes	n/a
Switzerland	Yes	Yes	Yes	Yes, Open Competitive	Yes	Yes

* Indicates whether the public system charges user fees or co-payments for publicly funded treatment.
** In countries with social insurance models of health care financing

Sources: Irvine, Hjertqvist, and Gratzer, 2002, with updates from Esmail and Walker, 2005; Esmail, 2004 & 2006; Ramsay, 2001; and Hilless and Healy, 2001.

Table 12: Mortality Amenable to Health Care in Select OECD Nations and the Bahamas, 2000

	Mortality per 100,000 (Age-standardized)
France	72.7
Japan	78.5
Australia	81.1
Canada	82.3
Sweden	84.2
Spain	85.2
Norway	88.0
Netherlands	90.6
Italy	94.0
Denmark	100.3
New Zealand	101.4
Germany	104.5
Finland	107.5
Average	108.1
Austria	109.9
Greece	118.3
United States	127.5
Portugal	145.1
Ireland	149.0
United Kingdom (1999)	157.0
Bahamas	**184.1**

Source: WHO, 2004; calculations by author

Chart 5: Mortality Amenable to Health Care in Select OECD Nations and the Bahamas, 2000
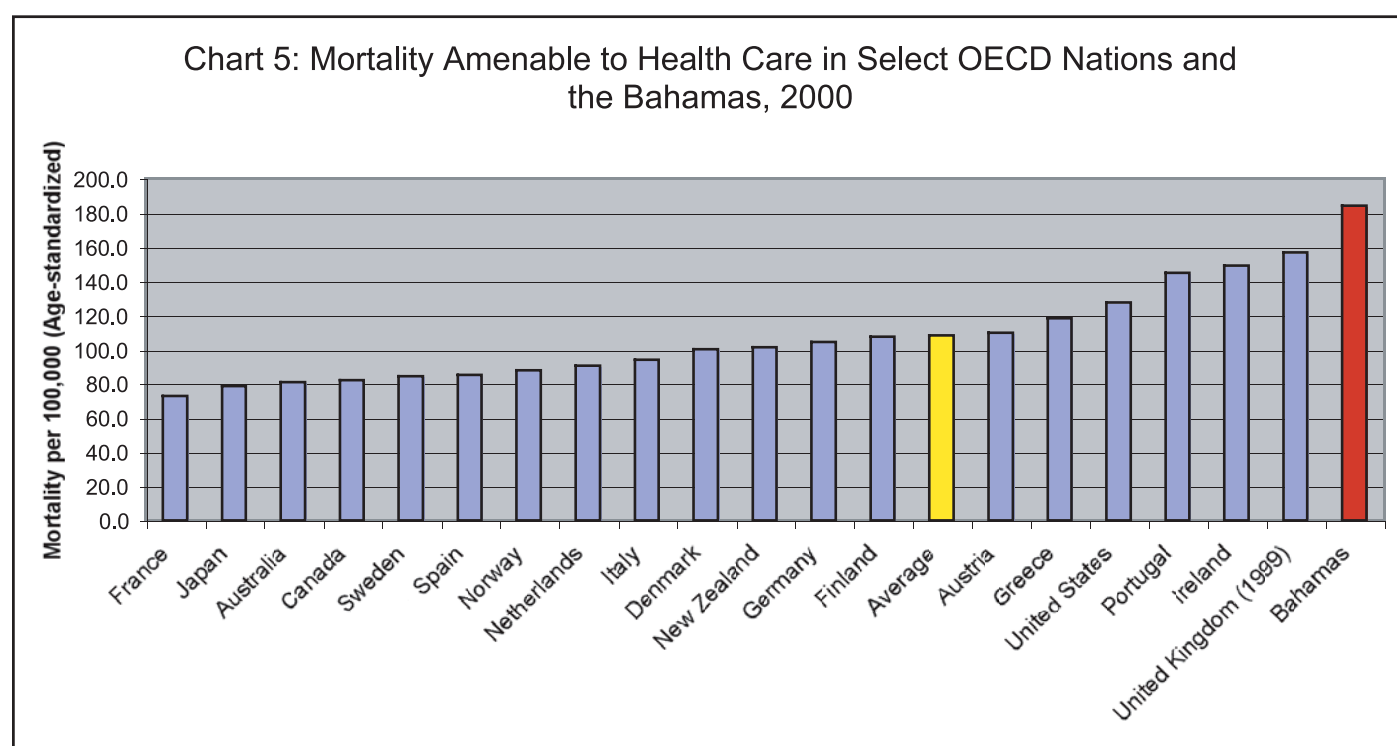
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