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# Capital Spending in Healthcare: a Missed Opportunity for Improvement?

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## KEY MESSAGES FOR DECISIONS-MAKERS

Capital represents the total pool of funds expended by a firm, organization, or government to build, acquire, or upgrade physical assets such as property, buildings, technology or equipment. Capital is an essential tool to maintain and grow our healthcare system. Canada currently spends at least \$8.8 billion on healthcare capital annually and capital represents the fastest growing component of health system spending. However, the true capital needs of our healthcare system are not well understood and there is a paucity of literature on how best to manage capital acquisition and expenditure in healthcare.

Access to capital in the healthcare system is largely controlled by provincial governments. Governments manage capital through a variety of mechanisms, by directly approving capital projects, mandating planning guidelines for construction, and by controlling operating funding flows. Historically, government policy on healthcare capital has tended to alternate between controls and expansion. There are inherent advantages in government planning of capital; chief among these is the ability of most governments to borrow cheaply because of relatively low interest rates and relatively high credit ratings. Theoretically, government planning should also lead to greater equity in capital distribution based on value. However, important limitations exist as well including rigidity due to government planning cycles, challenges in understanding market dynamics and local need in central bureaucracies, and variability in political priorities and agendas that can affect capital decision-making. Philanthropy increasingly also has an important role to play. However, despite substantial growth in philanthropy, it is a fragile source of capital subject to economic cyclicalities.

The question of whether capital investment is appropriate and matches needs is important to any consideration of how well the healthcare system is managed. There has been little estimation of the overall need for capital in healthcare in Canada, but an apparent under-investment in capital has been acknowledged by governments at regular intervals despite substantial differences in the way that capital needs are identified and approved within and across provinces in Canada. Moreover, current policies that require substantial matching of funds may re-enforce inequities in capital allocation as poorly performing and smaller communities face difficulty in raising funds. There has also been little innovation in capital finance in Canadian healthcare with a few examples of Public-Private Partnerships (P3) and experimentation with bond issues, but with limited evidence on effectiveness. Taken together, these arguments characterize healthcare capital spending as an important but perhaps under-addressed element of financing reforms to improve sustainability of the healthcare system.

In order to create a stronger platform for using capital investment to improve health system performance, policy-makers and researchers will need to create new resources to support capital investment. There is a need for new resources to analyze the need for capital, how it may be deployed to increase health system performance, and the associated return on investment, including: a capacity planning model for the Canadian healthcare system; benchmarks on expected returns on capital investment to guide capital decisions in healthcare; skilled individuals and tools to share best practices in capital planning used by government, the private sector, and healthcare organizations. To support transformation, decision-makers will also need to increase the amount and availability of capital that can improve health system performance and shift capital financing methods to those that help increase the return on investment and the efficiency of the investment process. Decision-makers should consider: expanding the use private vehicles and the engagement of the Canadian investing community as a way of increasing access to capital for healthcare organizations; developing a regulatory framework where healthcare capital investment is focused on improvement and value; and supporting philanthropy as an important source of healthcare capital through additional tax and other incentives; expanding the use of hospital funding models that can reward quality and efficiency gains achieved through capital investment; and starting pilot projects in social finance that link financing to improvements in value. In the near term,

policy-makers and other decision-makers should focus on ensuring that current capital investments are appropriate and match needs, are as efficient as possible, employ the best and latest innovations in capital finance structures and that the available pool of capital is expanded first through unlocking of capital already in the system before allocating new dollars.

Capital represents the total pool of funds expended by a firm, organization, or government to build, acquire, or upgrade physical assets such as property, buildings, technology or equipment. In healthcare, capital is required to build new hospitals or long-term care facilities, purchase new technologies such as MRI machines, or upgrade existing equipment such as laboratory platforms. Capital expenditures in the healthcare system can range in size from only a few thousand dollars to hundreds of millions of dollars. Capital expenditures can also range in complexity, from simple debt-based investments in a single institution through to multi-institution investments with public and private partners, covering multiple years, geographies, and financing structures.

Unlike operating funds that come almost exclusively from provincial governments in Canada, sources of capital are more varied and often include a substantial gift or contribution from corporations, foundations, or individuals (philanthropy). Capital is an essential tool to maintain and grow our healthcare system, to realize efficiencies and improve quality, and to meet the needs of our aging Canadian population. Capital, or the investment of “funds to maximize the efficiency and value of the enterprise,” is associated with a range of measures of improvement and performance in healthcare. Although this argument may seem common-sense, there has also been empirical validation of many of these arguments in favour of capital investment. A largely US based set of literature suggests that hospitals with greater availability of financial resources to spend on care are associated with hospitals’ increased likelihood of making capital investments and adopting innovations leading to some improvements in hospital performance.

Canada currently spends at least \$8.8 billion on healthcare capital annually.<sup>1</sup> This is relatively small compared to other spending categories, but it represents the fastest growing component of health system spending, although at least part of this growth is due to much lower levels of capital expenditure in prior decades. Governments have acknowledged an under-investment in capital and substantial differences were found in the way that capital needs are identified and approved within and across provinces in Canada.

Traditionally, access to capital is largely controlled by provincial governments, with approximately 80% of capital spending in healthcare publicly-financed.<sup>2</sup> This is largely accounted for by spending on hospital physical plant. Governments manage capital through a variety of mechanisms, by directly approving capital projects, mandating planning guidelines for construction, and by controlling operating funding flows. Historically, government policy on healthcare capital, to the extent that it exists, has tended to alternate between controls and expansion. There are inherent advantages in government planning of capital; chief among these is the ability of most governments to borrow cheaply because of relatively low interest rates and relatively high credit ratings. Theoretically, government planning should also lead to greater equity in capital distribution based on value. However, important limitations exist including rigidity due to government planning cycles, challenges

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1 Canadian Institute for Health Information, National Health Expenditure Trends, 1975 to 2011, November 2011. CIHI data are based on the Statistics Canada Capital and Repair Expenditures Survey, which looks at expenditures on capital by industry sector.

2 Canadian Institute for Health Information, National Health Expenditure Trends, 1975 to 2011, November 2011. CIHI data are based on the Statistics Canada Capital and Repair Expenditures Survey, which looks at expenditures on capital by industry sector.

in understanding market dynamics and local needs by centralized bureaucracies, and variability in political priorities and agendas that can affect capital decision-making. Philanthropy increasingly also has an important role to play. In 2011, Canadians contributed \$1.355 billion to Canadian healthcare institutions through giving; a 12.5% increase over the previous year.<sup>3</sup> Despite substantial growth in philanthropy, it is a fragile source of capital because it is subject to economic cyclical and variability in donor interests and priorities that may affect equity in the healthcare system.

In light of the current difficult economic conditions in some provinces and growing healthcare demands, attempts should be made to calculate the required amount of capital and to broaden access to capital through a variety of mechanisms in order to establish a large enough capital pool to service the healthcare needs of Canadians now and into the future. Attempts should also be made to ensure equitable division of capital – a formidable task that requires an understanding of the value of current healthcare capital and the relative needs of a diverse population. Given its potentially important relationship to quality, the impact of capital spending on operating spending needs to be more clearly understood with a need to focus on those investments that improve the efficiency and value of the care delivered in the system overall. Moreover, there is some potential value in exploring innovations in capital financing from other industries and geographies.

However, aside from the new template approach to design-build-finance-maintain (DBFM) public-private partnerships (P3), there is still little else that can be considered innovative or even best practice. P3 themselves come in different forms and emerging models from other countries have the potential to add to the diversity of models, but there is little consistent evidence on the long-term impacts of P3. Unfortunately, there is limited ability within the Canadian healthcare system to evaluate and manage capital structure, return models, and project finance in a sophisticated way that would mirror other large capital-intensive private industries or infrastructure investments. For such an evolution to happen, several important hurdles would have to be overcome around information, skills, innovation and the availability of capital. To date, there has been little explicit consideration of who should be involved and when they should be involved in capital financing decisions in contrast to jurisdictions like the US and the UK have created agencies whose role includes assessing the financial and managerial capacity of healthcare organizations to assess risk.

In order to create a stronger platform for using capital investment to improve health system performance, policy-makers and researchers will need to create new resources to support capital investment. A critical element of this platform is resources to analyze the need for capital, how it may be deployed to increase health system performance, impacts on operating costs of capital investments, equity, and return on investment. More specifically, we suggest that governments and health system providers work together to:

- a. *Build a capacity planning model for the Canadian healthcare system.* This model should recognize demographic shifts, trade-offs between different sectors (e.g. long-term care and home care), the effect of capital and capacity increases on health system efficiency and performance, and calculate the total capital requirements across our healthcare system.
- b. *Set benchmarks on expected returns on capital investment to guide capital decisions in healthcare.* Information comparing the cost of capital (and the cost of procurement) and the expected returns should be a component of any request for funding by healthcare organizations. This information could be made public in a way that supported the needs of individual healthcare corporations, researchers, and investors.

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3 Association for Healthcare Philanthropy, <http://www.ahp.org/publicationandtools/News/Releases/2012NewsReleases/Pages/10032012.aspx>.

- c. *Create a shared resource of skilled individuals and tools to share best practices in capital planning to be used by government, the private sector, and healthcare organizations.* There are few individuals with the full set of skills and wide experience in innovative approaches to capital in the Canadian publicly funded healthcare system. However, extensive expertise exists amongst large Canadian pension funds, non-healthcare corporations, and other areas of the public service. Without this expertise, models and benchmarks will not be useful.

*Policy-makers should also work to Increase the amount and availability of capital that can improve health system performance and shift capital financing methods to those that help increase the return on investment and the efficiency of the investment. Policy-makers wishing to increase access to capital could:*

- a. *Expand the use private vehicles and the engagement of the Canadian investing community as a way of increasing access to capital for healthcare organizations.* Attention to other structured finance tools such as bond issues by healthcare institutions where the total long-term costs are clear and predictable may provide the advantage of not requiring direct and immediate government contribution and may provide an extremely effective way to leverage current public sector assets.
- b. *Develop a regulatory framework where healthcare capital investment that is focused on improvement and value.* This regulatory framework should encourage integrated capital planning and allocation across sectors of care to capture the potential cost and quality advantages of integration. Current models of allocation tend to focus on a specific set of sectors and do not necessarily encourage the delivery of the right care in the right place.
- c. *Support philanthropy as an important source of healthcare capital through additional tax and other incentives.* This should include attention to focus on creating tax and other incentives to support philanthropy in healthcare and should be promoted to all levels of government. Better understanding of the impact of philanthropy and its variability on the healthcare system should be further studied.
- d. *Continue to build capacity in multi-disciplinary organizations focused on assessing capital expenditures and vetting returns on invested capital.* Organizations such as the Ontario Health Technology Advisory Committee (OHTAC), the Canadian Agency for Drugs and Technologies in Health (CADTH) and other activities that provide evidence on the effectiveness and cost-effectiveness of different capital investments are models that should be further explored for healthcare capital evaluation.
- e. *Expand the use of hospital funding models such as patient- based payment that can reward quality and efficiency gains achieved through capital investment.* These systems can provide the opportunity for management to develop revenue streams that will appeal to investors more than historically-based global budgets.
- f. *Create pilot projects in social finance that link financing to hospital and other healthcare organizations for improvements in quality to corresponding reductions in waste and improvements in financial position through capital investment.* These projects (i.e. funds) should be careful not to substitute for philanthropy but rather should augment it.

Finally, policy-makers and decision-makers should ensure a strong research and communications infrastructure around capital investments. Without stronger evaluation of capital investments and research into the determinants of strong capital investment, understanding of capital investment is unlikely to progress. Likewise, the explicit goal for innovations in capital should be to raise or maintain quality while reducing overall costs; it does not require privatization. Policy-makers and researchers should:

- a. *Endorse the importance of increased capital investment that is more effective and value-driven at federal, provincial, and regional levels.* Evidence suggests that quality and performance overall improves with better availability of capital. Certain capital expenditures may be better managed outside of government while others may benefit from increased control and rigorous evaluation. Further research, grounded in modeling and quantitative analysis, should carefully evaluate the merits of different approaches in different situations.
- b. *Identify and support the managerial capacity and cultural changes in the healthcare system necessary to manage new financing vehicles effectively and realize improvements in efficiency that can be provided by access to capital.* This includes better training of managers and leaders in project finance and a cultural shift in the way managers vet capital investments. .
- c. *Require rigorous evaluation and public disclosure of all capital projects including “own funds” capital projects financed through philanthropy or other “in kind” contributions.* Hospitals and other healthcare institutions in Canada generally face a requirement to provide to the Minister of Health data on their activities.

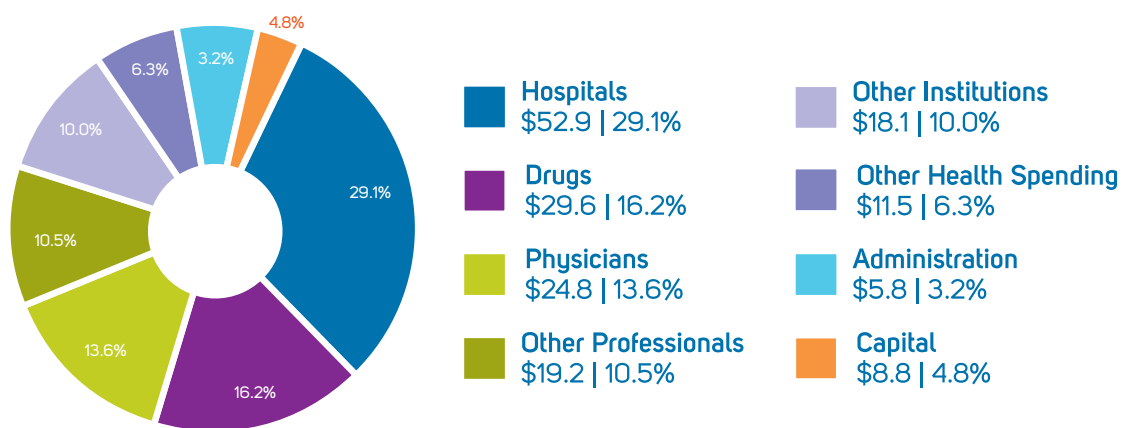
In the near term, policy-makers and other decision-makers should focus on ensuring that current capital investments are appropriate and match needs, are as efficient as possible, employ the best and latest innovations in capital finance structures and that the available pool of capital is expanded first through unlocking of capital already in the system before allocating new dollars.

## INTRODUCTION

Capital represents the total pool of funds expended by a firm, organization, or government to build, acquire, or upgrade physical assets such as property, buildings, technology or equipment, whether raised through debt or equity. In healthcare, capital is required to build new hospitals or long-term care facilities, purchase new technologies such as MRI machines, or upgrade existing equipment such as laboratory platforms. Capital expenditures in the healthcare system can range in size from only a few thousand dollars to hundreds of millions of dollars. Capital expenditures can also range in complexity, from simple debt-based investments in a single institution through to multi-institution investments with public and private partners, covering multiple years, geographies, and financing structures. Unlike operating funds that come almost exclusively from government in Canada, sources of capital are varied and often include a substantial gift or contribution from corporations, foundations, or individuals (philanthropy). Capital is an essential tool to maintain and grow our healthcare system, to realize efficiencies and improve quality, and to meet the needs of our aging Canadian population. Not surprisingly, it represents the fastest growing component of health system spending. However, the true capital needs of our healthcare system are not well understood and there is a paucity of literature on how best to manage capital acquisition and expenditure in healthcare. Current methods for allocating capital and for managing capital may contribute to inequity and inefficiency. Here, we present an overview of the importance and role of capital in the Canadian healthcare system and provide a series of recommendations to improve its management and allocation.

Canada currently spends \$8.8 billion on healthcare capital annually<sup>4</sup>. This is relatively small compared to other spending categories such as drugs, hospital operations, and physicians. Figure 1 shows that operating spending on professionals (e.g. doctors), institutions such as hospitals, and drugs accounts for the majority (88.8%) of healthcare spending while spending on capital – construction, machinery, equipment, and some software – accounts for only 4.8%. This may be somewhat underestimated due to limited data on smaller capital expenditures in institutions and those done in the private sector.

**Figure 1. Canada spends \$8.8b on healthcare capital annually, 2009**



(Source: Canadian Institute for Health Information, 2011)

4 Canadian Institute for Health Information, National Health Expenditure Trends, 1975 to 2011, November 2011. CIHI data are based on the Statistics Canada Capital and Repair Expenditures Survey, which looks at expenditures on capital by industry sector.

However, healthcare spending on capital has risen more quickly than operating spending. The compound annual growth rate (CAGR) – the year over year growth rate – between 1975 and 1998 for healthcare capital was 6.5% (5.3% per capita accounting for population growth over the time period)<sup>5</sup>. This rate increased dramatically to 12.9% (11.8% per capita) between 1998 and 2009. (Statistics Canada, Capital and Repair Expenditures Survey) This was about 60% higher than the second fastest growing category of drugs at 8.0% and double that for hospitals (6.8%), which remains the single largest locus of healthcare expenditure in Canada.<sup>1</sup> Table 1 below shows the growth in capital spending. This growth – and the striking difference between capital growth and operating growth – has been consistent across provinces with the exception of Saskatchewan where growth in capital was half that of operating. It should be noted that at least part of this growth is due to much lower levels of capital expenditure in the decades before.

**Table 1. Province by province comparison of the contribution of capital spending to healthcare spending growth (in \$M)**

		1998	2009	CAGR
Ont	Capital	\$782.2	\$3,524.6	14.7%
	Total	\$33,125.6	\$71,810.7	7.3%
Que	Capital	\$670.0	\$1,871.9	9.8%
	Total	\$19,173.8	\$38,190.6	6.5%
BC	Capital	\$228.1	\$1,172.5	16.0%
	Total	\$11,414.3	\$22,971.5	6.6%
Alta	Capital	\$220.5	\$1,124.6	16.0%
	Total	\$7,619.8	\$21,518.8	9.9%
Sask	Capital	\$148.5	\$208.2	3.1%
	Total	\$2,778.2	\$5,818.3	7.0%
NS	Capital	\$33.7	\$211.9	18.2%
	Total	\$2,552.9	\$5,332.3	6.9%
Man	Capital	\$88.3	\$285.6	11.3%
	Total	\$3,286.3	\$7,314.0	7.5%
Nfld	Capital	\$57.8	\$134.6	8.0%

5 Canadian Institute for Health Information, National Health Expenditure Trends, 1975 to 2011, November 2011. CIHI data are based on the Statistics Canada Capital and Repair Expenditures Survey, which looks at expenditures on capital by industry sector.

		1998	2009	CAGR
	Total	\$1,433.4	\$3,000.4	6.9%
NB	Capital	\$45.1	\$142.5	11.0%
	Total	\$1,924.2	\$4,302.3	7.6%
PEI	Capital	\$9.5	\$42.4	14.6%
	Total	\$361.4	\$779.2	7.2%
NWT	Capital	\$14.6	\$23.6	4.5%
	Total	\$309.9	\$431.8	3.1%
Nun	Capital	NA	\$5.3	NA
	Total	NA	\$364.7	NA
YT	Capital	\$3.2	\$14.2	14.5%
	Total	\$104.1	\$278.1	9.3%
Can	Capital	\$2,301.5	\$8,761.9	12.9%
	Total	\$84,083.9	\$182,112.7	7.3%

(Source: Canadian Institute for Health Information, National Health Expenditure Database)

The growth in capital expenditures can in part be attributable to the growth in construction costs over the same period of time. Regional differences including capital expenditure growth rates of 16% in Alberta and British Columbia may be accounted for by differences in rates of population growth and wealth creation following the boom in natural resources in Western Canada as well as differences in practice patterns and the age of the capital stock. Over the last five years, overall non-residential construction costs have grown by similarly large numbers<sup>6</sup>. However, the growth in capital expenditure is also due to the growth in high-cost high-technology use in healthcare and in facilities construction<sup>7</sup>. Although both these factors will continue to drive increased need for capital, they each may require different approaches to improving the value derived from such investments.

6 Statistics Canada. Apartment Building Construction Price Indexes (2011) accessed 29 September 2011 at <http://www40.statcan.ca/101/cst01/econ144a-eng.htm>

7 Morgan S, Cunningham C. Population aging and the determinants of healthcare expenditures: The case of hospital, medical, and pharmaceutical care in British Columbia, 1996 – 2006. *Healthcare Policy*, 2011;7:68-79

Currently, access to capital is largely controlled by provincial governments, with approximately 80% of capital spending in healthcare publicly-financed<sup>8</sup>. This is largely accounted for by hospital physical plant, but also includes long-term care homes, information technology infrastructure, imaging and other diagnostic equipment and a range of other items. However, capital tends to be allocated on a sector-by-sector basis with the focus of investments being on places with beds (hospitals and long-term care homes). Governments manage capital through a variety of mechanisms, by directly approving capital projects, mandating planning guidelines for construction, and by controlling operating funding flows. Historically, government policy on healthcare capital, to the extent that it exists, has tended to alternate between controls and expansion. There are inherent advantages in government planning of capital; chief among these is the ability of most governments to borrow cheaply because of relatively low interest rates and relatively high credit ratings. Theoretically, government planning should also lead to greater equity in capital distribution based on value. However, important limitations exist as well including rigidity due to government planning cycles, challenges in understanding market dynamics and local need in central bureaucracies, and variability in political priorities and agendas that can affect capital decision-making.

Nonetheless, in Canada new capital investment in healthcare still comes predominantly from government grants that are linked to specific capital projects. Some institutions may allocate a portion of their operating margin to capital upgrades or new investments. Philanthropy increasingly also has an important role to play. In 2011, Canadians contributed \$1.355 billion to Canadian healthcare institutions through giving; a 12.5% increase over the previous year<sup>9</sup>. Despite substantial growth in philanthropy, it is a fragile source of capital because it is subject to economic cyclicity and variability in donor interests and priorities.

In light of the current difficult economic conditions in some provinces and growing healthcare demands, attempts should be made to calculate the required amount of capital and to broaden access to capital through a variety of mechanisms in order to establish a large enough capital pool to service the healthcare needs of Canadians now and into the future. Attempts should also be made to ensure equitable division of capital – a formidable task that requires an understanding of the value of current healthcare capital and the relative needs of a diverse population. Also, the impact of capital spending on operating spending needs to be more clearly understood with a need to focus on those investments that improve the efficiency and value of the care delivered in the system overall.

Just as the innovation agenda has become important in other aspects of healthcare, there are potential avenues for innovation in healthcare capital. Aside from the new template approach to design-build-finance-maintain (DBFM) public-private partnerships (P3), there is still little else that can be considered standard, let alone innovative or even best practice. P3 themselves come in different forms and emerging models from other countries have the potential to add to the diversity of models. Alberta has proposed a P3 “alternative funding model” for its recently announced \$1.2B new cancer center in Calgary<sup>10</sup>. [REF] However, other novel approaches, like the corporate bond issue at the Toronto Hospital in the late 1990s to finance the construction of a new wing appeared promising but

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8 Canadian Institute for Health Information, National Health Expenditure Trends, 1975 to 2011, November 2011. CIHI data are based on the Statistics Canada Capital and Repair Expenditures Survey, which looks at expenditures on capital by industry sector.

9 Association for Healthcare Philanthropy, <http://www.ahp.org/publicationandtools/News/Releases/2012NewsReleases/Pages/10032012.aspx>.

10 Calgarians Bust a Move to Raise Money for New Cancer Research. CBC. March 3, 2013.

did not gain widespread adoption<sup>11</sup>, while new developments in social finance in other parts of the world like the UK remain largely unimplemented in Canada. There is also limited ability within the Canadian healthcare system to evaluate and manage capital structure, return models and project finance in a sophisticated way that would mirror other large capital intensive private industries or infrastructure investments. For such an evolution to happen, several important hurdles would have to be overcome.

Such a shift in our approach to capital would start first with the recognition that capital investment is a critical element of health system planning, as many of the current issues in healthcare today, such as timely access, quality and operating cost, are directly impacted by capital expenditure decisions. Second, more thoughtful consideration should be given to capital financing methods and their roles in improving return on investment and the efficiency of the investment process. There are measurable aspects (e.g. return on invested capital, health outcomes), non-tangible benefits (patient satisfaction), measurable costs (e.g. total expenditure, weighted average cost of capital), and less tangible costs (e.g. opportunity cost of dollars not spent in other areas such as education or other buckets of healthcare). Various methods of capital financing are available (debt, equity, government, philanthropy, P3, social finance, etc.); however, each method has its pros and cons, different sets of incentives, and should therefore be considered within the context of a structured framework. Third, a better understanding of our current capital stock is required including assets sometimes looked over including equipment and its associated utilization. Finally, as capital decisions by governments working with finite resources often involve tough choices, (e.g. to expand a hospital in one community versus another) it is important to ensure that they are soundly based on needs, principles of equity, and informed by evidence. This includes a greater emphasis on research and evaluation, and effective communication to the public and broader stakeholder community about the costs and benefits of different options as they become clearer.

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11 Toronto General Hospital's (now part of the University Health Network) \$281 million issue of a 25-year Canadian hospital bond - Due to its desire to proceed quickly with its redevelopment project and the uncertainty surrounding the ability to obtain government financing at the time, the Toronto General Hospital was able to release itself from standard procurement methods and issue a bond at a rate of 5.64%, a relatively small increment over Ontario bonds sold to private, largely institutional investors. Rated Double A, investors were given priority access to Toronto General's first funds, ahead of staff salaries, and a security interest in the hospital's buildings and other property but not the money in its charitable foundations. Still, government did not explicitly guarantee the debenture. Today, bond payments continue to be made on an ongoing basis using surpluses generated in the hospital's operating budget. Hence, operational and capital spending decisions are impacted by debt service and accounting related to the bond. This places a significant amount of responsibility on the organization and management team to maintain an efficient operation over the term of the bond and increases scrutiny on hospital management's financial performance beyond just government because of interested and sophisticated institutional bond-holders. Bond rating agencies, which rate the hospital each year, further increase the requirement for operational discipline.

## THE IMPORTANCE OF CAPITAL SPENDING IN HEALTHCARE

The importance of healthcare capital is underscored by a need to expand capacity to meet current and future population requirements, replace old physical plants, and equip clinicians with the tools and technologies they need to provide high quality and efficient healthcare across the continuum from prevention to palliation. Yet, when it comes to the why, what, where and how of capital spending, our understanding is underdeveloped. Issues such as: (i) what is the appropriate approach to determine capital requirements, (ii) where across Canadian communities should investments be made, (iii) how financing and procurement should be conducted and (iv) when, why, how and if to involve the private sector, are all important questions that continue to challenge the system's ability to get the infrastructure in place so that it can get on with the task of delivering healthcare.

In 2011, the C.D. Howe Institute released a report by Dodge and Dion noting that Canadians suffered from a “chronic healthcare spending disease.”<sup>12</sup> This report along with reports by the Organization for Economic Cooperation and Development<sup>13</sup>, the Conference Board of Canada<sup>14</sup>, and TD Economics<sup>15</sup> emphasize concerns over the sustainability of healthcare expenditure levels in Canada. They also raise the prospect that healthcare spending would soon crowd out other lines of social spending and that the marginal value of increasing healthcare spending is unclear at best.<sup>16</sup> At the same time, there are continuing concerns over the timeliness and, more generally, the quality of care provided that re-enforce such concerns over sustainability<sup>17</sup>. These documents and other policy papers<sup>18</sup> suggest a range of prescriptions that broadly fall into two camps: (i) some form of cost shifting like greater private financing or user fees or a (ii) greater focus on improving quality and thereby reducing waste and controlling spending.

Regardless of the prescription, these reports largely focus on operating spending: simply put, the money paid to people who work in healthcare and associated overhead costs, and the spending on drugs, devices, and other supplies that are used each day in treating patients. This is understandable given that spending on operating costs accounts for the overwhelming majority of spending in our healthcare system. However, in the absence of adequate consideration in the healthcare sustainability discourse, capital's important role in enabling quality and efficiency improvements are not well understood or articulated and might as a result put it at risk in cost-cutting efforts. This was evident during the restraint era of the early 1990s, when capital spending experienced much deeper declines than overall health spending. Incidentally, this might have also contributed to its much steeper rise in the subsequent catch up period (see Figure 2 below). Capital spending can have the potential to help control overall spending and improve the value of operating spending and of the quality and cost care delivered but it may also have opposite effects if poorly thought out.

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12 Dodge D and Dion R. *Chronic Healthcare Spending Disease: Diagnosis and Prognosis*. Toronto: C.D. Howe Institute, 2011.

13 Organization for Economic Cooperation and Development. *OECD Economic Surveys: Canada 2010*. Paris: OECD, 2010.

14 Conference Board of Canada. *How Canada Performs: Health Spending Rankings*. Ottawa: Conference Board of Canada, 2011.

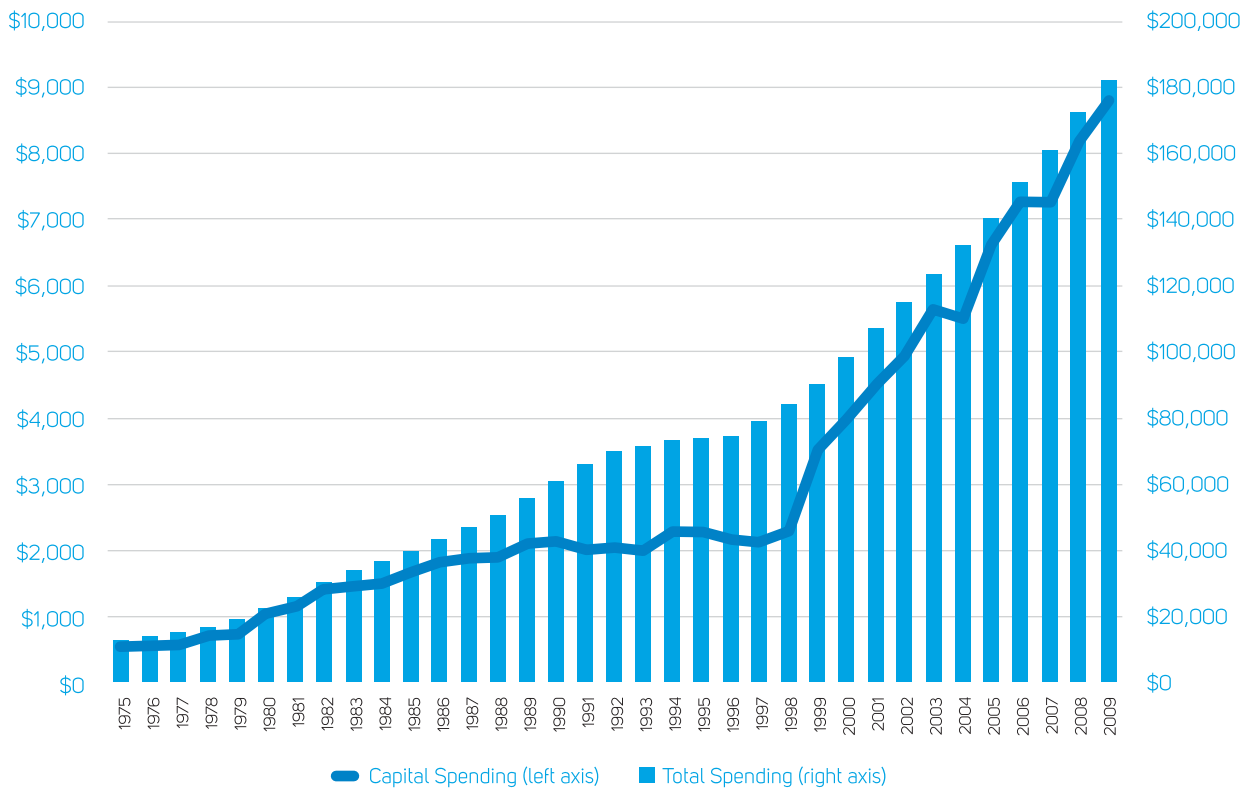
15 Drummond, Toronto: TD Economics, 2010.

16 Duncan D. *Turning the Corner to a Better Tomorrow*. 2011 Ontario Budget. Budget Papers. Toronto: Government of Ontario, 2010.

17 Soroka SN. *A Report to the Health Council of Canada: Canadian Perceptions of the Healthcare System*. Ottawa: Health Council of Canada, 2007

18 See for example: Soroka SN, Mahon AN. *Better Value: An analysis of the impact of current healthcare system funding and financing models and the value of health and healthcare in Canada*. Ottawa: Canadian Health Services Research Foundation, 2012. 33pp.

**Figure 2. Restraint during 1990s much more pronounced on capital spending (in \$M)**



(Source: Canadian Institute for Health Information, 2010)

## THE ROLE OF CAPITAL IN HEALTHCARE IMPROVEMENT

Although definitions of what constitutes capital vary across provinces, we are interested in this paper in large investments in construction of hospitals and other facilities, investment in diagnostic and treatment technologies, and information technology platforms. These sorts of capital expenditures are critical to efforts to improve healthcare quality and efficiency. Capital, or the investment of “funds to maximize the efficiency and value of the enterprise,”<sup>19</sup> is associated with a range of measures of improvement and performance in healthcare. A 2003 report on capital investment in hospitals from the Ontario Hospital Association noted that “Capital investment contributes to improved patient outcomes, helps meet the high demand for healthcare services, improves working conditions, addresses human resource shortages, improves efficiencies, and supports innovation, research and development.”<sup>20</sup>

Although this argument may seem common-sense, there has also been empirical validation of many of these arguments in favour of capital investment. A largely US based set of literature<sup>21</sup> suggests that hospitals with greater availability of financial resources to spend on care are associated with hospitals’ increased likelihood of making capital investments and adopting innovations leading to

19 Gapenski LC, Pink GH. Understanding Healthcare Financial Management. Sixth Edition. Chicago: Health Administration Press, 2010.

20 Ontario Hospital Association. Capital Planning and Investment in Ontario’s Hospitals: A Sustainable and Comprehensive Approach to Meeting Patient Care Needs. 2003.

21 We are grateful to Guillermo Sandoval (University of Toronto) for assistance with this portion of the analysis.

some improvements in hospital performance.<sup>22</sup> This relationship may also be self re-enforcing; non-financial measures of performance including quality of care indicators like re-admission rates and nosocomial infection rates may be highly associated with financial performance overall and with credit-worthiness.<sup>23</sup> In one Canadian study, higher than expected total spending was related to better patient satisfaction<sup>24</sup> but the relationship between capital and performance noted in US studies<sup>25</sup> lacks any serious study in Canada. From a more practical perspective, in a 2005 study, improvement efforts included in Ontario hospitals' strategies generally required capital investment.<sup>26</sup> This means it may be difficult for hospitals that have plans to invest in, for example, computerized physician order entry to reduce errors, new single occupancy rooms to reduce spread of infection, or other potentially quality and efficiency improving investments to do so without a clear source of capital. At the same time, operational financing is moving in many jurisdictions to patient-based models where care is reimbursed on a volume and acuity basis, and increasingly, on an episodic basis where the costs of care in different settings for the same patient are bundled together. Capital allocation mechanisms do not yet match this cross-sectoral approach to operating funding.

### **The appropriate level and equitable distribution of healthcare capital expenditure**

The question of whether capital investment is appropriate and matches needs for capital is also important to any consideration of how well capital is managed in the healthcare system. There has been little estimation of the overall need for capital in healthcare in Canada, although virtually all professional associations and advocacy groups note a need for greater investment in healthcare in general. Nevertheless, these groups are nearly all subject to claims of bias in their desire for increased healthcare capital investment as potential beneficiaries of increased spending. Only one study to date has assessed

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- 22 Rye CB, Kimberly JR. The adoption of innovations by provider organizations in healthcare. *Medical Care Research and Review*. 2007;64(3):235-278; Nystrom PC, Ramamurthy K, Wilson AL. Organizational context, climate, and innovativeness: Adoption of imaging technology. *Journal of Engineering and Technology Management*. 2002;19:221-247; Walston SL, Kimberly JR, Burns LR. Institutional and economic influences on the adoption and extensiveness of managerial innovation in hospitals: The case of reengineering. *Medical Care Research and Review*. 2001;58(2):194-228; Subramanian A, Nilakanta S. Organizational innovativeness: Exploring the relationship between organizational determinants of innovation, types of innovations, and measures of organizational performance. *Omega*. 1996;24(6):631-647; Teplensky, J.D., M.V. Pauly, J.R. Kimberly, A.L. Hillman, and J.S. Schwartz. Hospital adoption of medical technology: An empirical test of alternative models. *Health Services Research*. 1995;30(3):437-465; Rosner MM. Economic determinants of organizational innovation. *Administrative Science Quarterly*. 1968;12:614-625; Encinosa WE, Bernard DM. Hospital Finances and Patient Outcomes. *Inquiry*. 2005;41(1):60-72; Langland-Orban B, Gapenski LC, Vogel WB. Differences in characteristics of hospitals with sustained high and sustained low profitability. *Hospital & Health Services Administration*. 1996;41(3):385-399; Shortell SM, Zimmerman JE, Rousseau DM, Gillies RR, Wagner DP, Draper EA, Knaus WA, Duffy J. The performance of intensive care units: does good management make a difference? *Medical Care*. 1994;32(5):508-525; Levitt SW. Quality of Care and Investment in Property, Plant, and Equipment in Hospitals. *Health Services Research*. 1994;28(6):713-727; Duffy SQ, Friedman B. Hospital with chronic financial losses: what came next?. *Health Affairs*. 1993;12(2):151-163; Cleverley WO, Harvey RK. Is there a link between hospital profit and quality? *Healthcare Financial Management*. 1992;46(9):40-45.
- 23 Watkins AL. Hospital financial ratio classification patterns revisited: Upon considering nonfinancial information. *Journal of Accounting and Public Policy*, 2000;19:73-95.
- 24 Pink GH, Murray MA, McKillop I. Hospital efficiency and patient satisfaction. *Health Services Management Research*, 2003;16:24-38.
- 25 Encinosa WE, Bernard DM. Hospital Finances and Patient Outcomes. *Inquiry*. 2005;41(1):60-72.
- 26 Brown AD, Alikhan LM, Seeman, NL. Crossing the Strategic Synapse. Aligning Hospital Strategy with Shared System Priorities in Ontario, Canada. *Healthcare Management Review*, 2006;3:34-44

the capital requirements at a jurisdictional level. A 2003 Ontario Hospital Association study – conducted in the middle of the most recent increase in capital spending – projected that Ontario hospitals with capital plans would require close to \$8.4 billion over a three-year period compared to a projected annual capital spend by the provincial government of \$400 million (1.2b over the three years).<sup>27</sup> A more recent report from Nova Scotia suggests similar per capita levels of under-funding.<sup>28</sup>

This apparent under-investment in capital has been acknowledged by governments at regular intervals. At the provincial level, the large capital investments that formed part of the Health Services Restructuring Commission recommendations or the establishment of eHealth Ontario as a strategic investor in healthcare information technology, provide two examples of historical large commitments in Ontario. Federal examples of the same phenomenon include the \$1B Medical Equipment Fund announced in 2000 or the establishment and continued funding of Canada Health Infoway to provide leveraged (ie matched) capital for eHealth investments. However, reviews in Canada and elsewhere of major public healthcare capital spending have underlined the challenges such as the lack of adequate capacity for appropriate modeling and valuation to be able to plan appropriately for healthcare capital requirements<sup>29,30</sup> with reports documenting problems in the process by which the need for capital and matching investments against this need are made.<sup>31</sup>

In a recent nine country review of capacity planning that drives capital spending decisions, substantial differences were found in the way that capital needs are identified and approved within and across provinces in Canada.<sup>32</sup> In all Canadian provinces, and all but one country (Netherlands) included in this review, ultimate approval of capital investment and the majority of capital funding rests with the provincial and territorial governments. This may reduce the efficiency and timeliness of capital planning and reduce the acceptability of healthcare capital decisions when these decisions appear to be influenced by political concerns. Indeed, as Senator Kirby pointed out in the 2002 report of the Standing Senate Committee on Social Affairs, Science and Technology, “Witnesses told the Committee repeatedly that there is a need to depoliticize hospital financing.”<sup>33</sup> Without a systematic understanding of the need for capital, including the gap between capacity and demand for health services and the age and level of utilization of current infrastructure among different communities, important factors required for project prioritization and selection may be ignored or given less priority than needed to lead to efficient allocations of capital.

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27 Ontario Hospital Association. Capital Planning and Investment in Ontario’s Hospitals: A Sustainable and Comprehensive Approach to Meeting Patient Care Needs. 2003.

28 Auditor General of Nova Scotia. Report of the Auditor General 2012. Government of Nova Scotia. Accessed at [www.oag-nb.ca/nov2012/fullrept.pdf](http://www.oag-nb.ca/nov2012/fullrept.pdf) 17 January 2013

29 Gaffney D, Pollock AM, Price D, Shaoul J. NHS capital expenditure and the private finance initiative – expansion or contraction. *BMJ*, 1999;319:48.

30 Decter M. Health Capital Planning Review. Ottawa: The Canadian Council for public-Private Partnerships, 2004

31 Ontario Hospital Association. Capital Planning and Investment in Ontario’s Hospitals: A Sustainable and Comprehensive Approach to Meeting Patient Care Needs. 2003.

32 Ettelt S, Nolte E, Thomson S, Mays N, and the International Healthcare Comparisons Network. Policy Brief: Capacity Planning in Healthcare. A Review of the International Experience. London: European Observatory on Health Systems, 2008.

33 The Health of Canadians – The Federal Role, Final Report, Volume Six: Recommendations for Reform, The Standing Senate Committee on Social Affairs, Science and Technology, October 2002.

Moreover, the current organization of capital financing where institutions (e.g. hospitals or regional health authorities) and communities – through municipal contributions and philanthropic donations – are required to provide a portion of the capital needed for investment may actually re-enforce existing inequity within our publicly-financed system where decisions about capital investment have played out against a political context and demographic shifts. For example, it may be more difficult for institutions in relatively poor communities to raise capital through philanthropy. If government policies fix the necessary proportion of matching funds, the combination of geographic variations in wealth and government policies may lead to relative greater declines in the capital stock of some communities.

Taken together, these pieces of evidence paint a picture of healthcare capital spending as an important but perhaps under-addressed element of financing reforms to improve healthcare sustainability. Healthcare capital spending is on the increase, and rising relatively more quickly than overall healthcare spending. At the same time, spending on capital is an important element of improving the effectiveness of healthcare delivery through improvements in the quality of care. However, the level of spending on capital in healthcare may be lower than necessary and the process for allocating it across organizations may be inefficient and it may re-enforce inequities as larger, more quickly growing, and more affluent communities are able to lever sources of capital ranging from philanthropy to the private sector more effectively. Moreover, if governments are going to encourage financing reform that rewards quality, institutions will need to reconfigure processes and structures to support better quality. Capital investment is one common vehicle that private sector organizations use to achieve these sorts of improvements. Thus, the operating impact of capital spending may be poorly or incompletely addressed in current funding policy and is clearly distinct from changes in how operating funding policy is set. The one exception here is limits on increases in operating funding to run privately donated equipment and programs. This long documented finding<sup>34</sup> has been challenged recently by evidence that hospital CEOs are rewarded for program growth more than efficiency<sup>35</sup> suggesting that a combination of advocacy and philanthropy may be able to increase both capital and operating funding. However valuable this sort of program growth, it is again, without the benefit of a clear plan for capital development. Perhaps most importantly, there is relatively little hard evidence or serious study on the impact of capital spending in healthcare in Canada, although reviews of the process of capital allocation suggest that it is sub-optimal. Given this, the challenge can be one of how to show demonstrable improvements in the effectiveness of healthcare capital spending in Canada, particularly as it relates to improvements in care and operating efficiencies. This may be particularly timely given the global economic and financial crisis that – if past experience is an indication – will substantially increase the pressure on healthcare spending while reducing disproportionately the availability of capital.

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34 Deber, R., et al. Technology acquisition in Canada: control in a regulated market. *International Journal of Technology Assessment in Health Care*, 1988; 42:185-206.

35 Reiter KL, Sandoval GA, Brown AD, Pink GH. CEO compensation and Hospital Financial Performance. *Medical Care Research and Review*, 2009; 66:725-738

## NEW MODELS FOR CAPITAL

### Growth in new models for healthcare capital financing

Across the world, healthcare organizations access capital using a range of different and often surprising vehicles. These include, primarily, institutional bonds (sometimes government guaranteed), matched public-private financing partnerships, financial engineering through other innovative structures (e.g. buy-leasebacks, flow through shares), and external market instruments such as public equity offerings and other securities. In one of the most surprising examples, as the importance of technology and market share to managed care became apparent to US health insurers in the 1990s, a number of not-for-profit insurers stated that they were converting status to for-profit corporations so that they could raise capital through public markets (i.e. as a publicly listed company on the stock exchange). This was founded on the belief that increased efficiencies that would arise through large purchases of information technology and other acquisitions would allow them to increase margins to pay back investors.<sup>36</sup> In fact, the pressure for capital was intense enough in the US healthcare system in the late 1990s, as providers sought to increase efficiencies and market share, that one researcher commented that some organizations were likely reaching the limit of organizational size at which they could effectively raise capital without access to public markets.<sup>37</sup> The US also has an important government component of centralized control of capital expenditures through “certificate of need” processes controlled by state governments as well as municipal-backed bonds guaranteed through the federal Department of Housing and Urban Development. This process leads a situation where this government department both approves new capital development for many hospitals and provides some of the financing that can be leveraged by a combination of bond offerings, private philanthropy, and operating efficiencies.

The UK has taken a somewhat different approach to expanding capacity in their healthcare system. As part of a range of reforms introduced under the Blair government, public and private sector organizations were encouraged to increase capital investments. These reforms included both the certification of NHS hospitals as trusts that had sufficiently strong financial and clinical performance to be allowed to access capital financing through banks and other institutions, the creation of numerous public-private partnership models spanning hospitals and community-based healthcare providers, as well as through a relatively short-lived additional payment to privately financed providers to encourage them to enter the UK health system.<sup>38, 39</sup> The role of Monitor – the body identified to assess the ability of UK hospital foundations ability to access capital – has changed over time. Despite this, the National Accounting Office has suggested that the extensive Private Finance Initiative (PFI) or UK P3 holds promise, while papers by Pollock and colleagues – among others – suggest that PFI added to the cost of capital overall.<sup>40, 41</sup>

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36 Gray BH. Conversions of HMOs and hospitals: What’s at stake? *Health Affairs*, 1997;16:29-47.

37 Robinson J. The dynamics and limits of corporate growth in healthcare. *Health Affairs*, 1996;15:155-169.

38 House of Commons Health Committee. Independent sector treatment centres: fourth report of session 2005-06. Vol. I: Report, together with formal minutes London: The Stationery Office; 2006.

39 Mason A, Street A, Verzulli R. Private sector treatment centres are treating less complex patients than the NHS. *Journal of the Royal Society of Medicine*, 2010;103(8):322–331.

40 Gaffney D, Pollock AM, Price D, Shaoul J. NHS capital expenditure and the private finance initiative – expansion or contraction. *BMJ*, 1999;319:48.

41 Pollock AM, Price D, Liebe M. Private finance initiatives during NHS austerity *BMJ* 2011;342:doi:10.1136/bmj.d324.

**Table 2 below lays out the elements of different existing and innovative approaches to financing healthcare capital from the US, UK, and elsewhere.**

Model	Example	Description	Risk Ownership
Conventional government financed	Majority healthcare facility construction projects prior to 2000	Funded through government tax revenues or government-issued debt	Government
Philanthropy	MRI and CT machines. New clinics and wings of hospitals	Gifts from donors and fundraising efforts through healthcare foundations' campaigns	Healthcare institution
Own fund	Capital improvements in existing infrastructure	Self financing of capital project from healthcare institutions' own reserves/ operating margin	Healthcare institution
Design-build-finance-maintain (DBFM) P3	Many major healthcare facility construction projects after 2000 (e.g. Brampton Civic Hospital)	Integration of multiple phases of a capital project into a single contract that shifts project risks to a private consortium in return for a risk premium	Private consortium
Debt capital (bonds, etc.)	Major IT purchases and facility construction	Debt issued directly by healthcare institutions, technically unsecured by government	Healthcare institution
Equity offerings	Conversion of not-for-profit to for-profit corporations in the US in the 1990s	Equity issued by healthcare institutions	Investors
Financial Engineering	Stronger management of capital and the value chain to (e.g. reagent rental in laboratory); Laboratory and Imaging investments; Real Estate	Models whereby equipment providers bundle cost of capital expenditure in a "per use model" limiting up front capital expenditures. Can also be extended to sale-leaseback arrangements, arrangements where capital is provided in exchange for longterm contracts, etc.	Shared
Social finance	Healthcare innovations in developing nations.	A partnership agreement between government, private investors, and agencies providing social services with social outcomes targets as basis for financial returns	Shared

Canada has had limited exposure to the more innovative models of healthcare capital financing noted above. It is important to explore each of these models and their relative advantages and limitations. It should be also noted that while the capital risk under the various funding models shifts, operating risk in a publicly financed system ultimately falls to government. Hence the need for an improved capital planning process that links in broader system needs and goals if there is to be experimentation with new capital acquisition models that could reduce government's direct controls. The following section reviews some of the information available on models for healthcare capital financing beyond typical government financing.

## Philanthropy

Philanthropy has been and continues to be an increasingly important source of capital financing for healthcare, with many capital projects deriving an important portion of their financing from donations and fundraising. Contributions to Canadian healthcare institutions peaked at \$1.337 billion in 2007 and only returned to this level in 2011.<sup>42</sup> These donations have been facilitated by changes in tax laws over the last decade allowing favorable capital gains treatment of donations of stock including flow-through shares as well as innovations in estate planning through the creation of smaller private foundations.<sup>43</sup> In Ontario, it has been estimated that total fundraising by hospitals towards capital investments grew from an average annual contribution of \$260M in the period between 1998/1999-2003/2004.<sup>44</sup> Today, given growth on overall philanthropy, the level is much higher, with at least two major institutions in Ontario setting annual fundraising goals in excess of \$100M.

Despite the increasing importance and size of fundraising in healthcare, fundraising supports a range of activities beyond capital projects with research being a major recipient of fundraising results. Also, philanthropy tends to favour specific aspects of healthcare (child health, cancer care) potentially at the expense of others that may be as much or more in need of capital such as mental health. Once again, a strong reliance on philanthropy may exacerbate inequities – this time disease - or patient group-related inequities – unless there is some estimate of capital requirements across business lines in healthcare and some flexibility in matching requirements for government investment or policies that can create incentives for areas that benefit from relatively less philanthropy.

Also, as the locus of wealth creation in Canada shifts towards cities, philanthropy has moved with it, creating significant challenges for philanthropic investment in rural communities.<sup>45</sup> This means that institutions in smaller communities may have difficulty raising philanthropic donations. If government matches these local level contributions, geographic equity may be further threatened. Donations to healthcare institutions are also importantly linked to both the health of the overall economy as well as to important wealth drivers behind Canada's wealthiest and most philanthropic families and corporations including real estate, commodities and precious metal resources. Thus, this contributes further to geographic disparities in healthcare capital availability as the wealth balance has changed overtime between provinces. Recessions have had a major negative impact on healthcare giving as seen in Figure 3. In addition, although government does require “own funds” projects to seek Ministry of Health approval, in practice this does not always happen through a consistent application of a rigorous framework for evaluating need or expected return on capital despite the implicit government guarantee to take on the operating spending in many cases that may be driven by the capital investment. Future tax policy changes may further expand the size and pool of available healthcare philanthropy through changes in annual outflow requirements for foundations, changes in tax credits, and other innovations or it may contract as donors interests shift to other areas. Hence, philanthropy, although a critical element in providing much needed healthcare capital, is an area that requires further attention and more rigorous evaluation.

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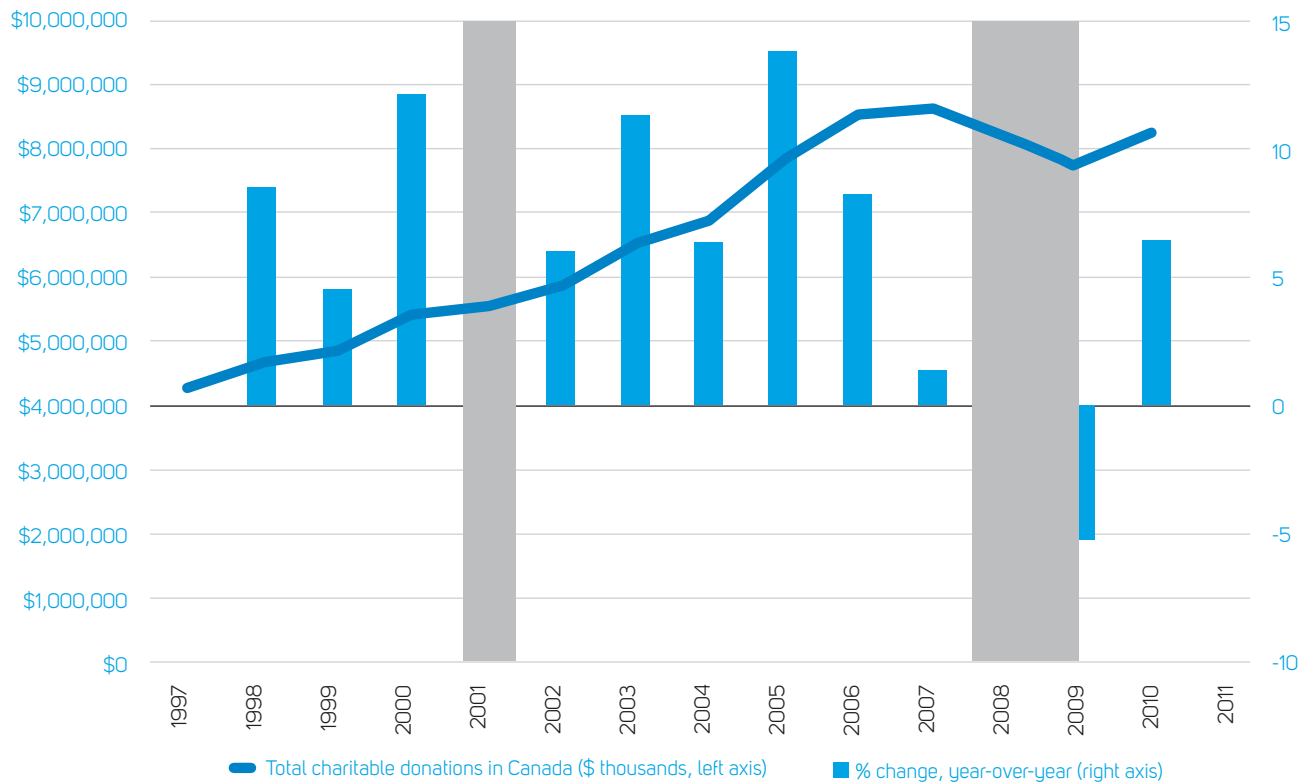
42 FY 2010 Association for Healthcare Philanthropy on Giving Fact Sheet

43 Federal Budget, 2006.

44 Ontario Hospital Association. Capital Planning and Investment in Ontario's Hospitals: A Sustainable and Comprehensive Approach to Meeting Patient Care Needs. 2003.

45 Barr C, McKeown L, Davidman K, McIver D, Lasby D. The Rural Charitable Research Initiative. A Portrait of the Nonprofit and Voluntary Sector in Rural Ontario. Toronto: Canadian Centre for Philanthropy, 2004.

**Figure 3. Impact of Recessions on Healthcare Philanthropy in Canada**



Note: Shading represents North American recessions. Source: Statistics Canada, Haver Analytics

### *Own Fund*

Likewise, if a hospital's operating margin is a major source of the local capital contribution then the overall level of capital may be lower than necessary and regional and institutional variations in financial performance and application of depreciation may further re-enforce inequities and inefficiencies. Poor performers may be further penalized by failing to generate sufficient operating margins to invest in capital improvements to improve efficiency. The 2003 Ontario Hospital Association report noted that hospitals intended to meet 9% of capital needs through working capital and another 17% through fund-raising with 11% of projected capital needs having no identified source for support. If healthcare institutions can only obtain capital financing from government, bank loans, philanthropy, and cash, then depreciation and working capital become critical to capital investment. Over the past decade working capital has tended to fluctuate with the level of increases in hospital funding. This dependence on generating capital through operating margin can further accentuate challenges and inequities in access to capital in healthcare. It is unclear whether group-purchasing decisions for high-cost technology, designed to lower the cost of purchases but which require larger groups of hospitals for creation, ameliorate or worsen these problem. In addition, the model used for hospital financing has the potential to impact on capital as well as management incentives. In Ontario, hospitals are financed predominantly through a global budget allocation. Thus, managing of service volumes and mix of services (e.g. bed closures, service caps) towards a higher margin could increase working capital but could also potentially worsen system performance overall.

Care episode or so called activity-based or patient-based funding models allow for more direct competition on a cost per service basis and could provide a stimulus for efficiency and for the accumulation of capital and its deployment towards further improvements. However, depending on the mechanism used to set price, these systems may erode operating margins that can be contributed to capital by institutions. A review of experience internationally with these funding models does not identify any link between the design of these funding systems and ability of institutions to increase capital. Across Canada, several provinces have announced plans to introduce these sorts of funding systems, but only one jurisdiction (Ontario) has stated explicitly that it will engineer the funding system to encourage quality by creating margins for efficient and high-quality care.

### *Debt Capital*

The establishment of publicly-financed healthcare in Canada and associated pieces of provincial legislation such as Ontario's Public Hospitals Act and Private Hospitals Act<sup>46</sup> sharply limit healthcare organizations' access to different sources of capital outside of government, philanthropy, and loans or lines of credit from banks. Governments generally pay the lowest interest rates on debt, however reviews of hospital financing have shown significant variability in institutions abilities to secure loans and in many cases fair market rates.<sup>47</sup> Likewise, few Canadian healthcare organizations have been able to access bond-type financing mechanisms for capital. Most provinces restrict through legislation or other means institutions' ability to secure debt financing against hospital assets or future cash flows. This makes not-for-profit public sector organizations in Canada distinct from those in the US, the UK, and other jurisdictions where more permissive legislative and policy regimes allow at least some hospitals and similar organizations to obtain debt financing through bonds and similar vehicles. There are, however, two exceptions in Canada.

One past example of a potentially successful debt issue is the Toronto General Hospital's (now part of the University Health Network) \$281 million issue of a 25-year Canadian hospital bond. Due to its desire to proceed quickly with its redevelopment project and the uncertainty surrounding the ability to obtain government financing at the time, the Toronto General Hospital was able to release itself from standard procurement methods and issue a bond at a rate of 5.64%, a relatively small increment over Ontario bonds sold to private, largely institutional investors. Rated Double A, investors were given priority access to Toronto General's first funds, ahead of staff salaries, and a security interest in the hospital's buildings and other property but not the money in its charitable foundations. Still, government did not explicitly guarantee the debenture. Today, bond payments continue to be made on an ongoing basis using surpluses generated in the hospital's operating budget. Hence, operational and capital spending decisions are impacted by debt service and accounting related to the bond. This places a significant amount of responsibility on the organization and management team to maintain an efficient operation over the term of the bond and increases scrutiny on hospital management's financial performance beyond just government because of interested and sophisticated institutional bond-holders. Bond rating agencies, which rate the hospital each year, further increase the requirement for operational discipline.

Although the bonds were not guaranteed by the Ontario Government or any of its agencies, implicit in the appeal of the bond issue may have been the assumption that the government would not have allowed the hospital to go bankrupt, raising the question of whether such issues truly constitute a transfer of risk for the government to the hospital. The consolidation of the MUSH (Municipalities, Universities, Schools, and Hospitals) sector onto provincial government financial statements means that these bonds

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46 Ontario. Private Hospitals Act R.S.O 1990, Chapter P.24 and Public Hospitals Act R.S.O 1990, Chapter P.40.

47 Unpublished analysis , Hospital Report Project, 2004.

at best provide a more effective method of managing risk instead of a true transfer of risk. Recently, a similar offering was undertaken in Quebec by CHUM-St. Justine, utilizing a bond to finance the construction of a new Children's Hospital. The offering was taken up well by the financial community. Other organizations, such as the Hospital for Sick Children in Toronto with a recent \$200M offering, have had more mixed recent results with bond issues. Nevertheless, smaller institutions likely lack the financial sophistication to appropriately design, price and evaluate this option for raising capital, and thus there are few other examples in smaller institutions. Consortia that link smaller hospitals or other pooling mechanisms may provide an option to increase the availability of bond offers to these groups but it is unclear whether they would be attractive to investors or manageable.

### *Public-Private Partnerships (DBFM)*

In contrast, there is substantially greater Canadian experience with public-private partnerships. Public-private partnerships (P3) of the *design-build-finance-maintain* (DBFM) variety were initially a controversial but now increasingly common form of financing major infrastructure investments in Canada and elsewhere where private financing and some degree of both output-based contracting and private sector oversight of the project are combined with government and broader public sector capital provision. In Canada, these projects typically involve public ownership of the asset, where in the UK and elsewhere they have often resulted in public leaseback of privately owned and managed facilities. To date there have been more than 100 P3 deals in Canada since 1990.<sup>48</sup>

There are a number of value-for-money reviews of later Canadian P3 projects that generally state that when risk is appropriately priced, P3s in healthcare tend to produce lower overall project costs and some marginal advantage in time to completion of the project.<sup>49</sup> These savings are generally small compared to the overall budget of the project (e.g. less than \$10 million) but the rigour that is brought to investment planning in these second wave of P3 projects may provide benefits beyond the total savings. It is noteworthy that none of the Canadian evaluations take as long a view as both the positive and negative evaluations from the UK references noted above. In contrast, the experience is more mixed. The National Audit Office in the UK is positive about the advantages of P3 type partnerships. Peer reviewed studies, in contrast, take a longer view and tend to point to economic rent inherent in P3 type partnerships that has no public value beyond the provision of needed capital or potentially more effective management of facilities.

In the current fiscal environment, governments may be attracted to P3 projects as they appear to offer faster completion of capital projects & lower running costs; but they also can mean paying higher costs of capital compared to government financed projects and thus entail long-term commitments where the promised lower running costs prove to be illusory. Thus, it is difficult to conclude whether P3 projects have created value within the healthcare system in Canada. Without further evaluation that would include audit, it is difficult to establish the value of Canadian P3s.

Table 3 provides an overview of the performance of P3 projects summarized from a Conference Board of Canada report that show – for those P3 projects where data is readily available – that P3s tend to produce at least initial benefits.

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48 Conference Board of Canada. *Dispelling the Myths: A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments*. Ottawa: Conference Board of Canada, 2010.

49 Conference Board of Canada. *Dispelling the Myths: A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments*. Ottawa: Conference Board of Canada, 2010.

**Table 3: Summary of second-wave P3 projects in Canada<sup>50</sup>**

Key Factors	Evidence from Canadian P3s since 2004
Cost Savings	Canadian P3s initiated from 2004 onwards have so far delivered efficiency gains ranging from a few million dollars to \$750M per project
Time Performance	Based on the 19 projects that had reached substantial completion at the time of the study, 17 were delivered early or according to schedule
Life Cycle Benefits	Too early to assess given the typical long timeframe of the operation/maintenance phase
Cost of Financing/ Transaction/ Risk Premium	These costs are typically higher than in conventional methods; however, they also contribute to a greater level of project diligence and transparency

### *Equity Offerings*

On the private side of Canadian healthcare, there have been increasing number of examples of attempts to innovate through the use of public equity markets. Canada has a long history of large publically-listed for-profit healthcare corporations playing an important role in the delivery of public healthcare. These include examples in laboratory diagnostics (e.g. MDS), medical imaging (CML), as well as facilities management and support. Although healthcare companies represent less than 1% of the market capitalization of the TMX, over the last few years there have been examples of innovation in healthcare capital financing including the formation of Real Estate Investment Trusts of long-term care facilities (Leisureworld), public offerings to raise capital for healthcare services and capital investments (Centric Health), and increasing albeit still relatively small scale involvement of Canada's internationally respected private equity industry (Onex Corporation, Calisto Capital, Imperial Capital) and pension funds (OMERS Capital, Canada Pension Plan, Ontario Teachers Pension Plan). Still, the opportunity to utilize these forms of capital investment and to link them to publically-delivered healthcare is underdeveloped in comparison to other jurisdictions.

From a capital markets perspective, investing in the Canadian healthcare space is fairly limited despite strong investor appetite. Using the major financial exchanges as a proxy, there is a substantial gap between Canadian and US investment opportunities. There are only 53 publicly-listed healthcare companies currently trading on the S&P/TSX. The majority (47%) of these 53 companies are focused on the biotechnology subsector, with a minority targeting pharmaceutical, healthcare equipment and the life sciences tools and services subsectors. Of these 53 companies, only five have market capitalizations over \$500 mm, with only one having a market capitalization larger than \$1 billion. Investors interested in the Canadian healthcare sector therefore have limited options to pursue given that the majority of these companies may not have critical size and scale to attract broad investment. There is also a substantially narrower focus to the publicly-listed healthcare industry in Canada compared to the US, limiting investor options. (Table 4) Under current regulations, it would be almost impossible for the publicly owned component of the healthcare system to access this source of capital but it is likely to remain a major source of capital for for-profit providers who work across the healthcare system. These providers, many of who receive public funds for services provided, may benefit from more aggressive development of capital markets in healthcare in Canada.

50 Summarized from: Conference Board of Canada. *Dispelling the Myths: A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments*. Ottawa: Conference Board of Canada, 2010.

Communication with for-profit CEOs in other sectors such as long-term care<sup>51</sup> – along with a recent spate of private equity investments in this sector (e.g. Closing the Gap Healthcare Group, Spectrum Health) suggest that private investors have identified potential for increased efficiencies or growth in this sector. It is unclear whether these trends in long-term care are relevant to other sectors or whether private equity would see potential improvements in performance in other sectors.

**Table 4. Average and total market value of publicly listed healthcare companies by subsector**

Industry Subsector	Average Market Cap			Total Market Value (US \$ mm)		
	TSX <sup>(1)</sup>	NASDAQ	NYSE	TSX	NASDAQ	NYSE
Biotechnology	\$78.9	\$1,617.1	\$3,031.9	\$1,973.3	\$231,239.4	\$15,159.7
Diversified Support Services	\$0.0	\$1,128.6	\$0.0	\$0.0	\$1,128.6	\$0.0
Health Care Distributors	\$83.7	\$2,582.6	\$1,129.7	\$83.7	\$10,330.3	\$2,259.5
Health Care Equipment	\$67.7	\$725.3	\$8,371.2	\$474.2	\$50,767.9	\$175,795.0
Health Care Facilities	\$246.7	\$454.6	\$1,498.8	\$740.0	\$3,636.7	\$25,479.7
Health Care Services	\$290.7	\$1,246.0	\$5,827.4	\$872.0	\$31,150.3	\$46,619.1
Health Care Supplies	\$0.0	\$473.1	\$2,075.9	\$0.0	\$12,772.8	\$8,303.5
Health Care Technology	\$0.0	\$334.0	\$0.0	\$0.0	\$1,002.1	\$0.0
Industrial Machinery	\$30.4	\$0.0	\$0.0	\$30.4	\$0.0	\$0.0
Life Science Tools & Services	\$149.2	\$873.8	\$5,790.7	\$745.9	\$26,212.9	\$34,744.2
Managed Health Care	\$0.0	1,507.7	\$9,516.7	\$0.0	\$1,507.7	\$123,717.6
Personal Products	\$0.0	\$0.0	\$472.8	\$0.0	\$0.0	\$472.8
Pharmaceuticals	\$1,495.6	\$767.9	\$46,383.8	\$11,964.8	\$39,163.0	\$649,373.3
				<b>\$16,884.2</b>	<b>\$408,911.6</b>	<b>\$1,081,924.5</b>

(1) Canadian Dollars

Source: Bloomberg, TSX/NASDAQ/NYSE websites

### *Financial Engineering*

This term may be defined broadly as innovation in the use of existing financial models to manage capital expenditures and / or the introduction of successful methods from other industries to “decapitalize” (ie., to remove capital assets from) the healthcare balance sheet. As a specific example, the purchase of multi-million dollar laboratory equipment, which is capital intensive, has been able to overcome the constraints of the cyclicity of the capital allocation cycle through a “reagent rental” model whereby institutions pay a bundled per use fee that includes the capital component, service and depreciation of new instrument technologies. This allows hospitals to maintain the latest technologies and avoid large one time large capital expenditures. Similar models have been introduced in diagnostic imaging by corporations such as GE healthcare and Siemens for technologies like MRI machines. For complex surgical technologies, vendors often provide instrumentation sets on a rotating basis between hospitals with the costs bundled into single use technologies. In other industries, such as the hotel

51 Personal Communication: Connie Clerici, Closing the Gap Healthcare Group, 5 April 2012, Lori Lords, Spectrum Health Care, 11 October 2012.

industry, large chains such as Four Seasons have evolved into management companies operating as service providers for real estate owners and thereby reducing requirements for capital or moving it into the hands of those firms who seek to directly invest in owning it. These sorts of models may appear to threaten Canadians broad support for a completely public health system. However, it is unclear if it is necessary for the system to own all of the assets in the healthcare value chain so long as control and by the public sector and attention to equitable access and are assured. This creates the potential to place assets and risk in the hands of owners who will be more focused on their management. A similar model could be translated to hospitals or other large fixed assets in the healthcare system as long as the hospital license did not change ownership.

### *Social Finance*

Social finance is the most recent innovation in capital financing related to healthcare. This is essentially the monetization of social goals such as reduced recidivism among ex-convicts and the attachment of these goals to finance vehicles such as bonds, has received a substantial amount of attention in Canada as a way to connect capital and stronger performance on social goals.<sup>52</sup> Although social finance has largely dealt with the broader health sector – such as financing for employment programs among mentally ill – a recent review suggested that it would be well suited to health promotion and other goals within the healthcare sector.<sup>53</sup> Although experience in general remains limited with social finance, early evaluations are largely positive.<sup>54</sup> In this context, the use of balanced scorecard type of approaches could provide a way to measure hospital accomplishments that could, in turn, be related to borrowing costs of capital. As an example, a health outcome in a given population such as diabetes control over 10 years would form the basis for a government guaranteed bond that would be administered by a regional health authority with capital needs across a variety of healthcare buckets allocated by using true value-based cost-benefit analysis. A similar structure might be used to help overcome existing siloes and share gains in the healthcare system between institutions, physicians, pharmaceutical companies and community based care providers in an Accountable Care Organization – a structure rapidly gaining popularity in the US.

### **Evaluating new models for Canada**

Although earlier figures in this report show there has been a substantial increase in capital financing over the last decade, there has been relatively little experimentation in alternative methods of capital provision in Canada. Moreover, the locus of control for capital investment has largely remained inside of government with little opportunity for innovation in capital financing models. Moreover, there has been little explicit consideration of who should be involved and when they should be involved in capital financing decisions. Jurisdictions like the US and the UK have created agencies whose role includes assessing the financial and managerial capacity of healthcare organizations to assess risk. Despite organizations like the Canadian Mortgage and Housing Corporation that has experience in such assessments and has the ability to support financial risk, the Canadian healthcare system largely keeps these decisions within ministries of health and finance. Thus, the original question of how to improve the effectiveness of capital financing in Canadian healthcare remains largely unanswered.

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52 Canadian Task Force on Social Finance. Mobilizing Private Capital for Public Good. Toronto: Social Innovation Generation (SIG@MaRS), 2010.

53 Corrigan P. Social Impact Bonds. A New Way to Invest in Better Healthcare. London: Social Finance Ltd, 2011.

54 Canadian Task Force on Social Finance. Mobilizing Private Capital for Public Good. Toronto: Social Innovation Generation (SIG@MaRS), 2010.

As noted above, there are likely problems with the amount and distribution of capital in Canadian healthcare. Where there has been innovation in healthcare finance, this has had early positive review although experience in other jurisdictions suggests that P3 models do not represent a complete or consistently positive solution. In the 2003 report on access to capital for hospitals, the Ontario Hospital Association recommended that governments begin to view hospital capital spending as a strategic investment in the healthcare system and allow hospitals to use a range of mechanisms including debt instruments such as bond issues, municipal levies, and alternative financing models to raise the funds for needed capital improvements.<sup>55</sup>

Experience to date in Canada suggests that second-generation P3s with a strong project management infrastructure have worked well to reduce construction costs and delays.<sup>56</sup> The evidence from the UK suggests that this sort of private-sector involvement in infrastructure, however, should be supported by a careful evaluation of both individual projects but also the entire impact of P3s on total expenditure and efficiency in the health system. Very limited anecdotal evidence suggests that carefully thought-out approaches to capital markets such as the Toronto General Hospital bond issue can provide both needed capital and potentially stronger financial performance. Social finance appears to offer interesting mechanisms to address the problem, but is unproven and not well developed as it relates to the healthcare capital arena. Opportunities to engage large pension plans such as the Canada Pension Plan as well as better use of public and private equity markets to both increase the total amount and efficiency with which capital is invested in healthcare in Canada are also attractive, but the mechanisms to do so are poorly developed. Beyond that, there is little evidence on the suitability of new approaches to improving access to capital in the Canadian healthcare system. It is important to emphasize here that none of these approaches necessitate a change in the current mix of not-for-profit and for-profit providers in health care with the exception of greater equity-based financing of capital.

However, it is also clear that capital requests vary widely in nature and size. Capital projects may range from large (e.g. entirely new construction) to relatively small investments (e.g. improvements in facilities, diagnostic technologies) and many others with widely varying costs (information technology). Some investments – such as replacing very old buildings – will likely be necessary to maintain standards of care and meet capacity needs without any clear improvement in outcomes or costs. Others may increase costs through the addition of expensive technologies that are costly to operate and do not necessarily reduce the cost of care. But a large number of these investments will have pay-offs in the form of improved outcomes and/or improved efficiencies.

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55 Ontario Hospital Association. *Capital Planning and Investment in Ontario's Hospitals: A Sustainable and Comprehensive Approach to Meeting Patient Care Needs*. 2003.

56 The first wave of P3 projects is generally viewed to be those initiated prior to 2004. This includes two major healthcare deals, the Brampton Civic Hospital and the Royal Ottawa Mental Health Centre in Ontario. As noted in the Conference Board of Canada review of P3 deals (Conference Board of Canada, 2010) and the Ontario Auditor General, (Auditor General of Ontario, 2007) the evaluation of the first wave of P3s in Canada as a whole is difficult because of the relative absence of value for money studies of these investments and by a general lack of transparency on the procurement process and details.

## RECOMMENDATIONS

*Recommendation Set 1: Develop new resources to support capital investment.* There is a need for new resources to analyze the need for capital, how it may be deployed to increase health system performance, and the associated return on investment. More specifically, we suggest that governments and health system providers work together to:

- a. *Build a capacity planning model for the Canadian healthcare system.* This model should recognize demographic shifts, trade-offs between different sectors (e.g. long-term care and home care), the effect of capital and capacity increases on health system efficiency and performance, and calculate the total capital requirements across our healthcare system. The model should include a methodology for valuing existing capital stock in the system and provide a framework to assess equitable distribution of capital. It should also be capable of assessing the appropriateness (functional aspect of planning) of units that are priorities for upgrades. Although need may be present, existing capital stock may not be able to support the efficient and high quality delivery of care despite upgrades. Organizations like the Canadian Institute for Health Information could create the balanced table necessary to establish this model as part of their existing mandate and base it to a great extent on existing datasets. This model should be available at the provincial level given that provincial governments will either provide or guarantee the majority of capital investments.
- b. *Set benchmarks on expected returns on capital investment to guide capital decisions in healthcare.* Information comparing the cost of capital (and the cost of procurement) and the expected returns should be a component of any request for funding by healthcare organizations. This information could be made public in a way that supported the needs of individual healthcare corporations, researchers, and investors. Over time, this information could provide a valuable foundation for setting hurdle rates on expected efficiencies and returns on capital investment in healthcare. This information would be helpful to healthcare boards and executives as they consider the performance of current and potential capital investments, to governments as they work to increase the efficiency with which capital is deployed, and to researchers studying the determinants of health system performance. These data would also be value-based taking into account both measurable tangible and intangible health benefits and trade-offs.
- c. *Create a shared resource of skilled individuals and tools to share best practices in capital planning used by government, the private sector, and healthcare organizations.* As part of the interviews and discussions that supported the development of this paper, we identified a number of examples of healthcare organizations using different tools and techniques to plan and manage capital expenditure. However, the use of these tools did not spread across organizations nor even persist over time within one organization. Many of these individuals and tools may reside in other parts of government including those dealing with infrastructure or are scattered through the not-for-profit delivery system. There is no opportunity for policy-makers to consult with this group of individuals.

When combined with the results of the capacity planning model, this information would be helpful for establishing a number of important definitions and expectations, such as the true weighted average cost of capital and return on invested capital that should be expected from investments designed to maintain standards and those designed to improve performance. This information is also likely critical in establishing expectations around return for any social finance initiatives in healthcare. Finally, the calculations and experience derived from the combination of a model and good data should help set thresholds that would determine at what level of project size or risk government would see as creating

a requirement to intervene in capital investment decision-making in healthcare organizations and the appropriate method for determining long-term changes in operating funding necessary following capital investments.

*Recommendation Set 2: Increase the amount and availability of capital that can improve health system performance and shift capital financing methods to those that help increase the return on investment and the efficiency of the investment process.* In this paper we suggest that there is a gap between the current need and supply of capital, although that gap is difficult to quantify without a capacity planning model that establishes a credible level of need (see above). We also suggest that some methods of providing capital and realizing the returns from capital investments are more effective than others and while some capital decisions require increased government oversight, others may be better served moving out of a centralized control model. In order to improve both the access and performance of capital, governments should:

- a. *Expand the use private vehicles and the engagement of the Canadian investing community as a way of increasing access to capital for healthcare organizations.* With strong transparency and oversight, P3s appear to have lowered the cost of procurement in Canada and the UK but increased long-term costs in the UK. P3s require greater long-term evaluation in Canada. However, this mixed evidence should not discourage attention to other structured finance tools such as bond issues by healthcare institutions where the total long-term costs are clear and predictable. Bonds and other similar tools can provide the additional advantage of not requiring direct and immediate government contribution and may provide an extremely effective way to leverage current public sector assets that are consolidated onto government books but provide no significant positive contribution to government's bottom line. Perhaps most importantly, the additional required scrutiny imparts a level of operational discipline on senior management of healthcare institutions over the long haul thorough rigorous oversight and reporting requirements of institutional investors.
- b. *Develop a regulatory framework where healthcare capital investment that is focused on improvement and value as outlined through the model and benchmarks in Recommendation 1 is prioritized over other capital expenditures.* The current system of access to capital relies heavily on government as a source of capital and for decisions on capital allocation. This means that hospitals and other facilities face zero (in the case of grants) to very low interest rates (on repayable capital contributions). However, it is not clear that the efficiency of the capital investment process and the return on investment is well handled outside of specific circumstances where there are incentives to focus on these issues. This regulatory framework should encourage integrated capital planning and allocation across sectors of care to capture the potential cost and quality advantages of integration. Current models of allocation tend to focus on a specific set of sectors and do not necessarily encourage the delivery of the right care in the right place.
- c. *Support philanthropy as an important source of healthcare capital through additional tax and other incentives.* More transparent evaluation and reporting on philanthropic contributions to capital spending needs development and may support more effective capital investment regardless of the source.<sup>57</sup> Mechanisms to address geographic and other disparities created in the unequal distribution of philanthropic donations should be considered perhaps through different levels of government matching funds in order to ensure appropriate access and quality, not merely to compensate for differences in philanthropic levels. Ongoing focus on creating tax and other incentives to support philanthropy in healthcare should be promoted

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57 Tierney TJ, Fleishman JL. Give Smart. Philanthropy that Gets Results. New York: Public Affairs, 2011.

- to all levels of government. Attention must also be paid to ensuring Canada's next generation of potential donors recognize value in supporting Canadian healthcare institutions. Also, attention needs to be given to ensure that donor priorities do not distract from the needs of the health system in addressing pressing healthcare challenges including the aging population.
- d. *Continue to build capacity in multi-disciplinary organizations focused on assessing capital expenditures and vetting returns on invested capital.* Processes such as the Ontario Health Technology Advisory Committee (OHTAC),<sup>58</sup> the Canadian Agency for Drugs and Technologies in Health (CADTH) and other activities that provide evidence on the effectiveness and cost-effectiveness of different capital investments similar to the evaluations that led to limited coverage of PET scanning in Ontario are a valuable model that potentially could be scaled across all provinces or at a pan-Canadian level.
  - e. *Expand the use of hospital funding models such as patient-based payment that can reward quality and efficiency gains achieved through capital investment.* These systems can provide the opportunity for management to develop revenue streams that will appeal to investors more than historically-based global budgets. However, the impact of these funding models on the operating margin component of healthcare capital allocation must be considered so as not to decapitalize those healthcare providers who need investments to improve performance the most nor should they be based on average costs that may not encourage high-quality care.
  - f. *Create pilot projects in social finance that link financing to hospital and other healthcare organizations for improvements in quality to corresponding reductions in waste and improvements in financial position through capital investment.* This pilot project work could be supported at a federal level or at the provincial-territorial level to leverage current public spending on capital, similar to the way that Canada Health Infoway contributions leverage spending at the organizational level and at two levels of government. These projects (i.e. funds) should be careful not to substitute for philanthropy but rather should augment it.

*Recommendation Set 3: Ensure a strong research and communications infrastructure around capital investments.* This report has repeatedly drawn attention to the relatively low level of evidence that is available on healthcare capital investment compared to other topics in healthcare financing. Without careful communication of the value of capital investment any efforts to expand the range of vehicles available for capital financing may run afoul of concerns over the privatization of healthcare which is unnecessary to any of the recommendations in this report. Likewise, without careful communication, these recommendations may be misinterpreted as removing liabilities around capital from government accounts. Given relatively low hospital and other healthcare capacity in Canada, government is unlikely to be willing to contemplate a health system where regional authorities and hospitals would be allowed to close due to bankruptcy and thus bear the operating cost responsibilities of the system overall. The recommendations in this report are designed merely to increase the effectiveness of the management of capital investments. Similarly, without stronger evaluation of capital investments and research into the determinants of strong capital investment, understanding of capital investment is unlikely to progress. In order to address these shortcomings, government, healthcare providers, and the research community should:

- a. *Endorse the importance of increased capital investment that is more effective and value-driven at federal, provincial, and regional levels.* Evidence (cited above) suggests that quality and performance overall improves with better availability of capital. Certain capital expenditures may be better managed outside of government while others may benefit from increased

58 Levin L, Goeree R, Levine M, Krahn M, Easty T, Brown A, Henry D. Coverage with evidence development. The Ontario Experience. *International Journal of Technology Assessment in Healthcare*, 2011;27:159-68.

control and rigorous evaluation. Engagement of the private sector in investing and evaluation of Canadian healthcare has the potential to strengthen the system without any need for “for-profit” care. Further research, grounded in modeling and quantitative analysis, should carefully evaluate the role of capital in promoting performance, the value of equity capital, accessed through social finance or through investors or other markets, and the potential value of profit and other incentives in improving performance.

- b. *Identify and support the managerial capacity and cultural changes in the healthcare system necessary to manage new financing vehicles effectively and realize improvements in efficiency that can be provided by access to capital.* This includes better training of managers and leaders in project finance and a cultural shift in the way managers vet capital investments. The responsibilities and expectations of increased performance following capital investment should be made explicit through accountability agreements, performance measurement and reporting frameworks and other vehicles. However, this accountability for greater value is not merely the responsibility of those receiving capital. Both public and private players including banks, pension plans, and private equity could play a part in the development and evaluation of new and existing financing vehicles in healthcare. There are already standards and resources, such as the Evidence-based Design Accreditation and Certification (EDAC) set of standards and the Pebble project that can valuable evidence and support clear communication around these issues. Given concerns over the sustainability of overall healthcare spending and its effect on other areas of social policy spending, this work should include examinations of the effect of increases in capital on overall healthcare spending and quality of care. The explicit goal for innovations in capital should be to raise or maintain quality while reducing overall costs.
- c. *Require rigorous evaluation and public disclosure of all capital projects including “own funds” capital projects financed through philanthropy or other “in kind” contributions.* Hospitals and other healthcare institutions in Canada generally face a requirement to provide to the Minister of Health data on their activities. This requirement is generally used to support capture of transactional data, but it could and should be extended to include a more careful accounting of the true extent, benefits, and costs of capital projects in healthcare in Canada.

### *Prioritizing Recommendations*

As governments face the challenge of a global economic crisis, the importance and pressure on healthcare capital investments are likely to increase. This means that it may be difficult to implement all of the recommendations included in this report. Faced with the need to prioritize recommendations, policy-makers and other decision-makers may want to focus on ensuring that current capital investments are appropriate and match needs, are as efficient as possible, and that the available pool of capital is expanded first through unlocking of capital already in the system before allocating new dollars. They also may seek to build capacity in capital evaluation and seek to value the capital and the equity in its distribution in the system as it exists today. In practical terms, this would mean that the most important recommendations from this report are those around defining the need for capital and increasing information on its performance (1-a, 1-b) and expanding access to capital through methods that are likely to provide strong returns. (2-a and 2-f) Beyond these recommendations, we hope that policy-makers will pay greater attention to the importance of capital when setting strategy.