

Adopting Health Care Innovations in Quebec

Suggested Alternative Models

A partnership with



HEC MONTRÉAL

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Executive Summary

Quebec will experience more modest economic growth over the next few years, reducing the provincial government’s fiscal capacity. At the same time, the “built in” annual growth in health care spending, estimated by The Conference Board of Canada at roughly 5.2 per cent, will exceed the public health system’s ability to pay. In order to control the growth in spending and maintain a balanced budget, Quebec’s health care network should look at new ways of incorporating medical, pharmaceutical, and administrative innovations.

With a view to more efficient use of health care dollars, the Institut du Québec (IdQ) has prepared a survey of the province’s existing health care delivery system. It covers aspects such as deficiencies in adopting innovations capable of reducing system overhead. With respect to drug policy, the system’s managers have not indicated any intentions to promote the systematic integration of innovations into their supply arrangements other than by traditional means. While a few coordination panels and discussion groups have suggested solutions, implementation has been slow.

One such solution would be a switch from the existing cost-based procurement system to a value-based system, which shifts responsibility to bidders for suggesting solutions to problems defined by the purchaser. It also encourages solutions not currently available in the marketplace, and helps to develop new responses to existing problems while reducing costs. Such a procurement method represents a cultural change, since it involves creating “value” for patients, suppliers, and everyone involved.

The government should consider setting up pilot projects to test various types of value-based procurement.

A number of procurement models based on a call for solutions have already been developed worldwide, including:

- a package deal for an entire health care episode
- defining a call for solutions by presenting a hypothetical case
- pretesting of products ahead of the call for bids
- risk-sharing agreements
- comprehensive assessment of medication costs and benefits
- establishing registers that provide access to patient data
- a dialogue with suppliers ahead of the call for bids

IdQ suggests that the government consider the development of pilot projects to test one or more types of value-based procurement systems. This could produce innovations that would meet health care requirements without exceeding the Quebec system's ability to pay.

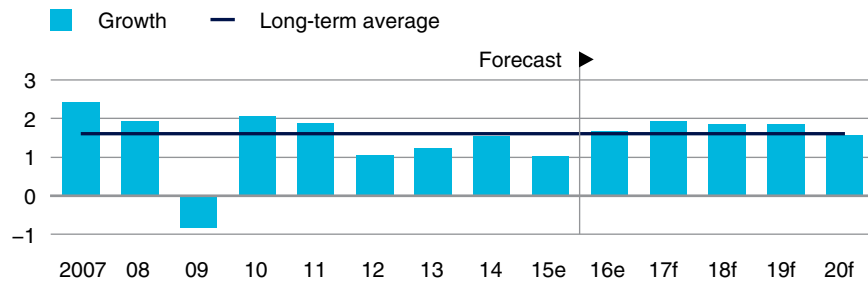
Introduction

Economic Reality, Health Spending, and Innovation

Quebec will be dealing with lower rates of economic growth over the next few years. Average growth in the province's real GDP is not expected to exceed 1.6 per cent annually in the long term; that is, up to 2020. Combined with a general decrease in economic investment and the demographic issues associated with an aging population, the economic slowdown will result in reduced government revenue. Chart 1 shows expected economic growth in Quebec in the years ahead.

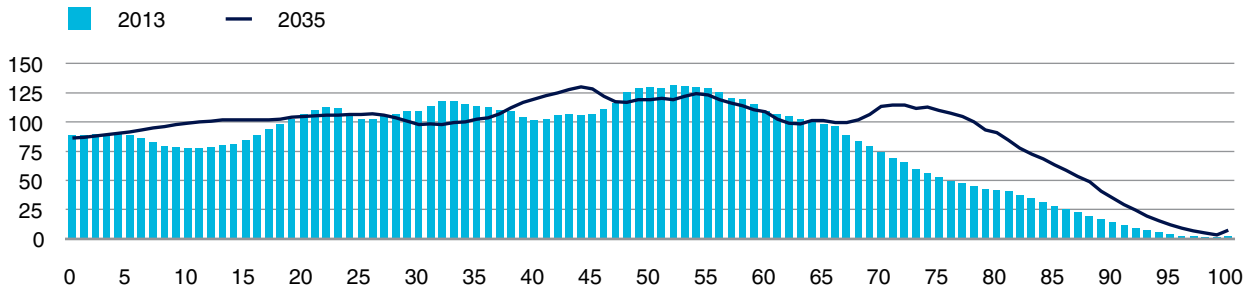
At the same time, the aging population will exert upward pressure on health spending, which will lead to a cost explosion in various programs if the Quebec basket of services remains the same. Chart 2 illustrates changes in Quebec's population through 2035.

Chart 1
Expected Growth in Real GDP
(per cent)



e = estimate
f = forecast
Source: The Conference Board of Canada.

Chart 2
Quebec Population by Age, 2013 and 2035
(000s, by age)



Sources: The Conference Board of Canada; Institut de la statistique du Québec.

It is assumed that the volume of health care services required to care for the province’s aging population will increase substantially. Using population projections and historical analyses, The Conference Board of Canada has determined that because of the inflation typical of the health environment and the growth rates associated with innovation, the pressure on health system costs will be 5.2 per cent a year through 2035. The cost increase related to population growth and aging is based on recent data on health spending by age group; the cost increase associated with innovation is based on historical averages over the last

30 years. To provide the same services year after year, the government must invest 5.2 per cent more every year in health care.

Table 1 provides a breakdown of the growth rates.

Table 1

Breakdown of Growth in Health Care Spending, 2014–35

(per cent)

Technological change and greater accessibility—spending due to increased care per person, by reason of enhanced accessibility or technological progress, calculated on the basis of the 30-year trend	1.0
Demographics	
Population growth—spending due to the increase in the number of persons treated	0.7
Aging—increase in average spending generated by population aging	1.1
Inflation—inflation rate applicable to health care spending, calculated on the basis of the 20-year trend	2.4
Total	5.2

Source: The Conference Board of Canada.

In its most recent budget for 2016–17, the Quebec government announced a reinvestment in health care of some 2.4 per cent more than last year, which is below actual needs as recorded in the past. Over the last five years, the rate of growth in health care spending has been only 2.9 per cent.¹

Quebec is not the only jurisdiction coping with a health care system under pressure. Despite significant efforts to control health care costs, Canada continues to spend more than the average of G7 countries in this area. Moreover, the overall quality of care delivered is below that of member countries of the Organisation for Economic Co-operation and Development (OECD). According to the Conference Board's *How Canada Performs: Health* rating, Canada ranks 10th in a comparison of health care costs by country.² It is estimated that in 2015, the total of private and public health care costs in Canada was \$219.1 billion.³ As a percentage of GDP, this is 1.3 per cent above the average of OECD countries—10.9 per cent for Canada and 9.3 per cent for all OECD

1 Bernard and others, *Équilibre budgétaire*.

2 The Conference Board of Canada, *How Canada Performs: Health*.

3 Canadian Institute for Health Information, *Spending*.

Health accounts for 43 per cent of government program spending, a proportion that will increase in the years ahead.

countries combined. However, this increased expenditure has not resulted in better or more effective health care, as shown by Canada's poor performance with respect to cancer, musculoskeletal system diseases, and diabetes prevention.⁴

Health care accounts for 43 per cent of program spending by governments, and the proportion will continue to increase in the years ahead. In the report *Choc démographique et finances publiques : pour un contrat social durable*,⁵ the Institut du Québec (IdQ) shows that Quebec must maintain growth in health care spending at 4.2 per cent annually to preserve its balanced budget. This represents 1 percentage point less than the natural increase. Therefore, 4.2 per cent is the growth rate IdQ uses in its projections.

To preserve the gap between natural growth and the growth required to maintain a balanced budget, the government faces choices relating to its health care procurement model, among other things. While nothing can be done about population pressure, something can be done about the costs of innovation. This is why “value based” procurement programs have begun to appear, pushed by a number of countries dealing with similar challenges.

Strategic value-based procurement could actually reinvent the future of health care. This patient-centred approach to system integration stresses the quality of procurement, rather than minimization of costs and quantities. In accordance with the traditional vision, the government should choose from the supply of innovative equipment, treatments, and procedures for Quebec patients. In accordance with a value-based vision, there are wider choices because there are no predetermined solutions for a given problem.

This briefing looks at the adoption of a procurement approach based on value creation in the health care system, and the incorporation of innovations into that system, particularly with respect to medication. It first discusses the existing procurement system, and then describes the benefits of the value-based model. It also provides explanations of other

4 The Conference Board of Canada, *How Canada Performs: Health*.

5 Bernard and others, *Choc démographique et finances publiques*.

ways of incorporating innovations that have been adopted around the world. Lastly, the briefing recommends some possible solutions designed to enlighten the government in the choices it makes concerning the management of health care innovations.

The Existing Procurement System in Quebec

The procurement system in the health care sector in Quebec is divided into three sectors:

- procurement of medical supplies, managed by purchasing groups;
- procurement of medication for hospitals, managed by purchasing groups;
- procurement of medication in the private sector, which is managed by private enterprise but monitored by the government

The following sections mainly discuss the procurement of medication.

The Role of Medication

In order to understand the current role of medication in the procurement process for Quebec's public health care system, we take a brief look at developments over the last decade.

Medication Policy

The medication policy published by the Quebec government in 2007—*La politique du médicament*⁶—established the basis for the current procurement processes. In a sense, the policy defined the Quebec government as the service provider for the public scheme of health insurance medication.

With the adoption by the Government of Quebec of a combined public-private scheme for universal medication insurance coverage in 1997, the cost of medication reimbursement increased at an accelerated rate over the succeeding 10 years. While it stood at \$1.2 billion in 1997, it had surged to \$3 billion by 2006. The cost of reimbursement has since been reduced—to \$2.6 billion according to Conseil du trésor figures for 2016–17—particularly as a result of a decrease in the price of generic drugs

6 Gouvernement du Québec, *La politique du médicament*.

The Quebec government's 2007 policy on medication established the basis for the current procurement processes.

and the expiry of some innovative drug patents. Total Quebec spending in 2011 on medication and services was over \$8 billion.⁷

The avowed aim of the policy was to give the people of Quebec “reasonable” access to innovative medication and medication in general while maintaining control of public finances. In it, the government made up two lists, one general and one by facility, which was used to determine whether the cost of a particular medication was reimbursable or not. It unfroze prices, which had been frozen since 1994, on the basis of the consumer price index. In exchange, manufacturers were required to bill Quebecers the best price available in Canada, as seen by the commitment endorsed by the manufacturers in the 1990s.⁸ Complemented by 29 departmental guidelines, the policy did not change the drug procurement culture in Quebec, which had traditionally been based on calls for bids. It was primarily a tool for controlling costs.

At the time, departmental guideline 27 had the potential to bring about improved integration of innovations. (See “Guideline 27 of the Medication Policy.”) It allowed the government to reach partnership agreements with the pharmaceutical sector on the sharing of costs and risks. Such agreements were to be signed in exchange for payment by the manufacturers of a significant share of the amounts reimbursed by the public scheme, said to be higher than expected. However, the measure has been used only on rare occasions since the policy on medication was tabled. Yet its use could have prompted the emergence of new solutions within the provincial health care system, without the costs generally associated with it being borne entirely by the taxpayers.

⁷ Montmarquette, Boulenger, and Castonguay, *Les risques liés à la création de PHARMA-QUÉBEC*.

⁸ *Act Respecting Prescription Drug Insurance*, 2002 CQLR c A-29.01.

Guideline 27 of the Medication Policy

Actions to achieve the best possible use of medication can take many forms, can be general in nature, or can apply to specific classes of medication. The Minister of Health and Social Services therefore proposes:

- to negotiate agreements with associations of manufacturers of innovative medication and manufacturers of generic medication in order to permit the adoption of structural measures, particularly research and evaluation, public information, and the training of health professionals;
- to negotiate specific partnership agreements with manufacturers involved in issues related to a class of medication in order to permit the implementation of an action plan to correct a tendency toward the less than optimal use of medication.⁹

Source: Government of Quebec.

The Pharmaceutical Industry in Quebec

According to the Conference Board, prospects for the Canadian pharmaceutical industry are fairly good,¹⁰ despite a decrease in investment in that sector. Sales are increasing, and the signature of free trade agreements with Europe¹¹ will boost exports. The industry's contribution to Canada's GDP currently stands at \$5.4 billion (in 2007 dollars).

The industry also makes a unique contribution to Quebec's prosperity. According to KPMG-SECOR, the life sciences sector supports 40,000 jobs in Montréal, which puts it in sixth place among important life sciences cities in North America.¹² The industry represented 1.5 per cent of Quebec's GDP in 2013.

9 Gouvernement du Québec, *La politique du médicament*.

10 The Conference Board of Canada, *Profil de l'industrie canadienne*.

11 Verbeeten, *CETA and Changes to Canada's Pharmaceutical Patent Regime*.

12 KPMG-SECOR, *Valeur économique de la chaîne d'innovation en SVTS*.

However, the industry faces numerous challenges—changes in research models, greater difficulty in obtaining funding, and new molecules that do not have the same potential as those discovered in earlier decades.

Given the importance of life sciences in Quebec, thanks to the strong involvement and support of private enterprise, the concentration of innovation in the hands of public authorities could have negative economic consequences.¹³

Establishment of the Institut national d'excellence en santé et services sociaux

Following an initial report on needed changes in the health care system in Quebec, and at the request of the Government of Quebec, Claude Castonguay tabled a second report in 2008 on the establishment of a provincial institute for excellence in health and social services. The Institut national d'excellence en santé et services sociaux (INESSS) was mandated, among other things, to manage the reimbursement of drug costs in Quebec, which was previously the responsibility of the Conseil du médicament.¹⁴

The main recommendation in this report was for the establishment in Quebec of a counterpart to the National Institute for Health and Clinical Excellence, known as “NICE,” which provides guidance and advice to the British health care system. The role assigned to INESSS was to analyze and review the basket of health care services in Quebec; its mandate was to recommend whether or not new medications should be placed on the reimbursement list.

One of the working group's recommendations merits special attention:

The working group emphasizes the establishment of a transparent and public deliberative process, the development of a research function, and the need for cooperation among the various players in the health care sector.

13 Montmarquette, Boulenger, and Castonguay, *Les risques liés à la création de PHARMA-QUÉBEC*.

14 Comité d'implantation de l'Institut national d'excellence en santé et services sociaux, présidé par Claude Castonguay, *Rapport du Comité d'implantation de l'Institut national*, 5.

The proposed procurement process is based on cooperation rather than negotiation.

This recommendation clearly sought better integration of innovation schemes into a continuous process. The recommended transparency meant a procurement process related more to dialogue than to the usual calls for bids. In an ordinary call for bids, the requestor defines the parameters but does not explain the reasons behind the requirement it seeks to satisfy. By communicating information in a more transparent way, the requestor provides data with which the contractor gains a better grasp of the requirement and can satisfy it using non-traditional solutions. As the working group sees it, the proposed process is based on cooperation rather than negotiation.

In Chapter 2 of the report, the need is stressed to make the pharmaceutical industry a partner with the future INESSS. In Chapter 4 in the section on lessons learned from Quebec, Canadian, and foreign experience, the desire of the authorities to stimulate innovation is already apparent. In other words, the desire for dialogue with health sector partners to promote innovation in Quebec's health care system was already to be seen in the working group's report.

In 2011, the Government of Quebec responded to the report by merging the Conseil du médicament and the Agence d'évaluation des technologies et des modes d'intervention en santé to form the INESSS. Previously, both organizations were responsible for analyzing procurement methods and approaches and approving or disapproving their incorporation into the province's health care system.

From its first strategic plan, one of the INESSS guidelines sought to generate applicable interdisciplinary and intersectoral scientific solutions. However, there was no indication as to how this was to be achieved. There is also less reference to transparency and dialogue in the agency's statement of principles than there was in the report that led to its establishment. There is little talk of private partners, and there seems to be a desire to work mainly within the public health care system.

Procurement Groups in Quebec

INESSS requires the pharmaceutical industry to register its products on the list of reimbursable medications it administers. Hospitals are also required to use group purchases, particularly for medical supplies.

Since 2014, integrated health and social services centres (IHSSC) have belonged to one of three purchasing groups. While these groups use all their resources primarily to obtain branded generic drugs, they are making increasing use of calls for bids to obtain innovative drugs.¹⁵

Calls for bids in Quebec generally target a large number of specific products, whereas in the other provinces, they usually concern broader product categories.¹⁶ Price remains the sovereign criterion in calls for bids in Quebec,¹⁷ whereas the point systems used in other provinces apply a variety of criteria.

The desire to reduce costs is laudable, but in so doing, IHSSCs are probably denying themselves access to useful innovations that generally reduce the costs of a given care episode. The term “care episode” means all the care provided to an individual in relation to an illness, from prevention to cure, and including any relapses. It covers costs related to hospitalization, medication, treatment, and so on.

If procurement budgets do not increase, calls for bids will target the least costly bids which, in most cases, do not include the latest innovations.

Changes in Procurement Management

As noted by Beaulieu and Roy,¹⁸ the establishment of the IHSSCs disrupted procurement management within the health care network, an area in which performance varied from region to region. In the same series of reports,¹⁹ the authors also point out that strict adherence to clear standards is the key to good performance in any procurement system. Extending best practices to all regions would likely be a first step in improving the procurement system used by Quebec’s health care network.

15 Bourassa-Forcier and Foucher, *Processus d'appels d'offres*.

16 Ibid.

17 Ibid.

18 Beaulieu and Roy, *Série logistique hospitalière*.

19 Ibid.

The bill is designed to change the way in which procurement groups operate.

Bill 81

Bill 81, tabled in Quebec's National Assembly in 2015, specifically addresses the procurement of medication within the public health system—outside the lists of facilities. It is designed to change the way in which procurement groups operate, by authorizing them to use calls for bids to obtain specific medications at a fixed price, or a medication belonging to a larger group. This approach makes registration on the list of reimbursable medications more difficult, since those unsuccessful in the call for bids lose the opportunity to position themselves as an alternative to the successful product.

The legislation came into force in June 2016, and could impede innovation. It seems that in this case, the health care network determines both the requirement and the solution. If market access is limited to a single supplier, however, the government becomes dependent on the supplier in question. There is a risk in the medium term of rising prices, because what amounts to a monopoly situation will offset the lower price obtained through the bidding process.²⁰

This brief overview of the procurement process within the provincial health care system indicates that it does not rely on market forces to promote innovation. It still relies on a model that is based more on reducing the cost of medication, and fails to take associated complete care episodes into consideration. When the costs of an entire care episode are taken into consideration, we find that the higher costs of medication can be offset by a reduction in costs in other areas of the care episode (e.g., no second hospitalization).

The Value-Based Procurement System

The existing procurement system in Quebec is focused on costs. However, value-based procurement could become an important instrument of change within the public health care system. Demographic and financial issues can in fact be resolved in part by a value-based procurement system.

²⁰ Montmarquette, Doulenger, and Castonguay, *Les risques liés à la création de PHARMA-QUÉBEC*.

Definitions of “value” in health matters vary depending on one’s point of view, essentially because of the differences between the priorities espoused by health care systems, patients, industry, and society. For patients, for example, it can mean accessible care that helps them stay healthy and improve their quality of life. For health professionals, it can mean safe, efficient, and cost-effective care delivery methods. Despite these differences, it is clear that generally, the value of health care has to be defined on the basis of costs, clinical outcomes, and their impact on patients.

Porter and Olmsted Teisberg’s definition of value—and the one chosen by the IdQ—is “outcomes that matter to patients divided by the cost to achieve these outcomes.”²¹ Exhibit 1 illustrates the concept. Value is measured over the entire patient treatment cycle.

Exhibit 1

Definition of Value in Health Care



Sources: Porter and Olmsted Teisberg; The Conference Board of Canada.

Taking the entire patient care cycle into account is generally reflected in the types of medical equipment, models, and services with which health care systems are equipped. A health care procurement approach that concentrates mainly on initial purchase costs is therefore shortsighted in many cases, since it “does not address the needs of patients and clouds the true cost of care.”²² On the other hand, the comprehensive approach using value-based procurement methods includes health care system performance and patient outcomes while validating long-term results.²³ Moreover, since procurement is central to the acquisition

21 Porter and Olmsted Teisberg, *Redefining Health Care*.

22 Gerecke, Clawson, and Verboven, *Procurement*, 5.

23 Gerecke, Clawson, and Verboven, *Procurement*.

In value-based procurement, price remains one factor among others based on quality.

of value, value-based procurement goes hand in hand with value-based care.

For manifold reasons, public decision-makers find it difficult to assess all available innovative solutions. To do so, they would need access in real time to all the information disseminated concerning innovations available in the marketplace. When procurement is based on a request for solutions, decision-makers define the problem to be solved but do not have to identify the solution, since it is the innovator community that does this. This approach allows decision-makers to access solutions that would never have been suggested to them, because they did not exist without a definition of the problem. It is therefore up to public decision-makers to let the market define the response to a problem.

Value-based procurement also enables public decision-makers and bidding firms to agree on a series of common indicators, such as cost reduction, improvement in clinical quality, patient outcomes, and the assessment thereof.

Value-based procurement methods have been adopted by stakeholders around the world. They have also been recognized by the European Union as a way of correcting the deficiencies of tendering systems based exclusively on cost. More specifically, the 2014 European directives on public procurement require European countries to accept the “most economically advantageous tender.”²⁴

In health care procurement, accepting the most economically advantageous tender means giving more significant weight to assessment criteria than it does to price. Such factors as quality, technical validity, accessibility, environmental characteristics, and innovativeness are explicitly identified and evaluated when preferable offers are defined. In value-based procurement, price is still a factor but is only one among others that are based on quality. This produces “a more holistic perspective for procurement that factors in quality, total costs across the product life cycle, and broader socio-economic

²⁴ Council of the European Union, *Council of the European Directive 2014/24/EU*.

considerations in the purchasing of medtech products.”²⁵ The statement is valid for the various care episodes treated with specific molecules.

While quality factors are not new inclusions in the definition of value, they have not been considered on the same basis as price in the health care value definition used in Canada. However, the Ontario Health Innovation Council (OHIC) recently proposed a value definition for innovative products and services based on three factors. (See Exhibit 2.)

Exhibit 2

Definition of Value of Innovative Products and Services



Source: The Conference Board of Canada.

OHIC believes that a proposed solution within a procurement system should also take into consideration jobs created, local private investment, patient access, and cost reduction. Reduced consumption of health care services, reduced readmissions, and better quality of life become essential factors in assessing solutions.²⁶

Impact of Value-Based Procurement in Health Care

In many respects, value-based health care procurement has a positive impact on patient health, system costs, and the economy in general. This type of procurement emphasizes the acquisition of solutions to complex problems, rather than cost-effective products. It thus helps to create value for patients, stakeholders, and society as a whole. It does so by promoting the development of suitably effective and lasting solutions, which stimulates innovation and has a positive impact on health outcomes for patients and the contributions of stakeholders.

²⁵ Gerecke, Clawson, and Verboven, *Procurement*, 5.

²⁶ Ontario Health Innovation Council, *The Catalyst*.

By its very nature, value-based procurement generates social and economic progress.

Patient Outcomes

Value-based procurement harmonizes with value-based health care by supporting innovation in patient-centred models. Such models are based more on prevention than on treatment. They focus on what patients experience when they have a health problem, not just on the problem itself.²⁷ In value-based health care approaches, consideration is given to patient outcomes achieved over the entire care cycle, with special attention to determinant factors in the health care equation, such as comorbidity.

According to Porter and Olmsted Teisberg, the entirety of outcomes resulting from patient care throughout the care cycle includes a set of independent health problems that are best treated in a holistic manner that involves multiple specialties and services.²⁸ Value-based approaches lead to effective health care in terms of both the management and the prevention of disease. Such approaches rationalize care delivery modes to improve and prioritize health outcomes for patients. They enable patients to receive care more quickly and in a holistic way, which makes them more effective.

Benefits for Stakeholders

While patient health is central to the delivery of value-based health care, it is not only patients who benefit from this approach. Innovative procurement practices also benefit health professionals, health care systems, and suppliers, albeit to a lesser extent.

Health Professionals

Approaches in terms of value-based health care delivery create value for health professionals by providing them with safer and more effective methods that offer better performance in care delivery. In the case of the Norwegian health authorities, for example, pre-tender testing of products by groups of stakeholders has enabled patients and health professionals

²⁷ Gerecke, Clawson, and Vergoven, *Procurement*, 5.

²⁸ Porter and Olmsted Teisberg, *Redefining Health Care*.

to benefit from safe and effective delivery methods, with an ultimate increase in user satisfaction.

The situation is different in the case of price-based procurement, which guarantees the lowest cost, but does not make it possible to test products and services and collect relevant comments before contracts are awarded.

Health Systems

When data on the results of health care delivery, services, and models are transparent, this puts pressure on lagging practitioners to do better, and on the best practitioners to retain their lead.²⁹ The Swedish example is illustrative.

When Sweden's national heart-attack registry [...] began publishing patient survival rates at the nation's 74 cardiac hospitals, as well as a quality index that tracks how well each hospital was complying with European clinical guidelines, [...] performers with the highest morality improved their quality scores by 40 per cent, decisively narrowing the gap between best and worst performers.³⁰

Transparency thus encourages clinical improvement, which is as important for the health care system as it is for the patients themselves.

Suppliers

Organizations that have been helpful in the transition to more holistic value-based care models are world leaders in the delivery of care to some groups of patients. Fresenius Medical Care, for example, a German supplier of dialysis machines, has expanded its operations over the last two decades to provide dialysis care, dialysis medication, and treatment for patients undergoing dialysis.³¹ It has recently sought to address other health problems, such as cardiovascular disease, foot ulcers, and depression, which often affect dialysis patients.³²

29 Prada, *Competitive Dialogue*.

30 Clawson and others, "Competing on Outcomes."

31 Ibid.

32 Ibid.

Through the integration of its downstream operations, and the development of a holistic model of care, Fresenius has become a leader in dialysis care. Using its integrated care model, Fresenius also supports patients throughout the treatment cycle for the disease. Patients consequently enjoy the benefits of flexibility and mobility, and relative comfort, which encourage them to persevere more readily in their treatment.

Impact on Society

Innovation

In health care procurement, "... a focus on low prices reduces innovation and discourages the adoption of new technologies,"³³ as shown by research conducted by the Boston Consulting Group (BCG). "Unsustainably low prices could make the market unattractive for smaller players or force suppliers to exit markets owing to large-volume tenders that effectively block supply for three to five years."³⁴

Emphasizing a holistic understanding of purchase value rather than initial purchase cost can improve competition and stimulate innovation over time. This is the result of value-based procurement, with the thought that what really counts for patients, and what should be the purpose of any health system, is to deliver quality care in a cost-effective way.³⁵

Sustainable Development

Value-based procurement is designed to improve the overall quality and sustainability of health care while reducing the costs associated with the delivery of more effective care. The initial investment in the acquisition of value-based medical technology can admittedly be significant, but the return on capital invested is often higher in the long term by comparison with traditional procurement methods based on the lowest bid.

In what is considered an innovation, surgeons who perform lumpectomies or partial mastectomies at the Mayo Clinic in Rochester, Minnesota, for example, work during the operation with the on-site

33 Gerecke, Clawson, and Verboven, *Procurement.*, 5.

34 Gerecke, Clawson, and Verboven, *Procurement.*

35 Ibid.

Frozen Section Pathology Lab to determine whether all the cancer has been removed. As a rule, “Such microscopic analysis of frozen-tissue samples can take 24 hours or more at some hospitals, but Mayo achieves it in, say, 20 minutes while the surgery is in process.”³⁶ Furthermore, while Mayo’s costs for surgery are higher in the short term, “the 30-day reoperation rate was 3.6 per cent at Mayo in Rochester, compared with 13.2 per cent nationally,” according to a study of five years of lumpectomy data.³⁷ Thus, while value-based procurement methods do not always yield short-term savings, they can generate long-term savings and improved patient outcomes through shorter hospital stays and fewer readmissions.

Social and Economic Benefits

In addition to providing sustainable care and benefits in terms of innovation, value-based procurement can have a significant indirect social and economic impact. As the health care system evolves, the health of the population also improves, particularly with respect to disease prevention and the treatment of chronic illness. This produces a healthier workforce, with consequent gains in productivity and competitiveness.

Innovative Alternative Systems

The following sections outline the best ideas on innovative value-based procurement practices, and highlight their benefits:

- Bundled Payments
- Hypothetical Patient Cases and Disease Registries
- Pre-Tender Product Testing
- Risk-Sharing
- Competitive Dialogue

³⁶ Lee and Kaiser, “Turning Value-Based Health Care Into a Real Business Model.”

³⁷ Ibid.

Bundled Payments

The Swedish Experience

In 2009, the Stockholm county council, which runs most of the city's hospitals, "established a formal system of value-based reimbursement for hip and knee arthroplasty. The county provides a fixed bundled payment that covers all activities and procedures—from the initial patient visit and diagnosis through surgery, rehabilitation and follow-up."³⁸

OHIC recommends a more strategic value-based approach that takes into consideration not only price, but also other measures of value such as reduced use of services (e.g., minimal readmissions to hospital), improvement in quality of life, and economic benefits.³⁹

Following a detailed analysis of cost episodes related to whether or not medication is taken, such payments could be incorporated into the Quebec health care system. In the reimbursement and cost-benefit analysis of medication, allowance could be made for reduced hospital visits as a result of taking the medication. In the context of the cost-benefit analysis, however, the Quebec public health system will have to collect the data and make them accessible to researchers.

Hypothetical Patient Cases

The Swedish Model

In 2012, Stockholm county council issued an innovative tender for wound care products that included three hypothetical patient cases, and "asked bidders to calculate the total cost of treatment for each. ... The calculation included the unit cost of wound care dressings, the number of dressing changes, staff costs for time spent changing dressings (hourly rates for nursing were provided), as well as transportation costs to and from patients' homes. The tender also considered the expected level and frequency of complications caused—or avoided—by using the suppliers' wound care dressings."⁴⁰ This approach to value-based procurement enabled the Stockholm county council to obtain a more comprehensive

38 Clawson and others, "Competing on Outcomes."

39 Ibid.

40 Gerecke, Clawson, and Verboten, *Procurement*, 8.

estimate of the cost, rather than an estimated unit cost, enabling it to choose a supplier whose price for the entire care cycle was reasonable.

This approach could easily be used in medication procurement systems, when more than one drug provides an adequate response to a care episode. The variable used should be the impact of the medication on the entire care episode, not just its cost.

Pre-Tender Product Testing

The Case of Norway

In 2011, a company owned by the four regional health authorities in Norway to coordinate public procurement issued a call for tenders for intravenous catheters. The tender specifications included “low levels of patient-reported pain as one of the award criteria, as well as other qualitative aspects such as ease-of-use and perceived safety in handling by the nursing staff.” Even more importantly, they called for “a two-month evaluation period, during which the products from competing bidders were tested in several hospitals.”⁴¹ Patients and nursing staff were invited to score the products in question, and their opinions were taken into consideration in awarding the contract. This approach to value-based procurement provided patients and health professionals with access to safe and effective care delivery methods.

Such testing could easily be replicated in Quebec, given the concentration of hospital research centres and the numerous pharmaceutical research companies operating in the province.

Disease Registries

Australia, Denmark, Netherlands, Sweden, United Kingdom, and United States

Some European countries, as well as the U.S. and Australia, “are using the comprehensive outcomes data collected in national disease registries to identify outliers and improve average outcomes.”⁴² These registries contain common outcome metrics that can be used by suppliers and

41 Ibid.

42 Clawson and others, “Competing on Outcomes.”

payers. Through this approach to value-based procurement, health systems can measure variations in treatment and outcomes, and identify best practices offering superior value for patients.

Unfortunately, data collection and data transparency remain fragmentary in Quebec's health system. The first step in taking similar measures in Quebec would be to make the provincial health system's data more accessible.

Recently, public authorities seem to have been showing a genuine willingness to correct the situation. Access to data for purposes of scientific research is one of the main recommendations of the Chief Scientist of Quebec in his 2015 brief to the Commission des institutions démocratiques du Québec.⁴³

Risk-Sharing

The Canadian Experience

A Canadian provincial health authority issued a tender in 2014 for approximately 22,000 pacemakers. "One of the critical award criteria was the expected median life span of the devices, including normal battery depletion As part of the tendering process, suppliers were asked to indicate the expected longevity of their devices under various usage scenarios [T]he contracting authority required suppliers to share some of the risk. If a device needed replacement before the end of the promised seven-year time period, the supplier would be obliged to pay the cost of the patient's replacement surgery."⁴⁴ Through this approach to value-based procurement, the risks and costs associated with cardiac devices and their maintenance were shared between health authorities and the supplier. It also served as a powerful incentive for suppliers to provide realistic life-span information on their products.

This arrangement has similarities to the partnership agreements contemplated in the policy on medication adopted in 2007. It would be helpful to expand such measures and increase their use to allow for the establishment of this type of procurement for medication in Quebec.

43 Le Scientifique en chef du Québec et les Fonds de recherche du Québec, *Orientations gouvernementales pour un gouvernement plus transparent*.

44 Gerecke, Clawson, and Verboven, *Procurement*, 9.

The Case of Sweden

In 2014, a Swedish hospital issued a large, 14-year tender for imaging services. “The tender’s criteria ... stipulated that the hospital wanted to procure imaging services—not simply pieces of equipment. The specifications covered the maintenance of technical standards over the entire contract period and included details related to service, upgrades, and replacement scanners.”⁴⁵ Through this approach to value-based procurement, the hospital was able to identify a supplier that could not only add value to the health care system by introducing innovative medical technology, but could also maintain value for the hospital and its patients during the contract period.

Competitive Dialogue

Competitive dialogue is increasingly regarded as a solution compatible with existing regulatory frameworks. It has been in place since 2004 within the European Union,⁴⁶ and allows public authorities to communicate with potential bidders during the tendering process. It is particularly effective when the authorities have a clear idea of the problem they wish to resolve and the expected outcome, but do not know how to go about it. Competitive dialogue enables the authorities to make a better assessment of the methods proposed.

The Netherlands Experience

In 2013, the Medical Centre at Erasmus University in the Netherlands issued a call for tenders based on competitive dialogue to determine the best solution for disinfecting hospital beds, with an emphasis on value for money. To that end, a multidisciplinary committee was formed of experts on logistics, environmental aspects, energy use, and so on. The committee conducted a brief survey of suppliers and held meetings with them. The resulting dialogue identified the necessary criteria for the desired solution—cost, carbon footprint, and integration into the organizational strategy.⁴⁷

45 Ibid., 7.

46 Prada, *Competitive Dialogue*.

47 Extracted from Prada, *Competitive Dialogue*.

Possible Solutions for the Government of Quebec

Apart from the theoretical concepts associated with value-based procurement that have been developed over the past decade and more, why have such systems not been put in place, since they should theoretically reduce the costs of the health system?

In Quebec, cooperation among the various private and public partners in health care cannot be taken for granted. The innovation circuit is not as fluid as it should be. The government, suppliers of capital, companies, and in particular the universities still work in isolation. Yet the heavy concentration of life sciences enterprises in Quebec should facilitate synergy.

The industry model has also changed—innovation is no longer necessarily internalized within a single company. Processes for the creation of new products depend on more than one player. There is thus a need to redesign assessment processes to make them more fluid and transparent.

According to IdQ, the first step in setting up a system based on innovation would be to reduce the friction between the various stakeholders in health care innovation in Quebec, which can be attributed to, among other things, divergent objectives and a failure to share data.

Coordination of Purchasing Groups

The adoption of a shared vision of value enables value-based procurement teams to find “the ‘sweet spot’ where patients’ and customers’ perception of value is aligned with the commissioner’s [payer’s] desired outcome of the service.”⁴⁸ The main challenge in such an approach is “turning focus from traditional focus on output in procurement, creating a joint understanding of value and understanding the user perspective in value creation.”⁴⁹

48 Eklund and others, *Value-Based Procurement*, 4.

49 Ibid.

Shared value can be defined satisfactorily when the established compensation schemes directly reflect the relationship between the supply of products and services, and patient demand, in order to encourage more value-based competition.

Value-based purchasing, for example, is a central component of value-based procurement. It involves “strategies that link financial incentives to providers’ performance on a set of defined measures [... and aims] to drive improvements in quality and to slow the growth in health care spending.”⁵⁰

The development of shared communication strategies can also assist procurement teams in the early and continuing mobilization of key stakeholders within a transparent framework. This is possible when, for example, purchasing officers and project managers are involved from the initial stages in developing the offer up to the awarding of the contract. This enables procurement people to work with suppliers to develop solutions that exactly match patient needs, rather than being merely content with straightforward products at low cost.

Setting Up Calls for Proposals

The development of results-based procurement contracts enables procurement teams to encourage suppliers to deliver better products and service models. Such contracts also enable them to share some of the risks inherent in guaranteeing patients value-based treatment. This can be done by, for example, a shift from reimbursement of costs for services rendered to group payments for care cycles. The cost-for-services-rendered model encourages care staff to perform more individual care units, regardless of whether they are efficient or effective, and reflects the fact that we are paying them to take care of people who are ill, not to care for people who are well. The results-based model advocates a holistic approach to care and employs multiple forms of health care and social services to prevent disease and respond when it occurs. Results-based proposals also encourage active competition among suppliers, since taking performance into account becomes an integral part of the tendering process.

50 Damberg and others, *Measuring Success*, IX.

The application of judicious and relevant evaluation measures enables procurement teams making value-based purchasing decisions to consider health system performance and its social and economic impact. To that end, they define transparent and relevant metrics and ensure that results are monitored and reported on a continuing basis. In integrated and interconnected environments, it is important to share information about decisions on products, services, or a choice of model, and the related outcomes can help key health stakeholders to make informed, value-based decisions. Data assessment and transparency also encourage innovation by stimulating competition between participants in some situations, and allowing them to work together in other situations.

By virtue of its independence, INESSS has a role to play in this context. Consideration might be given to expanding its mandate, and incorporating evaluation teams, one of whose tasks would be first to develop dialogue between purchasers and potential suppliers. INESSS would then serve as the guarantor of confidentiality and independence in the health network's dealings with possible suppliers.

Data Transparency

The sharing of data on health outcomes does present its own set of challenges. First, the main participants in the health system must be prepared to measure and communicate relevant information, and be capable of doing so. Some hospitals, pharmaceutical companies, and device manufacturers are not equipped to conduct continuous evaluation, which limits their ability to profit from value-based procurement opportunities to provide benefits for patients. Second, if health care stakeholders are able to share data on outcomes there is a need to take into account how increased access to data could possibly impact patient privacy. Third, in the design of outcome evaluation mechanisms, it is important to prioritize and select the metrics that will have the greatest impact, since requiring clinical teams to monitor too many of them will overload them with an overly complex data collection burden, which could render the exercise futile and generate poor-quality reports. This is particularly important, because if data are to be genuinely useful, they have to be consistent and transparent.⁵¹

51 Damberg and others, "Measuring Success."

Steps That Can Easily Be Taken at Once

The medication policy authorizes partnership agreements. It is straightforward in the circumstances to redefine risk-sharing agreements for medication, as has been done in Sweden. In the same vein, it would also be possible to continue setting up pilot projects, as in Norway. Lastly, using its own analyses, INESSS could certainly develop calls for proposals based on the hypothetical patient cases with which Sweden has already experimented.

The role of INESSS is fundamental. The organization seems to be under-used, but it could easily become a linchpin in innovative exchanges between private and public partners. Its independence could also guarantee confidentiality in an arena in which exchanging data is not an option, but a necessity, in order to stimulate the development of new health care solutions.

There is nothing to prevent diversification of the models whereby the value of government-procured medication is analyzed. The research capacity of the health care network, combined with that of the various players in Quebec's pharmaceutical sector, can support the issuance of value-based calls for tenders that do not lead to supplier concentration. Solutions resulting from such exercises might be more expensive on paper, but would ultimately be less expensive in terms of overall care episodes, and could generate positive economic spin offs.

A value-based health care program holds promise in the long term for the quality and sustainability of health care. It would offer benefits for care staff, administrators, suppliers, and, above all, patients. However, value-based procurement, a key element in value-based health care, requires a major cultural shift on the part of health care system stakeholders. There is a need to ensure optimization of the value represented by drastic value-based innovations in patient care. The shift is possible if there is an effort to achieve a thorough understanding of the concept of value, and an assurance that system strategies match patient priorities. As Porter and Olmsted Teisberg have noted, outcomes are the ultimate measure of quality.⁵² Consequently, the cornerstones of value-

52 Porter and Olmsted Teisberg, *Redefining Health Care*.

based health care procurement are increased transparency in patient-centred outcomes, and popular awareness thereof. Understanding this, and measuring the actual costs of achieving such outcomes using various kinds of evidence, such as financial resources or time, will deliver value throughout the health care system.

Quebec has to control its health spending, but without reducing Quebecers' access to new medical technology. In its most recent budgets, the Government of Quebec has demonstrated an ability to control its spending, in particular through a reduced rate of increase in the cost of medication. This control has put the system under pressure, which could be relieved by more successful integration of innovations. Elsewhere in the world, value-based procurement methods have made it possible to integrate innovation efficiently, without explosive cost increases for public systems.

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APPENDIX A

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