

## EVIDENCE-INFORMED OPTIONS FOR HOSPITAL FUNDING

### ARE HOSPITAL FUNDING MECHANISMS IN CANADA DESIGNED TO PROVIDE EFFICIENT CARE?

Canadian governments are spending more on healthcare than ever. Driven by technological innovation, population aging, inflation and other factors, public healthcare expenditures are forecast to continue to increase, causing concern about the sustainability of Canada's publicly funded systems.<sup>1</sup> The hospital sector accounts for over 28% of total healthcare expenditures in Canada. Although this share has fallen considerably over the past few decades,<sup>2</sup> hospitals continue to represent the largest single component of healthcare expenditures. Hospital expenditures are projected to exceed \$55 billion in 2010.<sup>3</sup>

Evidence suggests that provinces differ in terms of healthcare spending efficiency,<sup>4,5</sup> which implies that there should be an opportunity for improvement. An often-cited source of inefficiency in the Canadian hospital sector is the reliance on 'global budgets' as the primary source of hospital funding. Global budgets can perpetuate inefficient care because they offer little incentive to reduce costs or foster innovation.

Based on a paper commissioned by CHSRF,<sup>6</sup> this brief provides a summary of the available evidence on promising hospital funding options and their impact on the following goals: timely and equitable access, optimal volume of care, quality, efficiency and constraining future cost increases.

#### HIGHLIGHTS

- ▼ Hospital funding through a global budget does not provide incentives to improve access, quality or efficiency of care.
- ▼ Global budgets can be an effective cost-control instrument and can be combined with other funding mechanisms to accomplish various policy goals.
- ▼ At the regional level, provinces could reduce funding inequities by applying principles of population-based funding.
- ▼ At the hospital level, combining activity-based funding and global budgets would likely improve healthcare spending efficiency.

1 See CHSRF research synthesis paper on cost-drivers in the healthcare system for a review of Canadian studies (to be published in 2011).

2 The share decreased by 14 percentage points since the late 1970s.

3 Canadian Institute for Health Information. 2010. National Health Expenditure Trends, 1975 to 2010. Ottawa: CIHI.

4 Efficiency can be expressed as obtaining better value (e.g. quality, type and volume of care, patient outcome) for the money spent and raising value through 'spending better.' Efficiency may be achieved by increasing health value while holding expenditure unchanged, or by reducing expenditure with health value held constant.

5 Liu, C., Ferguson, B. S. and Laporte, A. 2006. Ranking the health system efficiency of Canadian provinces, American states and OECD countries, using DEA. Paper presented at the annual meeting of the Economics of Population Health: Inaugural Conference of the American Society of Health Economists, Madison, WI, U.S.A.

6 Sutherland, J. Hospital Payment Policy in Canada: Options for the Future. Ottawa: Canadian Health Services Research Foundation (to be published in 2011).

## Hospital efficiency and global budgets

Hospital funding mechanisms can influence the delivery, and hence, the quality and volume of care provided.

Currently, the primary source of revenue for hospitals in the Canadian system is through a global budget.<sup>7</sup> A global budget means that a fixed (global) amount of funding is distributed to each hospital, to pay for all hospital-based services for a fixed period of time (commonly one year).<sup>8</sup> In many provinces, the global budget is based on historical spending, politicking and inflation rather than on the type and volume of services provided.<sup>9</sup>

Funding hospitals with a global budget provides predictability of spending and can be an effective cost-control instrument (by capping the amount spent on hospitals). However, when efficiency is expressed as obtaining better value for the money spent, global budgets provide little incentive for hospitals to focus on efficiency, innovation, improving access, coordinating care across facilities and sectors<sup>10</sup> or improving quality.<sup>11</sup> Furthermore, since global budgets are largely based on prior budgets, there is a risk of perpetuating historical inequities or inefficiencies<sup>12</sup> and cultural spending norms within hospitals.<sup>13</sup>

## Alternative hospital funding mechanisms

Alternatives to global budgets for funding hospitals are widely used in other countries and to varying extents in some Canadian provinces. Each of the following funding alternatives<sup>14</sup> has strengths and weaknesses, and provides unique incentives that influence hospital behaviour and drive patterns of hospital care delivery.

**Activity-based funding (ABF)**<sup>15</sup> remunerates hospitals on the basis of the volume of services provided as well as the characteristics of the patients being treated. ABF is more complex to implement than a global budget approach because it requires the following two features: 1) the development of a patient classification system, such as diagnosis-related-groups (DRGs), which relate types of patients treated to the resources used to treat them, and 2) the determination of a payment amount for each DRG. The payment amount represents the expected cost of a hospitalization of a patient assigned to any DRG. Most countries using ABF have developed their own DRG system to reflect local treatment patterns and costs. In Canada, the Canadian Institute for Health Information maintains a system known as case mix group plus (CMG+), which could be used as a starting point to develop an ABF funding system.

7 See McKillop (2001) for a comprehensive review of approach used to determine funding allocations to organizations responsible for hospital-delivered acute care in each jurisdiction.

8 Sutherland, J. Hospital Payment Policy in Canada: Options for the Future. Ottawa: Canadian Health Services Research Foundation (to be published in 2011).

9 Idem

10 This includes shifting some activities considered to be less acute to other sub-sectors or using less costly settings for some services.

11 Sutherland, J. Hospital Payment Policy in Canada: Options for the Future. Ottawa: Canadian Health Services Research Foundation (to be published in 2011).

12 Deber, R., Lam, K.C.K., Roos, N., Walld, R., Finlayson, G.S. and Roos, L. 2008. Canadian healthcare: Need and utilization in an almost-universal system. *Harvard Health Policy Review*, 9(1):46-55.

13 Sutherland, J. Hospital Payment Policy in Canada: Options for the Future. Ottawa: Canadian Health Services Research Foundation (to be published in 2011).

14 **Line-by-line-based funding** and **fee-for-service funding** are not examined because they are not considered to be promising options in Canada. Line-by-line funding derives a funding level for each line item of hospital input or activity categories (such as inpatient nursing, ambulatory care, diagnostic imaging) from historical line-by-line spending. The lack of incentives in this approach is similar to that outlined for the global budget. Fee-for-service-based funding remunerates hospitals retrospectively for each activity/service provided to patients. This approach rewards only one thing: volume! Additional services provide additional revenue for the hospital, which likely encourages the over-consumption of care and doesn't constrain spending. Fee-for-service does not provide incentive to hospitals to consider costs (nor benefits) of the treatment, efficiency and quality.

15 This funding mechanism is also known as case-based funding.



The major benefit of ABF is its strong incentive for hospitals to be cost-efficient because the hospital retains any surplus in funding over its actual cost.

International evidence regarding ABF has shown that length of stay, wait times and cost per discharge tend to decrease, while the volume of patients treated and total hospital expenditures tend to increase compared to non-ABF funding. Outcome indicators of quality (such as rates of mortality, unplanned readmission, and hospital-acquired infection) reportedly remain unchanged and process indicators of quality (such as the rate at which patients receive care or the timing of the care) tend to improve or remain constant.<sup>16</sup> The results on whether overall hospital spending using ABF provides better value are mixed. Each country's evaluation of ABF is complicated by multiple factors, making the link between ABF and the indicator of interest difficult to isolate.

The incentive structure of ABF does not reward better coordination of care across facilities and sectors. Furthermore, the model has been linked to risk selection, where there is a preference to treat groups of patients where costs are low relative to payments and/or restrict access to hospital care for groups of patients where costs are high relative to payments. In Norway, there are emerging concerns that ABF is associated with over-provision of some hospital services,<sup>17</sup> while in the U.S. there are reports that hospitals attempt to limit access for the most costly patients.<sup>18</sup> Risk selection is less likely in Canada given that hospitals are often the sole providers in their communities and are obligated to accept patients. However, the success of any ABF system rests on the ability to closely align the payment amount for each DRG with the expected cost of hospitalization.

Combining properties of ABF and global budgets can draw on the strengths of both methods. ABF tends to increase total hospital expenditures due to increased volume, while global budgets effectively constrain cost growth. Consequently, some countries have blended the two approaches. The proportion of hospital funding covered by ABF has varied among the countries that have taken this approach. While there are theoretical arguments for covering hospitals' fixed costs with global budgets and variable costs with ABF, in practice, the proportion of hospital funding covered by ABF generally reflects elements of policy making, politicking and negotiation between the funder and hospitals.

This blended approach would align incentives to achieve timely and equitable access, appropriate volume of care, and high-quality care and efficiency, while controlling total hospital expenditures. Compared to a system using only ABF, a blended approach would likely reduce the risk of patient selection by securing a fixed global budget that can be used at the discretion of the hospitals and can help to offset situations where patient costs are higher than expected.

Population-based funding for regions as a complement. Population-based funding has been used by some provinces to allocate funding to health regions. This approach uses population characteristics (such as age, gender, socio-economic status, morbidity prevalence and isolation factors) to allocate the funding pool among health regions based on their relative share of the population's characteristics. The health region then determines the funding amount to transfer to each hospital for operating funds using the funding mechanism it prefers.

<sup>16</sup> Sutherland, J. Hospital Payment Policy in Canada: Options for the Future. Ottawa: Canadian Health Services Research Foundation (to be published in 2011).

<sup>17</sup> Ettelt, S., Thomson, S., Nolte, E. and Mays, N. 2006. Reimbursing highly specialised hospital services: the experience of activity-based funding in eight countries. London: London School of Hygiene and Tropical Medicine.

<sup>18</sup> Antioch, K.M. and Walsh, M.K. 2004. The risk-adjusted vision beyond case mix (DRG) funding in Australia. *European Journal of Health Economics*, vol 5: 95-109.

Population-based methods for funding regions are considered a complement to ABF, as each approach addresses a different aspect of funding. Population-based funding helps address historical funding inequities among regions by recognizing potential differences in demand across populations and over time. However, population-based funding does not provide an incentive structure to hospitals to achieve the various policy goals, such as efficient spending, more timely access, and improved quality and coordination of care across sectors.

**Bundled episodes-based funding** extends the ABF approach beyond a patient's single episode of hospital care to the wider spectrum of care. By re-defining the patient classification system for hospitals (DRG) to account for the services provided to the patient from pre-admission to post-acute care, including physician payment, hospitals would be remunerated with a single payment to manage the bundle of the patient's episodes. This approach provides incentives for delivering appropriate volume and cost-efficient care across the spectrum and rewards coordination and collaboration of care through the formalization of joint accountability between facilities and clinicians.<sup>19,20</sup> Furthermore, it removes the risk of cost shifting between sectors<sup>21</sup> and potentially improves quality measurement.<sup>22,23</sup>

Although bundled episodes-based funding may be an interesting option for Canada in the long run, it is unlikely to be implemented in the medium term. First, setting the payment amount for the bundled episodes is even more challenging than ABF, given the wider variability of in-patient treatments. Significant work is also needed to link, and value, hospital episodes, physician claims and post-acute care. Second, regulatory barriers exist that prevent such funding from being implemented—for example, hospitals are prohibited from providing direct payments to physicians. Furthermore, little is known about the effect of bundled episode-based funding on risk selection and total hospital expenditures.

**Pay-for-performance (P4P)**, which can be a supplement to any existing hospital funding policy, seeks to reward appropriate, high-quality care. In practice, hospitals are eligible to receive supplemental payments for their process measures (such as the appropriateness of care) or their patient outcomes (such as reducing rates of mortality, unplanned readmission and hospital-acquired infection). P4P for physician compensation has been widely introduced across OECD countries, although the impact on quality and cost remains unclear.<sup>24</sup> International experience to date suggests that P4P possibly increases quality and efficiency in public health interventions, such as cancer screening, and improves management of chronic conditions such as diabetes and cardiovascular disease.<sup>25</sup> Initiatives in the U.S. Medicare system are explicitly linking indicators of quality to the DRG payment. For example, hospitals do not receive higher DRG payments when patients are diagnosed with a hospital-acquired condition.<sup>26</sup>

19 Hackbarth, G., Reischauer, R. and Mutti, A. 2008. Collective accountability for medical care - toward bundled payments. *New England Journal of Medicine*, 359(1): 3-5.

20 Medicare Payment Advisory Committee. 2009. Report to the Congress: Improving incentives in the Medicare program. Washington, D.C. : Medicare Payment Advisory Committee.

21 Mor, V., Intrator, O., Feng, Z. and Grabowski, D.C. 2010. The revolving door of rehospitalization from skilled nursing facilities. *Health Affairs*, 29(1): 57-64.

22 Birkmeyer, J.D., Gust, C., Baser, O., Dimick, J., Sutherland, J.M. and Skinner, J.S. 2010. Medicare payments for common inpatient procedures: Implications for episode-based payment bundling. *Health Services Research*.

23 Thomas, F.T., Caplan, C.C., Levy, J.M., Cohen, M., Leonard, J., Caldis, T. and Mueller, C. 2009. Clinician feedback on using episode groupers with Medicare claims data. *Health Care Financing Review*, 31(1): 51-61.

24 OECD. 2010. Value for money in health spending. OECD Health Policy Studies. Paris, France.

25 OECD. 2010. Value for money in health spending. OECD Health Policy Studies. Paris, France.

26 Fuller, R.L., McCullough, E.C., Bao, M.Z. and Averill, R.F. 2009. Estimating the costs of potentially preventable hospital acquired complications. *Health Care Financing Review*, 30(4): 17-32.



A broad implementation of P4P programs can be complex and likely faces several significant challenges in Canada, such as establishing quality measures, collecting data and monitoring the data for performance. Careful attention to the design of P4P programs is essential to avert unintended consequences, such as neglecting some practices while favouring those that are targeted by the performance incentives, or rewarding the practices that are already doing well and increasing inequities in the health system.<sup>27</sup>

## Considerations for policy

Canadian hospital funders have the opportunity to learn from other countries' health system reforms and domestic successes. Theoretical and empirical evidence demonstrates that global budgets are not designed to provide efficient care and that there is a range of possible hospital funding levers available to policy-makers to address their various policy goals.

In the Canadian context, Sutherland suggests that the provinces use population-based funding methods to allocate health funding at the regional level in order to reduce historical funding inequities by recognizing differences in need across populations, regions and over time.

In addition, Sutherland proposes that provincial governments implement ABF in conjunction with existing global budgets at the hospital level and presents some recommendations on how ABF should be implemented. He concludes that even though P4P programs attract enormous attention, little is known about the validity and proximity of quality indicators to hospital performance. More investigation is required before adopting P4P for the hospital sector.<sup>28</sup> Nonetheless, it is likely that the adoption of population-based funding, ABF and global budgets together would improve healthcare spending efficiency in the hospital sector.

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<sup>27</sup> OECD. 2010. Value for money in health spending. OECD Health Policy Studies. Paris, France.

<sup>28</sup> Sutherland, J. Hospital Payment Policy in Canada: Options for the Future. Ottawa: Canadian Health Services Research Foundation (to be published in 2011).