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# Fostering Innovation through Procurement in the Healthcare Sector: The Danish Experience\*

Carolina Belotti Pedroso, Martin Beaulieu, Lars Dahl Allerup and Claudia Rebolledo

## Abstract

Healthcare institutions have been searching for ways to increase the value they deliver to patients and to society. Innovation is an effective way to boost this value, and procurement strategies are key to bringing innovation into healthcare organizations. However, hospitals are one of the most challenging organizations to implement innovations. Thus, this research highlights some lessons learned and the best practices of a healthcare organization in Denmark that has successfully implemented the value-based procurement approach.

## Introduction

There has been a growing interest in value-based healthcare in Canada recently (Fraser and Lavers-Sailly, 2019; Vanderheyden and Prada, 2020). This concept, which emerged during the 1990s (Tanenbaum 2016), achieves a better balance between patient benefits and the costs of providing care (Porter 2010). It allows innovative products to stand apart from others already established on the market but whose technical performance is stagnant. However, healthcare is one of the most difficult sectors when it comes to implementing innovation (Collins 2018). Some of the difficulties encountered when looking to foster innovation can be attributed to procurement management.

Traditionally, healthcare organizations have adopted two main procurement strategies. The first is known as consolidation and the other as standardization (Handfield et al. 2019). Both strategies are effective for achieving cost containment for commodity products (Nollet and Beaulieu 2003) but are not well-suited to fostering innovation. Therefore, there is a growing need to adopt value-based procurement to foster innovation in the healthcare sector (Porter 2010):

Value-based procurement sees a collaborative effort through strategically aligning suppliers' resources, products, and services to broad outcomes-based goals of the organisation. (Meehan et al. 2017: 231)

This strategy means that the "selection of suppliers encompasses mainly on objective and measurable evidence of past-performance, and not lower price or costs" (Pennestri et al. 2019).

Despite growing interest in this concept, value-based procurement is still in its infancy, even in developed economies (Bulens et al. 2018). There have been few successful cases in hospitals in several developed countries, but Denmark stands out. The Danish organizations responsible for the procurement activities of the public health sector have been actively engaged

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in a value-based procurement approach, concluding public-private partnership agreements in the mid-2010s. This paper offers lessons drawn from the Danish experience that can be insightful to Canadian decision makers.

This paper is structured in four parts. The first part compares the characteristics of the Danish and the Canadian healthcare systems. The second section explains the basic concepts of category management, which is a best practice implemented in Denmark to manage distinctive procurement processes and which provided a foundation for the adoption of value-based procurement. The third part of this paper deals specifically with value-based procurement. Finally, the last part provides reflections on the Danish experience.

### **The Danish Health System and Public Procurement**

The population of Denmark is 5.8 million (OECD 2020). The country's healthcare system is a national single-payer system. The government regulates, coordinates and establishes goals and guidelines for the national health policy, while the country's five regions are directly responsible for the hospitals. The health sector accounts for just over 10% of the country's gross domestic product.

Public procurement in Denmark complies with the European Union's tender directives. The rules ensure that private companies can bid on tenders in an open and transparent process. Denmark's *Public Procurement Act* entered into law on January 1, 2016, to regulate public procurement procedures (Wadmann and Kjellberg 2018). The law requires that all contracting authorities announce the procurement of supplies and services in accordance with the *Danish Tender Act* (Wadmann and Kjellberg 2018). Every year the Danish public sector spends around €40 billion on the procurement of goods and services.

In terms of volume, the procurement of goods and services is dominated by the municipalities. Danish regions and the central government procure less than the municipalities do. In practice, public healthcare procurement is carried out by five regional groups. These groups control public procurement in the health sector in their territory. For example, the Capital Region of Denmark is a group of 11 public hospitals that are responsible for more than 30% of all Danish healthcare procurement.

In contrast, Canada has a population of 37.1 million. Its health system is regulated by the Canadian Constitution and is organized according to federal, provincial and territorial governments. While the federal government determines the overall framework, the provincial and territorial governments are responsible for delivering healthcare services (Beaulieu et al. 2020). The country has a national public health insurance

program that is funded by the government. While the provincial health plans offered by the 10 provinces and 3 territories vary in some respects, they all comply with federal guidelines (Ridic et al. 2012). Similar to Denmark, in Canada, the health system is characterized as decentralized (Armstrong and Armstrong 1999). Physicians are self-employed, and they bill the provincial health insurance plans directly for the services they provide (Dhalla and Tepper 2018).

### **Category Management**

Denmark has been successful in implementing a value-based procurement approach. In order to understand its implementation, it is important to analyze the "category management" approach that has been used since the end of the 2000s by the procurement organizations in the Danish health sector.

Category management, as used in Denmark, is an adaptation of Kraljic's purchasing portfolio. The purchasing portfolio is built on two axes: the importance of the item purchased and the buyer's dependence on its suppliers' market. From the intersection of these two axes, four quadrants emerge (Nellore and Soderquist 2000), and different purchasing strategies are defined for each quadrant.

Category management moves away from a matrix logic where the organization is limited to only four possible categories of purchases. At Corporate Procurement in the Capital Region of Denmark, there are 12 to 15 categories, with each category having multiple subcategories. For example, the orthopaedics category contains subgroups such as knee implants. The buyer, or the category manager, focuses on one to two categories at most because each manager must stay abreast of news and advances for the category, including the development of new technologies and market trends with suppliers (mergers, acquisitions, etc.). Such updates are conducted quarterly so that category managers remain aware of the most recent developments. Category managers must also improve their understanding of the clinical uses of products and equipment in their category.

For each category, the suppliers' market is studied to find the most suitable suppliers for the organization's needs. This may, at first glance, seem quite a normal goal for procurement management. Category management makes the buyer take the supplier's needs into consideration. Thus, it basically becomes a marketing tool, in which the buyer needs to assess how attractive it can be to the supplier. Conversely, the category manager will avoid certain suppliers if their relationship is not sufficiently strong.

### **Value-Based Procurement**

In 2016, the Regions of Denmark launched "The Danish Value-Based Health Care Initiative" (Allerup 2020). The

following year, 2017, all five administrative regions implemented elements of value-based healthcare at the departmental, hospital or regional level to explore the effects on patient outcomes and costs.

Under an agreement reached between the Danish Ministry of Finance and the Regions, each party discusses its priorities on a yearly basis. Due to the beneficial results observed in previous years, in 2018 an agreement was established supporting the adoption of value-based healthcare.

Traditional purchasing agreements are generally established for two to four years. Value-based procurement's main strategy involves searching for a long-term partnership with suppliers, focusing on the following: better outcomes for patients, hospitals and the society in general; technology development; risk sharing; and cost reduction based on a total cost of ownership approach. These agreements are often valid for longer than four years (often five to seven years and sometimes even 10 years). This type of agreement is well-suited to "strategic items," where hospitals and suppliers are interdependent and where the products are either customized or are leading products on the market. These items also represent a high level of importance for the organization because of the very few suppliers available, high procurement complexity and switching costs and risks. As a classic example of strategic items, we can cite physician preference items (PPIs), which include surgery implants – such as orthopaedic implants – and medical devices used in the operating room.

### Value-based procurement's main strategy involves searching for a long-term partnership with suppliers ...

Traditionally, public procurement has quite rigid tendering specifications, in which suppliers must be as cost-effective as possible. The public sector has limited resources that are not always easily available, and besides this fact, cost containment is an important goal in this sector (Miller and Lehoux 2020). Pennestri et al. (2019) reminded us that "the purchaser does not set minimum product requirements throughout suppliers' selection process." Thus, it is not just the price that determines the winner of a tender: the most expensive offer could win as long as it creates more value from a socio-economic perspective for patients and the healthcare system. Obtaining better outcomes at the same or a lower cost is a very central element of the value-based procurement concept.

Instead of focusing only on costs, the procurement working group looks for models that emphasize value creation through a strong partnership among healthcare payers, hospitals and industry (Meehan et al. 2017). In this way, it is not just the price and the technology of the individual equipment that are evaluated. For instance, if a more expensive implant can reduce the patient's length of stay in the hospital from two weeks to

one week, it adds value to the cycle of care and therefore, under this perspective, should be purchased.

The Capital Region of Denmark's initial goal was to create a steady pipeline of projects based on the platform of a new department: Procurement Development and Strategic Partnerships. A central element of the new department's strategy was to use value-based procurement and public-private partnerships to leverage value-based healthcare and innovation. Phase one (2017–2018) consisted of three projects; phase two (2019–2020) contained another four projects; and phase three was designed for 2021 with an additional five projects. The COVID-19 pandemic put spokes in the wheel of the initial schedule, delaying phase three. The new procurement strategy is centred on putting more innovative technologies into the hands of the public healthcare system. This means, among other things, the start-ups that want to introduce a technology but are not yet financially established have a better chance of becoming suppliers. This is an effective strategy that facilitates the creation of public-private partnerships. Thus, in the period of 2017–2019, seven projects were submitted to the Regional Council, resulting in seven large-scale innovation partnerships.

These partnerships were launched to solve clinical bottlenecks, such as a lack of specialized clinical personnel (radiologists, oncologists, etc.), in order to better cope with demographic changes in the region's population. Of those seven projects, three were initiated by a hospital, two were launched by suppliers and two were promoted by Procurement Development and Strategic Partnerships itself. More projects had been proposed but for varied reasons had been rejected or moved to phase two or three. This prioritization may be explained by certain conditions, such as lower levels of organizational or industry maturity, in which there is a lack of leadership. For example, it is critical that hospitals have a clinical leader to ensure the project's success. In addition, because the purchasing department must coordinate procurement partnerships, it should be allocated more decision-making power.

Another barrier to this project was an aversion to developing single-source providers. This can mean that when a contract is renewed, only one supplier is available to fill its conditions. Because the supplier market for special healthcare products is small in Denmark, it is necessary to search for potential suppliers. The healthcare organization looks at not only the products but also the training offered by the suppliers for using new equipment and other support services. Under these conditions, the agreement reached may contain clauses that would ensure that technical data would be published during the next call for tenders to secure a larger number of suppliers.

The team responsible for partnership projects from the department of Procurement Development and Strategic Partnerships consisted of three people. These partnerships were concluded in two to eight months.

## Lessons Learned

The Canadian healthcare system has many similarities to the Danish one, which suggests that the concepts implemented in Denmark can easily be adapted to the Canadian context.

In order to carry out these projects, buyers have drawn on traditional procurement skills, such as those associated with negotiating, contracting and managing projects. However, entering a strategic innovation partnership with suppliers requires further efforts. The manager should present a very good understanding of clinical processes and technology for the entire cycle of care to identify areas where value can be created. This person must be able to promote the market, an even more critical skill for a small country such as Denmark. Buyers should attract suppliers to the national market, which is a challenging task considering the current global operations scenario involving scarcity of some medical supplies due to the COVID-19 pandemic. Other studies have pointed to the importance of developing new skills to better support innovation in the contracting process (Crisan 2020). To this end, we must not overlook the implementation of category management, which made it possible to introduce new management practices with buyers and to develop new insights that were useful in the perspective of value-based procurement. Categorizing supplies according to their features is essential to manage them more closely as each type of supplier requires different procurement strategies. The lessons learned from Procurement Development and Strategic Partnerships have been a central inspiration for recent Danish initiatives such as a public–private partnership for value-based procurement, hosted by the Danish Ministry of Business, Industry and Financial Affairs. The lessons learned in the Capital Region also inspired the other Regions to establish a new national board to support the scaling of value-based procurement. Finally, the work done by the Capital Region served as an inspiration for a new national life science strategy (Danske Regioner 2020), which was published in April 2021, focusing on, for instance, value-based procurement and public–private innovation.

The definition of value combined with the organizational maturity issue, as selection criteria, are two concepts that overlap with the conclusions of a recent international study. It presented case studies conducted with 15 healthcare organizations around the world, and it aimed to understand the purchasing process of PPIs, such as defibrillators or implants (Beaulieu et al. 2021). While many stakeholders questioned

the concept of value, this study concluded that value-based procurement initiatives succeeded when clinical data had already existed for several years. Value-based procurement may not bring immediate results, but it can ensure many benefits and cost savings in the near future (Pennestri et al. 2019).

Six of these seven projects were still in place at the beginning of 2021, while one had been cancelled for a more traditional supplier management strategy. There are many indicators for monitoring the projects' performance, but this component will require further improvements in the coming years. Again, according to Beaulieu et al. (2021), this monitoring deserves substantial adjustments as, of the 15 documented cases, few implemented satisfactory performance indicators. More generally, performance management in the procurement process is an area that deserves improvement. In this context, we need to develop a common language and find a common definition of value. In April 2021, the Danish government launched a new national life science strategy for 2021–2023 (Ministry of Industry, Business and Financial Affairs 2021). The new strategy emphasizes the need to develop a data-driven model for value-based procurement, and it issues a three-year grant for the development of this model. Finally, the strategy secures substantial funding to support the scaling of innovative procurement in the five healthcare regions. The organization showed higher maturity regarding metrics to measure the procurement process as compared to other organizations in the research. Performance indicators are an essential part of a value-based procurement approach. It is important to measure results considering the full cycle of care (Porter and Teisberg, 2007). Examples of metrics include total cost of care, length of stay and patient safety, among others (Damberg et al. 2014).

Finally, despite the years spent developing this value-based procurement strategy, there is no single recipe or best way to implement it. There are many key stages, but it seems that each step has its own characteristics, which are difficult to identify through a standardized approach. Thus, other organizations wanting to take the path of value-based procurement should follow a learning process to develop best practices. However, success requires C-suite-level support, political commitment, strategic investments and strong procurement skills to take the lead. It is worth mentioning that category management plays a vital role in the successful procurement strategy adopted by this organization. It provided the basis for, and paved the path to, implementing new ideas and concepts. **HQ**

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