



ADVANCING HEALTHCARE IN ONTARIO

**OPTIMIZING THE HEALTHCARE
SUPPLY CHAIN - A NEW MODEL**



**A REPORT FROM THE HEALTHCARE SECTOR
SUPPLY CHAIN STRATEGY EXPERT PANEL**

Submitted to the Government of Ontario
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INTRODUCTION TO THE HEALTHCARE SECTOR SUPPLY CHAIN STRATEGY EXPERT PANEL

In April 2016, the Ontario Government appointed an expert panel to develop the *Healthcare Sector Supply Chain Strategy*. The panel grew out of the Ontario Health Innovation Council’s recommendation to accelerate the shift to strategic, value-based procurement.

Our mandate was threefold:

1. To recommend a province-wide supply chain strategy for healthcare.
2. To analyze the strategic procurement structures now in place (including Shared Service Organizations and Group Purchasing Organizations) to understand their current capabilities and opportunities.
3. To recommend a model for healthcare providers to participate with associated costing and savings, along with an implementation plan. The Expert Panel Terms of Reference are available as Appendix A.

As panel members, our backgrounds and experience touch on the healthcare sector supply chain at many points. Individually, we are healthcare administrators, experts in strategic procurement and innovation, and suppliers to the sector. Our complete biographies appear as Appendix B.

We wish to acknowledge that, from the very start of the report, modern supply chains are complex systems. They require a high degree of coordination among a wide range of participants to deliver rigorous control over products and services. This is unquestionably the case for the healthcare sector. Patient care is delivered across a wide array of healthcare organizations and settings, all of which must be smoothly and seamlessly coordinated.

We recognize the high level of dedication and expertise among those who work throughout the healthcare sector. We are thankful for the opportunity to support them and the people they care for by advising on how to create a more effective and strategic healthcare supply chain. We view this work as part of a broader transformation to patient-centred, value-based healthcare. Please see Appendix I—Acknowledgments.

We greatly appreciated the time and energy that went into the various submissions and presentations that we received. To read more about these contributions, see Appendix C—Stakeholder Engagement and Research and Appendix H—Summary of Research and Publications.



Executive Summary

World-class healthcare systems are supported by seamless, integrated and value-based supply chains. Going beyond the procurement of goods and services, robust supply chains deliver value and contribute to improved quality of patient care.

This report sets out a strategy to transform Ontario's healthcare supply chain over the next three years. This strategy will build on successes to date. It will support and shift care closer to home. Most important, it will improve patient experience and ensure access to high quality products and services at each and every point of care.

With this strategy, the panel also believes Ontario will not only return substantial savings back to patient care; the province will also be positioned to improve quality and alignment across the many "silos" that still exist in our healthcare system. The province can achieve these advances through greater engagement of healthcare providers, the adoption of value-based procurement and advancement of innovative solutions.

Based on our analysis, the total addressable annual spend related to the procurement of goods and services for Ontario's healthcare providers is now over \$12 billion. Once our recommendations are fully implemented across the healthcare system, we estimate that the savings we have quantified will progress up to \$500 million a year. In addition, there are further savings opportunities we have not quantified. These savings will then be available for reinvestment in patient care and the health and well-being of Ontarians.

To this end, the panel has 12 recommendations to transform Ontario's healthcare supply chain. These recommendations are grouped into five interdependent themes (see Figure 1).

1. AN INTEGRATED ONTARIO HEALTHCARE SUPPLY CHAIN

Ontario needs to consolidate its highly fragmented supply chain infrastructure and organizations into one seamlessly integrated organization (referred to as the "Entity" in this report). The new Entity must be

independent, transparent and publicly accountable. Primarily funded through fees, it will serve all publicly funded healthcare organizations. The new Entity must develop leading supply chain capabilities, provide service across Ontario and be responsive to clients.

One entity is required to fully realize the benefits we have identified. Further, the new Entity must be responsible for delivering all the strategic and operational aspects of an effective supply chain. This advanced supply chain will provide:

- strategic sourcing and category management
- purchasing and ordering
- contract management
- logistics and inventory management
- vendor performance management
- accounts payable
- back-office information technology services.

With a phased implementation, full participation should be mandatory for publicly funded hospitals, Local Health Integration Networks (LHINs), and home and community-funded service providers.

The opportunity to benefit from a leading supply chain service must not be limited to large and academic health organizations. Rather, this opportunity to improve patient outcomes, while delivering higher quality and more affordable care, must be made available across the system equitably. The new Entity must also foster quality improvement, integrated care and continuous improvement through a customer service ethos and establish mechanisms to gather feedback on product usage, quality and waste.

Other healthcare providers – such as long-term care homes, crown agencies and transfer payment recipients – should also be encouraged to join the supply chain. Future onboarding could extend to Emergency Management Services, Public Health, government vaccine and emergency stockpile warehousing, primary care providers and other healthcare partners.

2. PATIENT AND CLINICAL FOCUSED BUYING DECISIONS

For services where there are emergent and advancing medical technologies (such as patient monitoring and cardiac), the panel recommends that the new Entity establish clinical and medical expert “advisory panels.” Insights from these panels will support tendering approaches and evaluations geared to improve patient experience and outcomes.

3. NEW APPROACH TO PROCUREMENT

The panel advocates that Ontario invest significantly, supporting two broad directions here:

a. Value-Based Procurement: Supported by robust engagement of the sector, clinicians and vendors, the new Entity must strive toward the adoption of value-based procurement. To this end, the new Entity must invest in leadership capabilities and performance measures to develop a philosophy of purchasing for value, not just price and technical specifications.

To be clear, the panel is not calling for more of the same practices Ontario has adopted in the past. We are calling for a new business approach, a new philosophy and new competencies. In other jurisdictions, purchasing for outcomes, life-cycle or patient experience have been seen to generate significant results when used appropriately.

The panel also recommends that the Government of Ontario provide greater clarity regarding existing procurement guidelines to encourage greater adoption of value-based procurement to acquire innovative solutions in the healthcare system.

b. Building Better Care Through Innovation: Ontario acknowledges that the province is delayed in introducing innovative products and models of care, as reported in the Ontario Health Innovation Council (OHIC) report. In addition to engaging clinical panels and establishing new clinical competencies, the Entity needs to develop new tendering approaches and accelerate assessment and evaluation to speed the introduction of innovative technology in Ontario.

4. PERFORMANCE, VALUE, QUALITY AND IMPROVED SAFETY

Key to the new Entity’s performance will be its measurable progress toward outcomes. To support this direction, the panel recommends two overarching technical initiatives:

a. The Entity should build sophisticated business analytics capabilities and tools and report the information and insights gained with its clients. This will enable the Entity to provide feedback on the performance of its products and services and be accountable through public reporting to the participants and the taxpayers of Ontario.

b. The healthcare sector should adopt an internationally recognized bar coding standard to further enhance patient safety and enriched business analytics. This standard should provide full traceability of products, including pharmaceuticals, to the patient.

5. MOVING FORWARD (IMPLEMENTATION)

The panel recommends that the Government of Ontario appoint a 12-month Transition Board. This Board will be tasked with the following responsibilities:

- establish the new Entity’s governance structure
- recruit the transition leadership team and new independent Board
- identify priority contracts to jointly tender
- transition existing assets and services
- develop a strategic business and capital plan.

To ensure that the full benefits of the proposed model are realized in a timely manner, it is recommended that the government issue the necessary policy direction to ensure that any initiatives undertaken by the existing Shared Service Organizations, hospitals or other key players in the transition period are fully consistent with the direction set out in this report.

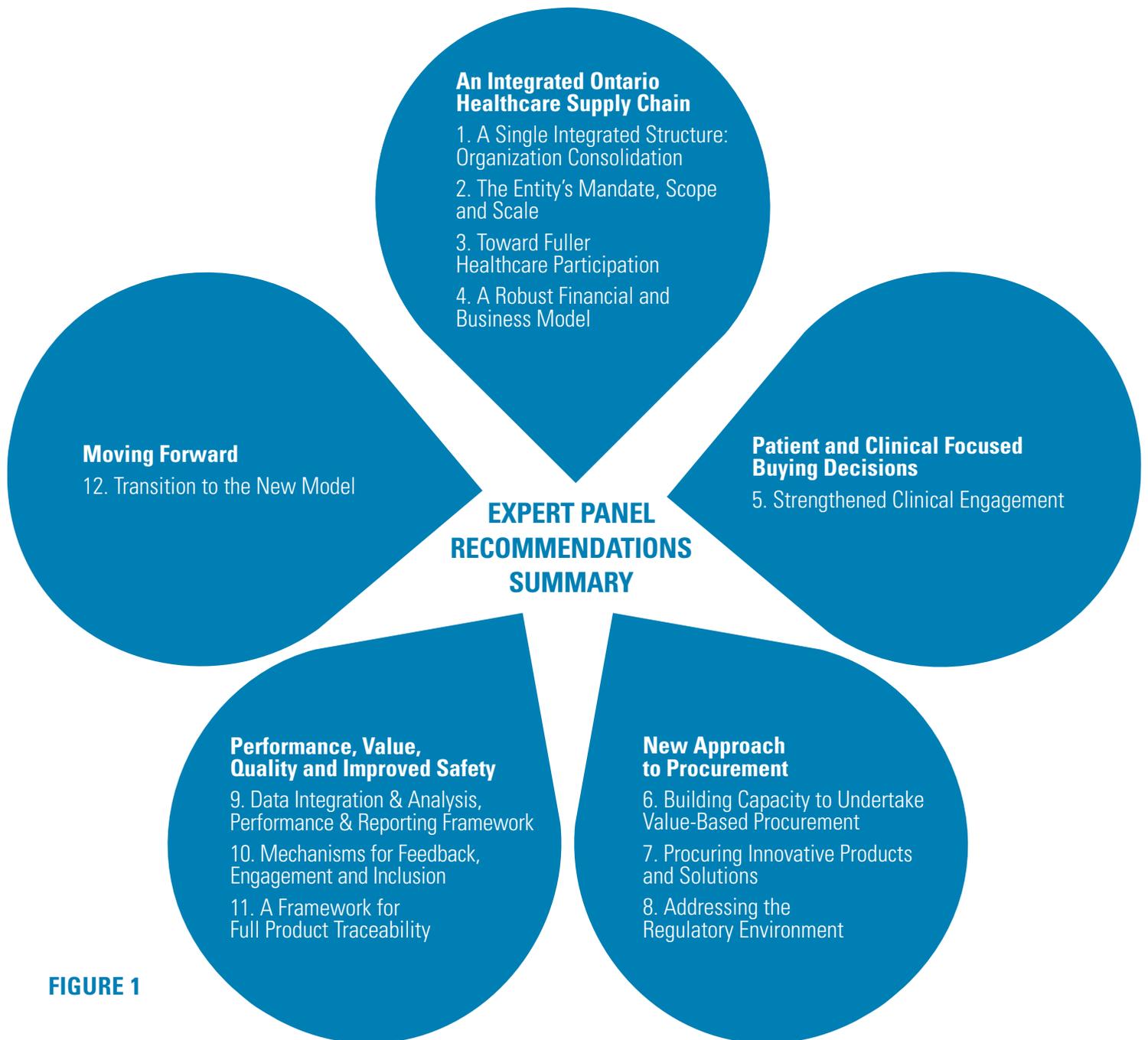


FIGURE 1



SECTION 1

Introduction: Why is a Healthcare Supply Chain Important?

This report presents a vision and recommendations to transform the province's healthcare supply chain, strengthen Ontario's healthcare system and enhance patient outcomes. The panel believes significant new efficiencies are possible, which can free up resources to be reinvested in healthcare services.

Our review of best global practices have shown that advances in healthcare supply chain processes and methodologies can improve patient outcomes through innovation and a total patient perspective.

Ontario's publicly funded healthcare system is both complex and interdependent. Hospitals, long-term care homes, home and community service providers, provincial agencies, ambulance and paramedic services, public health and primary care all play a critical role in the care of Ontarians.

Each relies on medical and non-medical supplies and services to provide patient care and meet the healthcare needs of Ontarians.

An effective and integrated supply chain is a key enabler of patient care

Strong supply chains do more than source and supply medical and non-medical products. A leading supply chain system can anticipate technological change, contribute to healthcare innovation as well as lower healthcare costs and improve patient outcomes. It also does this via strong clinical and patient engagement supported by a rigorous, informed and quality-based approach to product evaluation.

Each step in the supply chain of healthcare has a fundamental impact on the ultimate user – the patient.

Each inefficient activity along the patient's journey can add interventions, as well as additional costs to the system. Inefficiencies can include:

- too much or not enough inventory of medical products
- lack of alignment across healthcare providers
- lack of use of international standards
- use of different products purchased by different service providers.

These inefficiencies may result in delayed access to care, disrupt patient progress and preclude effectively tracking products from manufacturer to patient.

We envision a new supply chain system that will advance healthcare for people in Ontario in a number of crucial ways. Our vision is of a system that:

- contributes to better and safer patient services
- supports integration of services across the continuum of care
- enables the shift in care closer to home
- improves patient experience
- ensures that high quality, high value products are available when required
- strengthens innovation in the province.

To that end, Ontario should implement a system-wide supply chain management model to ensure delivery of quality and standardization of products and services.

We believe these changes will mean that Ontario patients and their families will see more integrated and seamless care. Healthcare providers will have greater engagement in medical supply selection. Just as important, taxpayers can have confidence that their healthcare system is providing value for money.

To achieve this vision, the new Entity will need to invest in two main areas of change:

1. Consolidate the current supply chain assets across the province.
2. Develop capabilities that deliver better quality, greater access, and more integrated care.

Our detailed recommendations in Section 3 provide a plan to move forward with speed, efficiency and purpose.

1.1 HEALTHCARE SUPPLY CHAIN MANAGEMENT TRANSFORMATION: PROVINCIAL PRIORITIES

Healthcare is by far the largest provincial program. In fiscal year 2015-16, healthcare spending represented over 40 per cent of government expenditures. With a growing and aging population, managing the growth of this spending is critical to the province's financial sustainability. Reducing costs in this area would allow for reinvestment in patient care.

However, we recognize that sustainability does not mean simply getting the lowest unit price on a single item. Instead, the focus needs to be on ensuring that precious healthcare dollars bring greater value to the patient. This entails using the supply chain strategically to support more consistent care and better outcomes, as well as adopting a system-wide lens.

We understand the need for change and we deliberated carefully how best to align our recommendations with provincial priorities and initiatives. The government's stated transformation and strategic priorities guided our work. For example:

1. In 2015, the Ministry of Health and Long-Term Care released its *Patients First: Action Plan for Health Care*. The plan sets out bold commitments to transform the healthcare system by putting patients and the people around them, like their families, at the centre of the system¹.

Limitations and barriers within our current supply chain model include:

- a fragmented, decentralized, voluntary system, resulting in variances in service offerings and in participation and availability across the healthcare system
- limited opportunities to benefit from group purchasing at a provincial scale
- lowest price or individuals' preferences predominantly drive product selection
- limited engagement between sourcing organizations, healthcare partners and suppliers, precludes value-based procurement (VBP) practices, thereby limiting system benefits in healthcare, life-cycle and innovation procurement
- no centralized data management and analytics to support the optimization of supply chain system and healthcare assets
- practitioners not equipped to support complex procurement needs
- limited human resources capacity to undertake VBP.

¹ *Patients First: Action Plan for Healthcare*, 2012. See www.health.gov.on.ca/en/ms/ecfa/healthy_change

One of Ontario's goals is better quality of care through more integrated delivery mechanisms. Sourcing and procuring can play a key role, connecting across healthcare providers to help eliminate unnecessary changes in products and services, as patients move from one part of the system to another.

2. The Patients First Act also integrates community care more closely with the Local Health Integration Networks (LHINs). This is to provide better coordinated care within and across local geographies, ensuring a smoother patient experience and transition.
3. Ontario Health Innovation Council's report *The Catalyst: Towards an Ontario Innovation Strategy*², recommended enabling and facilitating greater adoption of innovative products, services and solutions linked to healthcare outcomes. The Office of the Chief Health Innovation Strategist is focused on removing and breaking down barriers that restrict small and medium enterprises and other innovators from participating in Ontario's healthcare market. Our report advances the recommendations from the innovation strategy.
4. The government is also working to enrich the information technology that directly supports patient care needs. The *Hospital Information System Renewal* initiative can be leveraged to closely integrate clinical care needs from the date of a patient's admission to discharge.
5. As we were undertaking our review, Ed Clark, Business Advisor to the Premier and Chair of the Advisory Council on Government Assets, was asked to assess the value and opportunities created through digitalization of Ontario's healthcare system. His report, *Value and Opportunities Created by Ontario's Digital Health Assets*, recommends that Ontario establish a Centre of Excellence on Procurement and Vendors³ to healthcare partners. This step is fully aligned with the approach we have set out in this report.

² *The Catalyst: Towards an Ontario Innovation Strategy*, 2014. See health.gov.on.ca/en/pro/programs/ochis

³ *Value and Opportunities Created by Ontario's Digital Health Assets*, 2016. See www.ontario.ca/page/value-and-opportunities-created-ontarios-digital-health-assets



SECTION 2

Toward a Strategic and Patient-Centred Healthcare Supply Chain

Patients and taxpayers expect our publicly funded healthcare system to be seamlessly integrated, providing access to the highest quality of care.

An advanced supply chain provides a province-wide healthcare strategic focus, built on best practices of governance, accountability and operational excellence.

2.1 GUIDING PRINCIPLES

As we reviewed our Terms of Reference as a panel and considered what we had been asked to deliver, we determined that we had the opportunity to design an advanced supply chain management system able to be a strategic healthcare partner. As such, the system would contribute to innovations around patient experience. It would enhance patient care quality and safety, and it would support continuous improvement.

We developed four principles to guide our recommendations and advice.

1. Seek to **continuously improve** the quality of care while supporting financial sustainability.
2. **Integrate** the supply chain system in a way that is cohesive and transparent.
3. **Leverage** scale and best practices from Ontario, across Canada and around the world.
4. **Foster and apply innovation** and enhanced business practices for continuous clinical and quality improvement.

We then considered the model for an Ontario supply chain system that could deliver on these principles. We identified the following drivers that led to our major recommendations.

- Engage clinicians throughout the supply chain cycle.
- Use value-based procurement where appropriate to improve healthcare outcomes.
- Address duplication and overlap by consolidating and integrating supply chain management.
- Ensure as many healthcare entities as possible benefit from the new supply chain.
- Ensure value is achieved yet support a healthy Ontario healthcare marketplace where multiple vendors are in the market for strategic products where applicable.
- Identify supply chain and related back-office savings opportunities for reinvestment in patient care.

These drivers are linked to each of the guiding principles, aimed to leverage the supply chain to support better integrated healthcare services. For examples of procurement that leads to improved healthcare outcomes, see Procuring for Improved Patient Care on the following page.

Delivering integrated, collaborative and strategic shared services to Ontario's patient-centred healthcare sector

The current healthcare supply chain delivery model has been based on voluntary participation and can be credited with achieving many improvements. However, this voluntary and decentralized approach has led to certain drawbacks. These include a high degree of variability, fragmentation and under-achievement of the supply chain potential for the province.

There is no question that the current model could deliver further incremental improvements in Ontario's healthcare supply chain. Indeed, the appointment of this panel has inspired new partnerships and consolidation of Shared Service Organizations (SSOs) and Group Purchasing Organizations (GPOs).

However, we heard from a wide range of interested stakeholders that the current model is unequipped to deliver the advanced supply chain services Ontario's complex healthcare system needs. The panel reviewed and evaluated various alternate models, both in healthcare and in other sectors. We found that leading edge supply chain models shared certain common features:

- end-to-end services from planning to payment
- data and analytics as core aspects of their operations, providing clients and vendor feedback loops for continuous improvement
- comprehensive engagement of clinicians
- strong emphasis on procurement approaches that favour value rather than cost
- robust performance indicators and outcomes measurements.

For an example of how this can revolutionize patient care, see *Integrated Care for Better and Faster Healing* (page 15).

To achieve this in Ontario, our healthcare sector needs a mature supply chain organization equipped with size, scale and scope to lead business transformation and support improved clinical outcomes. This should build on the existing model with a forward-looking mandate that is both responsive to today's needs and able to grow toward tomorrow's healthcare requirements.

Procuring for improved patient care

Departmental budgets and patient outcomes are not directly aligned in Ontario and may sometimes be counter-intuitive. The result is purchasing decisions based on the local budgets of single healthcare providers, or even a single department.

This leads to procurement focused on cost over the potential value to people who receive care or the impact on the healthcare system as a whole.

An example is a hospital that procures surgical medical devices for a patient. In determining the requirements for the device, it may not consider factors that could improve patient care. These include faster recovery, fewer re-admissions as well as down-stream costs to the healthcare system related to long-term care or home care.

A patient example: Home care monitoring technology alerts home care service providers about a potential problem with a patient. The costs of the technology would be borne by home care providers, but the benefits would be realized first by the patient in better care and second, by hospitals due to diverted emergency medical services.

Improved collaboration in purchasing decisions between healthcare providers through the patient's journey will improve care and healthcare outcomes.

2.2 WHAT WE HEARD: RECOGNITION OF STAKEHOLDER ENGAGEMENT AND CONSULTATION

The advice contained in this report reflects the thoughtful insights provided by the many health sector and supply chain stakeholders, as well as perspectives from other provinces and countries.

What the panel heard reaffirmed our principle-based approach and helped us formulate our recommendations. The following section is not exhaustive but rather, illustrates how the sector informed the principles that guided our deliberations.

More details about our research and engagement process can be found in Appendix C—Stakeholder Engagement and Research.

We heard consistently that the entire supply chain needs to be focused on patient outcomes, quality and safety.

In our consultations, we received feedback that considered not only the gaps in the current system but also the opportunities presented.

Improving Patient Outcomes, Quality and Safety

Many healthcare service providers noted barriers to providing higher quality care and more robust safety protocols with respect to procured products.

Some of those barriers related to lack of product alignment throughout the patient journey. For example, patients can be discharged from hospitals with one set of wound care supplies. These are then changed and discarded by home care service providers in favour of alternative products.

The panel is convinced that the quality of care can be improved by standardizing medical and surgical products. Unless clinically determined that variations in products improve care and healthcare outcomes, patients need consistency in care, consistency of products and elimination of gaps from one point of care to the next.

In addition to reducing variation, Ontario also has the opportunity to leverage today's best tools to improve safety. The province has lagged behind other jurisdictions in the use of product description standards and bar codes to track products to the patient. A system supported by full traceability of products leads to higher quality and safety in all healthcare settings.

An advanced supply chain strategy offers an opportunity to align supply chain management with the delivery of stronger patient-centred services and better integrated care across the system – from acute care to home care.

Listening to Patients

Healthcare providers called for the use of patient feedback to support a more robust evidence-based approach in choosing products and services. The feedback would include assessment as to how solutions are benefiting quality and safety.

Long-term care homes already use resident surveys to gauge whether acceptable levels of safety and quality are being met. Hospitals have likewise incorporated patient feedback processes aligned with patient values. These initiatives could extend to healthcare products.

Engaging Clinicians and Providers

Healthcare providers and suppliers both suggested that supply chain solutions are essential to improve quality of care and safety. They told the panel that this can be achieved by designing new procurement strategies that focus on quality of care and innovation. These strategies must reflect today's enhanced clinical perspective that increasingly promotes sourcing integrated suites of products, services and solutions.

Improving quality and safety requires a better understanding of products being used today and incorporating clinician perspectives into the design of new Request for Proposal (RFP) planning and evaluation.

Leveraging Value-Based Procurement Linked to Care

A key design strategy is value-based procurement (VBP). This advanced strategy emphasizes solutions to achieve improved patient outcomes and reduce disconnects in the delivery of products and services. It involves making purchasing decisions based on overall value to the system (e.g., clinical outcome, life-cycle, quality, service and cost) rather than cost and technical factors alone. As distinct from traditional commodity procurement, VBP models stress quality and total cost of deployment over the life-cycle of the solution.

Where VBP has been successful in Ontario, the approach often required senior clinical and business leadership and engagement. Other jurisdictions have advanced further in adopting models that connect products to healthcare outcomes.

Bringing More Innovation into Healthcare Settings

Introducing innovative products and services into the healthcare system and supporting smaller innovative Ontario-based suppliers has been challenging in the province's healthcare supply chain. Large bundled RFPs with complex evaluation criteria can exclude smaller niche vendors from qualifying and participating in the procurement process.

Integrated care for better and faster healing

The need for wound care can be the result of surgical incisions, bed sores or other pressure-related injuries, and leg or foot ulcers. In the Ontario healthcare system, it is estimated that wound care costs \$1.5 billion a year.⁴

But the costs are more than financial: wounds reduce quality of life and open the door to infection, amputation and even death. As they are most common among older people, their incidence may rise in Ontario as our population ages.

Wound care is provided in a range of healthcare settings, including emergency departments, hospital units, long-term care and at home. As patients move from one healthcare provider to another, different products may be used from one setting to the next. The choice of wound care products matters as these may result in unnecessary pain, a longer healing time, or re-admission to a healthcare provider.

We can do a better job to align purchases across care settings and help people heal faster. Product selection should be based on seamless, appropriate, integrated care that improves patient outcomes.

⁴*Fewer Wounds, Faster Healing – Framework for an Ontario Wound Care Strategy.* Ontario Wound Care Interest Group, October 2012.

Once again, the panel heard that a strategic clinical and inter-disciplinary model for engagement throughout the supply chain cycle can ensure that businesses of all sizes will have opportunities to introduce innovative solutions and new care models into the system.

Achieving Greater Service and Supply Chain Integration

While it is important to enable access for smaller innovative suppliers to Ontario's healthcare supply chain, we also heard that there were opportunities for efficiencies and savings through better collaboration within the supply chain. This applies principally to aggregation of requirements for goods and services. In particular, Ontario can leverage IT systems to achieve greater integration and value to patients as long as meaningful data can be collected to link supply chain activities with healthcare outcomes.

Consolidating the Supply Chain Backed by Data

Through engaging public and private supply chain management organizations in other provinces and countries, the panel gained perspective on the types of healthcare supply chain models used to deliver greater value and improve patient outcomes. We considered their experiences and lessons learned, including a phased approach to designing and implementing a new healthcare supply chain model.

We noted a clear trend towards greater consolidation of supply chain resources, supported by a data-driven sourcing and delivery model with strong clinical engagement and feedback processes. Ontario is not alone in its drive to find greater efficiencies and achieve integration of care by improving the procurement of goods and services.

2.3 VALUE-BASED PROCUREMENT

A key recommendation of the Ontario Health Innovation Council (OHIC) report, 2014 (*The Catalyst: Towards an Ontario Health Innovation Strategy*), outlined the need for the province to accelerate the shift to strategic value-based procurement (VBP). This aligns with a global trend that emphasises using procurement processes to contribute to major improvements in healthcare services and health outcomes.

Other jurisdictions are reinventing healthcare services and enhancing the patient experience by implementing VBP. Strategic management of the supply chain, therefore, has become a major driving force in healthcare.

OHIC outlined that the current model in the healthcare sector has been highly focused on short-term savings. Although this approach can be helpful in controlling healthcare budgets year to year, it misses an opportunity to leverage procurement for broader system benefits.

The OHIC report concluded that VBP represents a strategic approach to procurement and sourcing that considers not only price, but also other measures of value, such as:

- improved patient outcomes
- reduced service utilization
- increased quality of life
- economic benefits.

The panel learned of examples that demonstrate how VBP is contributing to improving healthcare (see *Improved Care and Outcomes Through Value-Based Procurement (Catalonia, Spain)* on next page). VBP practices have taken various forms including:

- assessment of total cost of care delivery
- risk-sharing with suppliers to develop solutions focused on patient outcomes
- public/private collaboration for measuring results
- assessing patient-reported outcomes in tenders.

The panel clearly heard that there is an appetite to explore opportunities to integrate VBP into the Ontario healthcare system. By developing VBP expertise and encouraging broad participation of health leaders and clinicians, the province can develop the capacity at the scale that is required for the reinvention of the delivery of healthcare services.

Note that a compelling, shared definition of value will start with desired patient care outcomes (demand). The task is then to seek out or create opportunities to develop and supply innovative products, services and models to meet that demand.

The change required to achieve this future state should not be underestimated. Great attention to change management will be vital to achieve the pursued objectives and optimize supply chain in the province. It starts with procurement guidelines. While Ontario has the BPS Procurement Directive and supporting guidelines which do not prohibit VBP, other jurisdictions more clearly encourage the implementation of VBP approaches.

Tenders or procurement documents will also need to include robust evaluation metrics supported by health information systems that continuously monitor and report key outcomes. Ontario's healthcare system needs to invest in acquiring and nurturing the core competencies, skills and experience required to widely embrace and successfully implement VBP.

Since 2014, the European Union, for example, has taken steps to include "most economically advantageous tender" (MEAT) criteria in its procurement guidelines. The MEAT criteria dictate that bid evaluations follow best price-quality ratio and include qualification, experience, and indirect social and sustainable factors (such as trading processes and life-cycle costing)⁶.

Implementing this requires mastering development of outcome-dependent procurement tenders that are based on clear and encouraging guidelines. Selection criteria must be designed to reward better outcomes, while encouraging dynamic competition among suppliers to benefit patients and families.

Improved care and outcomes through Value-Based Procurement (Catalonia, Spain)

Catalonia needed to buy implantable cardioverter-defibrillators and cardiac resynchronization devices. These devices correct most life-threatening cardiac arrhythmias and allow individuals to avoid cardiac death and maintain a healthy lifestyle.

Rather than extending a traditional tendering process to buy the devices, Catalonian health authorities instead used a VBP approach. They identified a solution that included the supply and management of medical devices, technical assistance, management of complications, home monitoring services and change management to support the transition.

After a competitive process, a four-year agreement based on a risk-sharing model was reached. In addition to devices and services, three per cent of the value of the tender was allocated to a performance incentive. This bold agreement resulted in the creation of a remote monitoring support centre for follow-up of all patients; a comprehensive device portfolio from various manufacturers linked by a unified information system; and specific quality and efficiency measures based on patient outcomes. The use of VBP led to a revolutionary model for cardiac services⁵. The benefits include:

- Reduced hospital visits
- Reduced inappropriate discharges
- Optimized programing through the identification of patients at risk
- Greater patient satisfaction and experience
- Shared responsibility for any complications.

⁵ *Increasing Efficiency Through Value-Based Procurement: Buying Defibrillation and Resynchronization Services, Agency for Health Quality and Assessment of Catalonia*. Presentation by Catalonia's Chief Innovation Officer, Madrid, September 2016.

⁶ *Directive 2014/24/EU of the European Parliament and of the Council on public procurement and repealing Directive 2004/18/EC*, 26 February, 2014, OJ L94 of 28 March, 2014.

2.4 ENABLING INNOVATION

Innovation is a key component of continuous quality improvement in any sector. Innovation in healthcare involves using new knowledge, technologies and processes to improve patient outcomes and increase efficiencies.

In addition to accelerating the shift to VBP, Ontario's healthcare system needs to support the development and adoption of innovative technologies and solutions. The panel clearly heard that challenges exist to introduce innovative products, services and models of care. Large-scale tendering, with complicated evaluation criteria, often prohibit niche vendors from competing.

“The U.S. market is rapidly adopting Intellijoint HIP, while Canadian hospitals have told us they have no means or mandate to invest in our technology, even though it improves patient outcomes. We need better innovation procurement expertise in the health system that can recognize how new technologies, many of which are created by highly skilled Canadians, can benefit Canadian patients and the Canadian health-care system.”

– Armen Bakirtzian, Co-founder & CEO of Intellijoint Surgical

Other jurisdictions have developed smaller-scale procurement and strategic clinical and inter-disciplinary engagement throughout the supply chain. This approach ensures that opportunities for innovation and introduction of new models of care are continuously assessed and introduced.

A better performing healthcare system in Ontario will benefit from a supply chain that has the expertise and capability to continuously innovate. Collaboration works best when:

- suppliers have clear mechanisms for bringing ideas to the system for review and consideration
- healthcare systems can use tendering to bring clinical challenges to suppliers to build solutions.

The OHIC report acknowledged that the full value of proven innovative technologies can only be realized if implemented at the appropriate scale. The existing pathways for evaluating, adopting and diffusing innovative health technologies in Ontario do not provide sufficient opportunities for moving such innovations into practice.

In addition, small and medium enterprises pointed out that scale and demands to respond to RFPs can be cumbersome, limiting their opportunity to respond.

The Office of the Chief Health Innovation Strategist is promoting greater adoption of innovation. A revamped Ontario healthcare supply chain system with dedicated processes and expertise to identify, test, procure and diffuse new technologies rapidly and cost-effectively can work in tandem with these efforts.

2.5 THE FINANCIAL OPPORTUNITY

The panel heard from healthcare and supply chain stakeholders and identified the opportunities to transform supply chain delivery and achieve cost reductions in the healthcare system that can be redirected to patient care. We reviewed supply chain leading practices from other Canadian provinces, the United States, the

United Kingdom, Norway, and other parts of the world. Our recommendations have taken into account these models and the benefits they have achieved (both financial and non-financial).

By supporting a number of Shared Service Organizations and other collaborative buying activities, Ontario has made progress towards a more centralized supply chain management model. Our recommendations go further to support an improved, centralized and mature healthcare supply chain – and the related financial opportunities. For an example of potential cost savings, read Reducing Waste on this page.

Based on our analysis, the total addressable annual spend related to the procurement of goods and services for Ontario’s healthcare providers is over \$12 billion. This equals almost a quarter of all healthcare spending.

We estimate that there are significant saving opportunities which will be realized as our recommendations are fully implemented across the healthcare system. Not all opportunities have been quantified, but we have identified savings that ultimately could be worth \$500 million annually. These savings can be reinvested in patient care and population health.

Our estimates are detailed in Appendix D–Financial Overview. Savings that we have studied and quantified, contributing to the reinvestment opportunity, include the following:

- improved strategic sourcing and collaboration (through increased participation in shared procurement)
- best pricing for identical products
- shared warehousing and logistics for hospitals
- efficiencies through accounts payable consolidation
- strategic and collaborative procurement of employee benefits for publicly funded organizations.

Accounts payable and logistics bookend the entire supply chain system, providing a base to build IT infrastructure. On one end, accounts payable provide the true addressable spend. At the other end, logistics and inventory management create knowledge of exactly what was delivered to where. By adopting private sector inventory management philosophies, healthcare providers will benefit from lower inventory carrying costs, fewer outages and reduced waste (expired or damaged products).

Reducing waste

If you’ve ever taken care of a loved one at home, you may have received medical products to help with their treatment.

We heard both firsthand and from media reports of medical supplies that were sent to patients in home care, only to go unused. In some cases, entire boxes of unnecessary supplies are sometimes sent to homes. This can be confusing for the patient and caregiver, who have to decide whether to stockpile or throw out what may be perfectly usable medical products.

Home care is unique in that it involves a range of service providers and product suppliers. Since product and service delivery is distributed so widely, it makes it challenging to match supplies with patient needs.

We are confident that better coordination at a provincial level can reduce the waste of unnecessary supplies in home care and other service settings. We can then reinvest those savings into better clinical care for Ontarians.

Canadian and international sources identified other significant opportunities beyond those we have estimated. These include:

- increased standardization (as appropriate) of selected products across the healthcare system
- incremental system cost savings using value-based procurement
- reduced administrative overhead and vendor burden through consolidation and reduction in tendering efforts across the sector
- greater and more targeted clinical engagement leading to better purchasing outcomes
- reduced duplication of inventory in individual warehouses across the province
- improvements to warehousing and logistics for long-term care homes and LHINs
- reduced waste and obsolescence rates (e.g., expired products) through better inventory management at all levels of the supply chain, including in patient care areas.

The above financial opportunities demonstrate the initial gross savings estimates, but we believe the strategy outlined in this report will exceed these estimates.

We also anticipate that there will be one-time upfront investments to implement our recommendations. These investments will include:

- acquiring or modifying existing systems, tools and capabilities required to be successful and self-sustaining
- costs associated with the transition to the recommended model
- change management strategies and industry education.

Given the limitations of time and available information, we have not projected either the one-time investments or ongoing operating costs to implement and sustain the new healthcare supply chain.

We expect that the opportunities will far exceed the investment, resulting in direct and indirect benefits across the healthcare system including improved delivery, better integration and system efficiencies. Additionally, we believe that the timely and complete adoption of our recommendations will best achieve and fully realize these opportunities and benefits.



SECTION 3

The Delivery Model – Panel’s Recommendations and Advice

The panel’s guiding principles set the foundation for the recommendations outlined below. We envision a supply chain delivery model that is a strategic business partner to healthcare; a model that is integrated and equipped to deliver value, quality and efficiency in a collaborative and strategic way that improves healthcare outcomes.

As set out in our Terms of Reference, the government asked us to consider a review of existing strategic procurement structures, the role and function of Shared Service Organizations (SSOs) and the role and competencies of Group Purchasing Organizations (GPOs). As we present our recommendations, we want to acknowledge the significant gains achieved over the past few years in managing the supply chain for Ontario’s healthcare system. During our review, we learned of many examples where Ontario’s healthcare organizations have collaborated to develop systems aimed at increasing value for patients. There has been an evolution from independent purchasing to group purchasing to structured supply chain management.

For more details, see Appendix E—Evolution of Supply Chain in Ontario’s Healthcare System.

3.1 MOVING TO AN INTEGRATED ONTARIO HEALTHCARE SUPPLY CHAIN

Despite the progress achieved above, the panel learned about inconsistent buy-in and system barriers that preclude broader based adoption. We also heard of frustrations resulting from incremental, fragmented initiatives that couldn’t leverage the healthcare system’s size to drive more profound benefits. Barriers currently limiting growth include:

- a voluntary participation model with varying degrees of commitment and participation
- collaborative models that exist primarily for hospitals, retirement homes and long-term care homes, leaving other healthcare providers unable to access group purchasing
- a fragmented delivery model with nine SSOs, a number of GPOs and deliveries from a multitude of warehouses, vendors, manufacturers and distributors.

Single Integrated Structure

These challenges, combined with the missed opportunities to leverage procurement to deliver additional value, demonstrate the immediate need for a more robust structure. This new, integrated structure must be equipped with the tools and resources to enhance and maximize an advanced healthcare sector supply chain model for Ontario.

Recommendation 1

A Single Integrated Structure: Organization Consolidation



The panel recommends that:

- Ontario create a single consolidated organization (called the “Entity”) to manage Ontario’s healthcare supply chain. This Entity is to be governed by a fully independent Board of Directors with expertise and competencies that align with its business mandate.
- The new Entity’s delivery structure must be responsive to the needs of its clients. At the same time, it must develop functional specialization balanced against the need for geographic proximity. In this way, it will be able to efficiently serve a wide range of organizations in a wide range of locations across Ontario.
- The assets of all existing SSOs must be leveraged into the new model as much as possible.
- The new Entity should report publicly on financial and non-financial results at least once a year.

As a panel, we discussed and researched at length a single versus multi-organizational approach, as well as whether it should be a for-profit, not-for-profit or crown agency. See Appendix F—Summary of Jurisdiction and Model Review for a brief summary of other models considered.

Based on our review, we believe that one crown agency or not-for-profit model is best positioned to deliver the opportunities outlined in this report. However, the Board of this new Entity must be independent and competency based.

Establishing the Mandate, Scope and Scale of the New Entity

As discussed previously, the panel recognizes that a number of barriers in Ontario’s current approach have placed significant limitations on building a supply chain management system with the size and scale to operate as a strategic partner in the provincial system.

In the absence of a standardized model, SSOs and GPOs provide a variety of services. In many cases, the hospitals themselves have limited the SSO’s ability to reach its full potential based on participation and direction.

We evaluated the current service delivery model and concluded that the new Entity must be responsible for the delivery of a number of core services. It is vital this Entity be given the tools to build a model that can not only meet today’s requirements but also, one that supports tomorrow’s healthcare system needs.

Recommendation 2
The Entity’s Mandate, Scope and Scale

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<p>The panel recommends that the new Entity be accountable and responsible for the delivery of the following services, at a minimum:</p>	<p>Based on the new Entity’s greater buying power and scale, we recommend that it be responsible to provide these services for all non-payroll categories of healthcare spending. Broadly, this includes:</p>
<ul style="list-style-type: none">■ strategic sourcing and category management■ purchasing and ordering■ contract management■ logistics and inventory management■ vendor performance management■ accounts payable.	<ul style="list-style-type: none">■ products for direct clinical care and feeding■ office products■ employee benefits, corporate and contracted services■ capital, including equipment and building repairs and maintenance, renovations and major capital projects (supporting the healthcare organization working with Infrastructure Ontario as appropriate).

The new Entity should have the competencies of a recognized healthcare supply chain leader to deliver the services and categories of spend identified in this recommendation, including:

- Adopt an integrated and sustainable, system-wide approach to sourcing and purchasing, breaking existing “silos” and focusing on the long-term view of Ontario’s healthcare system.
- Promote strong engagement of clinicians with continuous feedback to them and, when appropriate, to patients.
- Develop in-depth understanding to enable and lead value-based procurement (VBP) and support innovation within the system.
- Embrace an active, nimble and responsive leadership approach, engaging partners across healthcare service delivery – including clients, clinicians, vendors, manufacturers and distributors.
- Develop business maturity quickly, so that decisions are made using business intelligence and best practices from leading models aligned with the Entity’s strategic plan. This will be achieved through:
 - board and management accountability driving performance, demonstrating value to the healthcare system
 - business and thought leadership in strategic sourcing, procurement, logistics and materials management
 - collaborative leadership, building partnerships provincially, federally and globally
 - strong and complimentary clinical and technical understanding.
- Ensure strategic alignment with initiatives such as *Patients First* and *Hospital Information System Renewal*.
- Be adaptable, with a system built on continuous improvement focusing on providing greatest value to the patient through quality and safety.

These competencies should ensure that the new Entity becomes a strategic partner to healthcare providers. As such, it will be able to support the consistent delivery of key healthcare initiatives across Ontario such as *Patients First*.

These competencies will also enable and increase adoption of VBP. This model will be aligned with improved healthcare outcomes, facilitate innovative solutions and support bundled care across the patient’s journey.

Furthermore, all of these services are required to have data about what really is being purchased and what is being held in storerooms and patient care areas at any given time. That knowledge speeds up the process if there are recalls or if one healthcare provider runs into a shortage. It also enables the Entity to track product right to the patient. None of the current SSOs provide this full suite of services, although the competency exists in some cases.

As far as the categories of service, there is a mixed model today. Most SSOs are only involved in purchasing office products, medical surgical products and some equipment. Not only is this not universal, but many healthcare providers purchase their own pharmaceuticals, building repair and construction services. One expert purchasing and contracting organization can further help these individual entities obtain more value from their tendering and purchasing activities by building a central expertise.

Some of the existing SSOs provide additional services. This panel is not recommending those be abandoned. Rather, we have concentrated on what should be the core services of the new Entity.

The new Entity can serve as a Centre of Excellence on Procurement and Vendor Management as recommended in *Value and Opportunities Created by Ontario’s Digital Health Assets Report, 2016*.

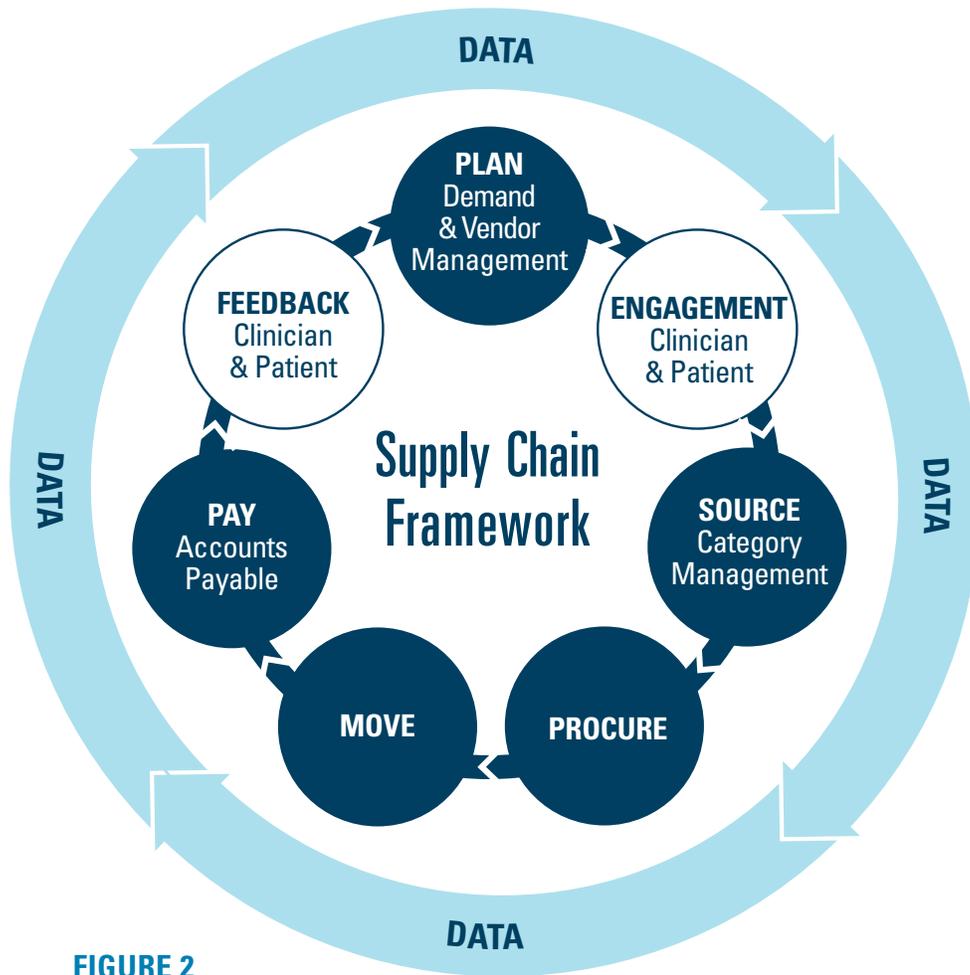


FIGURE 2

Encouraging Broader Healthcare Participation

Our mandate from the government asked us to consider the total healthcare system and how to achieve broader participation in structured group purchasing. Most hospitals are members of the current SSO and GPO providers, but not all. Levels of participation vary widely.

To varying degrees, long-term care homes are supported by bulk purchasing led by participants in the sector. Procurement practices in homes are closely linked to the funding model, as well as regulatory requirements to consult with resident and family councils. The panel was advised that long-term care homes can benefit from the competencies of a central supply chain. However, they are cautious to leverage provincial buying without considering the impact of the funding model and reinvesting savings into resident’s needs.

Beyond that, there is little structured group purchasing available to the rest of the healthcare system, such as home and community care and community-funded agencies.

For home care, there are various procurement challenges. Often, products are sourced by Community Care Access Centres (CCACs), but the service providers order and deliver these products to the patient. This separation in activities has led to documented over-ordering to the home, causing waste and frustration among home clients who must dispose of unused surplus products.

As homecare advances in line with *Patients First*, we see that there is a current opportunity to consolidate multiple contracts with the same vendors and to work with vendors to simplify service delivery. Over time, there also remains a future opportunity for the government to review and reassess contracting strategies for home care services. The new Entity could be used to tender service contracts that deliver consistent quality across the province.

To be sustainable, invest in current and future infrastructure, and lead change initiatives, this new Entity must extend participation in the supply chain to more healthcare providers. The goal is to support more integrated and patient-centred care.

Recommendation 3 Toward Fuller Healthcare Participation

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The panel recommends that Ontario mandate the following providers to participate in the new Entity:

- publicly funded hospitals
- Local Health Integration Networks (LHINs) and the home and community care services they manage
- LHIN-funded community agencies.

Outlined in Appendix G is our recommended phased-in schedule to transition healthcare partners to the new Entity over 36 months.

The panel also recommends that the new Entity encourage other healthcare partners to join and actively participate, including:

- non-profit and for-profit long-term care homes

- crown agencies and transfer payment recipients that are in the healthcare space such as Ornge, Cancer Care Ontario and Trillium Gift of Life.

The Entity could then explore further opportunities to onboard healthcare partners that would benefit from group purchasing, such as:

- municipal healthcare partners (e.g., long-term care homes, Emergency Management Services and Public Health)
- existing government warehouses, including vaccine and emergency stockpile management
- non-profit, organized primary care providers
- other partners in healthcare delivery.

The new Entity will serve publicly funded healthcare organizations. Their participation provides an extremely large base of purchasing volume which will enable the Entity to build a sustainable business model. Healthcare providers across the province would benefit from a streamlined and single point of contract sourcing and procurement model, accessing provincial pricing.

Furthermore, this purchasing power will provide the opportunity for major cost savings. The Entity will be positioned to focus on identifying new creative purchasing approaches and developing new logistics and delivery options. The Board of Directors will be accountable to the publicly funded healthcare organizations it serves and to the Government of Ontario. The Board will be required regularly to demonstrate the progress and improvements against its plans and metrics.

Developing the Financial and Business Model

As a single-payer system, Ontario's focus should be on eliminating system silos and maximizing opportunities for a streamlined and efficient healthcare supply chain. The first step is a sound financial and business model, leveraging the existing budgets for SSOs.

The current model, which relies on voluntary participation in structured group purchasing, limits the existing SSOs' ability to adequately plan and invest in infrastructure and capacity. In fact, the panel often saw a correlation between stable funding models and optimized supply chain systems.

For the new Entity to develop a robust procurement and savings model, it must be rooted in stable, accountable and transparent business practices. The Entity must measure and demonstrate success, driven by value and ongoing improvement to patient care.

Recommendation 4 A Robust Financial and Business Model

The panel recommends that the Entity's revenues should come from a mix of:

- initial leveraging of the existing in-house budgets, the existing SSO budgets and fees collected, and current revenue sources beyond those fees
- setting fees based on a publicly funded healthcare organization's total operating budget
- reinvesting savings achieved from greater operational efficiencies
- identifying time-limited provincial funding for any one-time costs relating to the up-front capital investments and for establishing new functions like data analytics
- establishing a fee-for-service model for specific and non-core services
- possibly applying a portion of purchase savings to support investments in the Entity.

The core funding model should not be based on a fee for activity. Instead, the model should be based on customer business size, not usage, creating an incentive for active participation.

We anticipate the model will evolve over time as the Entity matures. It may be determined that there are different fee structures for new and additional activities beyond the core model. The Entity will determine the most appropriate service delivery and fee structure over time to ensure that there are incentives to integrate the purchasing for solutions.

Note that vendor rebates should not be used to fund the new Entity's operations. Rather, these rebates should flow to the patient care department. In addition, we recognize that value-added incentives can provide additional benefits to purchasers. However, these value-added incentives must be directly relevant and transparent to the given procurement, maintaining the principles of open, fair and transparent procurement⁷.

⁷ *Broader Public Sector Procurement Directive: Implementation Guidebook*, Issued by Ministry of Finance, April, 2011.

3.2 ENCOURAGING PATIENT AND CLINICAL FOCUSED BUYING DECISIONS

Comprehensive clinical engagement should be a key element of the supply chain process. Clinical engagement must include communication, training and education about rules, regulations and processes, as well as enhancing the involvement of clinicians in determining the appropriate procurement approaches.

Not all clinicians can be involved in procurement decisions, however. That would be unwieldy and would significantly draw out procurement activities. We have learned that many organizations are enhancing day to day clinical engagement, while setting up formal structures as well. See Examples of Clinician Engagement in Procurement Driving Healthcare Transformation on this page.

Strengthening Clinical Engagement

The new Entity should leverage, where applicable, the existing provincial clinical networks to support improved patient experience and outcomes. These networks include those established by Health Quality Ontario, Cancer Care Ontario and the Cardiac Care Network.

In addition, the new Entity should educate clinicians, senior managers and others about the benefits of VBP and the procurement process overall so they will want and choose to contribute to the process more efficiently.

Clinicians and other healthcare providers must not only evaluate new products; they must also be involved in establishing clear selection criteria for medical supplies and products.

Clinical engagement in the supply chain is a powerful enabler to refocus value to the patient and healthcare outcomes.

Examples of clinician engagement in procurement driving healthcare transformation

BC Clinical and Support Services Society provides regional health authorities with non-clinical services, including supply chain services. Its model uses value analysis teams made up of key opinion leaders. The teams' roles are to develop product specifications, advise on how to manage issues such as recalls and drug shortages, and create a provincial body of knowledge to support procurement processes.

Alberta Health Services has also developed clinical engagement networks as part of a move towards a more integrated healthcare supply chain. Its model includes ways of:

- identifying and assessing new technologies and processes
- working with developers to support their use in healthcare settings
- monitoring their financial and other impacts at regular intervals once adopted.

In Ontario, Shared Service Organizations involve clinicians in product selection. Group Purchasing Organizations, such as HealthPro and MedBuy, have developed clinical expertise to suggest appropriate tendering criteria and evaluate products.

Excelerate Strategic Health Sourcing, a joint partnership between Cleveland Clinic and Vizient, also makes use of a robust clinical engagement model. It centres on three main pillars, 1) data-driven best in class contracts, 2) peer-to-peer physician engagement, and 3) utilization guidelines. Excelerate's Medical Advisory Board focuses on innovative business principles, coupled with dedication for quality of care, and intersects throughout the supply chain. This ensures a high degree of cultural, clinical and product management engagement.

Recommendation 5 Strengthening Clinical Engagement

The panel recommends that:

- The new Entity should establish clinical and medical expert “advisory panels” to provide advice and recommendations on tendering approaches and evaluations so that all innovative technologies, clinical approaches and services that can improve patient outcomes will be considered. Where possible, patients should also be consulted to develop product selection criteria that improve patient experience.
- The new Entity should work to improve local clinical engagement. In partnership with the healthcare providers, the new Entity should educate clinicians on the procurement process and product changes.
- To further foster continuous quality improvement and integrated care, the new Entity must develop a customer service ethos and establish mechanisms to gather feedback from clinicians and front-line healthcare providers on product usage, quality and waste.

Of course, many clinicians are involved in procurement today. We heard feedback, however, that there is an overall lack of understanding about the “rules” and the processes established. Clinicians want to be involved, but find it a burden to travel to participate in tendering evaluation meetings.

As active participants in the supply chain, clinicians can provide value while building awareness for procurement goals, processes and rationale. The new Entity has to focus on education and engagement across the system with clinicians, to raise the awareness of both the rules and the opportunities.

Furthermore, working with clinicians to establish the advisory panels will require engagement and “trust” that the members of the panels suitably represent the participants. This all takes significant leadership from the management team in partnership with the healthcare providers. A clinically driven supply chain system will feed valuable insights to support tendering and evaluation focused on improving patient experience and outcomes.

3.3 TAKING A NEW APPROACH TO PROCUREMENT

As the panel learned, there is a significant opportunity to normalize and reduce prices. But greater value can be obtained for the patient if the management team focuses on more than product price. To improve value for patients, the new Entity must develop new skills and tendering approaches to benefit from procuring for outcomes rather than products. This will improve the patient journey, which crosses different levels of care and involves different organizations, clinicians and caregivers.

Value-Based Procurement (VBP)

Having the competencies to complete large tenders, VBP or small tenders for innovation may appear to be in conflict. But a strong management team, in partnership with healthcare providers, can work to obtain more value for the patients by constantly assessing which procurement approach is most appropriate in which circumstance. The Entity’s management team cannot achieve this alone. Senior management of healthcare providers must be involved to drive procurement to focus on the value for the patient rather than just the price benefit to a certain department.

We have described our understanding of VBP and its benefits earlier in this report. VBP represents an opportunity to evolve how the provincial supply chain can support better healthcare through the strategic purchase of products and services. By procuring for value, the supply chain can put patient outcomes at the centre of purchasing decisions, with other key considerations such as competitive price.

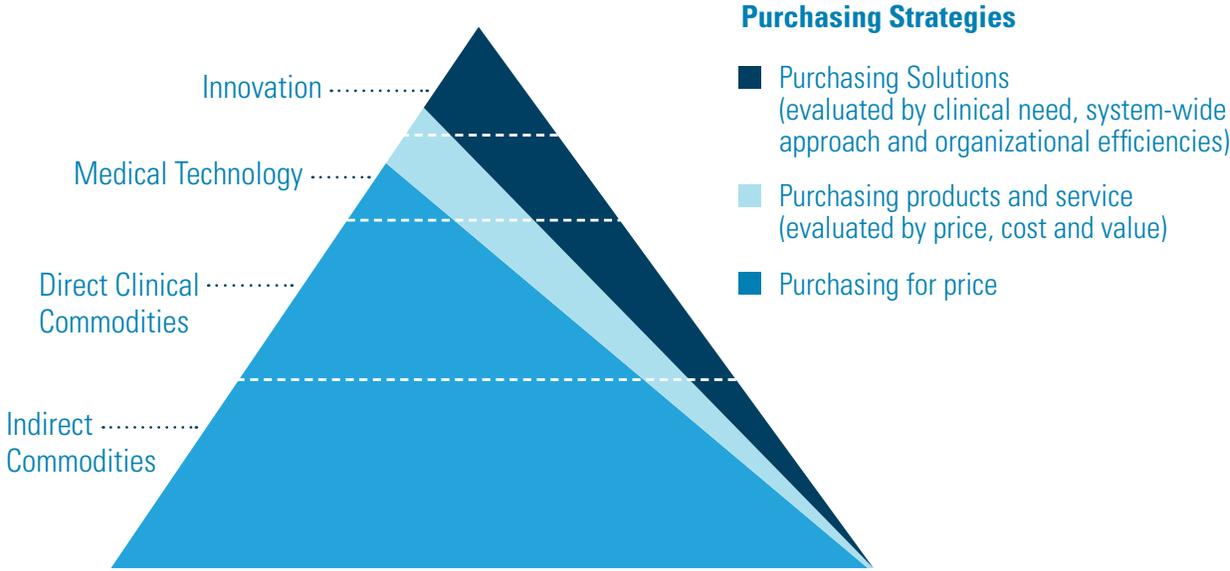


FIGURE 3

Recommendation 6
Building Capability to Undertake Value-Based Procurement

The panel recommends that the new Entity:

- Ensure VBP is a core competency, supported by performance metrics that value contributions to improving patient outcomes across the full continuum of care.
- Consider identifying senior leadership with responsibility to engage clinicians, senior managers, vendors and others to drive the shift in healthcare towards greater adoption of VBP.

VBP is challenging in the current environment, where the supply chain is effectively built within existing healthcare silos – i.e., hospitals, home care, or long-term care. The procurement bias is therefore to focus on “value” to the provider or groups of providers. Once the new Entity has the authority to consolidate those various procurement streams, it will be large enough to develop the management expertise required in this area. Procurement can evolve to work with the various healthcare providers to identify patient-centred problems that procurement can help to address.

The new Entity would be positioned to facilitate greater adoption of VBP and enable value-based care delivery. Efficiencies and improvements derived from a healthcare system that can embrace VBP will see benefits that cross multiple healthcare service delivery partners and more closely align with patient’s needs.

Enabling Innovation

A more robust Entity can and must engage clinicians and other partners at the core of its work. This is essential to ensure that innovative products and solutions are introduced into the healthcare system. Health service providers should leverage the supply chain to identify, procure and diffuse the latest advancements from the global market in a timely manner.

The supply chain needs to move at market speed when it comes to innovation. This requires different assessment and procurement models. We have learned from buying groups in Canada and the U.S. that have developed innovation focused programs and believe the new supply chain Entity for the province should explore and develop a similar model. We found that significantly more innovation occurs when senior management at healthcare providers are involved.

Recommendation 7
Procuring Innovative Products and Solutions

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The panel recommends that Ontario:

- Recognize that continuous innovation and innovative solutions are central to improving the health technology industry and Ontario’s healthcare system.
- Ensure that the new Entity possesses the expertise, infrastructure and market relationships to identify, procure and introduce new products and solutions rapidly and proactively across the system.
- Benchmark the system against global best practices in innovation adoption and establish clear performance metrics related to innovation.
- Encourage the supply chain to engage subject matter experts, multinational enterprises, clinicians and patients in the development of outcomes-based procurement processes that are accessible, transparent and collaborative.

The current purchasing environment focuses on price, quality and delivery. As there are more participants in tenders, they will get bigger, introducing the risk that only the major large vendors can participate. Ontario can achieve savings along with greater innovation by using clinical panels to:

- monitor and assess how products are evolving
- continuously assess the innovation potential of existing technologies in the supply chain
- make every effort to procure more innovative technologies that support improved patient outcomes.

Providing Clarity to the Regulatory Framework

There was a consistent theme to what we heard in this area: the mandated policies in the Broader Public Sector (BPS) Procurement Directive and attestation requirements in the BPS Accountability Act have led to overly cautious behaviour in the healthcare sector. Healthcare providers are not restricted from identifying, sourcing and procuring the full range of solutions available. There is a widespread perception that “procurement is a burden.”

We consulted extensively to gather feedback on the BPS Procurement Directive. We heard consistently that the BPS Directive does not create barriers against either VBP or procurement linked to healthcare outcomes. What we did hear was that:

- Healthcare providers need clearer and more consistent instructions through updated guidelines and other supporting materials.
- Current procurement practices tend to focus predominately on price.
- Technical specifications and criteria are becoming voluminous and unwieldy, so tenders are costly and time consuming – which limits small and medium enterprises from participating.

We understand the greatest challenge lies in interpreting what is permissible under the Directive. This can be alleviated through education, supporting materials and greater engagement in the sector between service providers and vendors.

Recommendation 8
Addressing the Regulatory Environment

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<p>The panel recommends that the Government of Ontario:</p> <ul style="list-style-type: none"> ■ Review the current procurement policy framework, including the BPS Procurement Directive and BPS Accountability Act. This review is to ensure policies meet the current and future needs of the healthcare sector 	<p>to enable the wider adoption of value-based practices and the procurement of innovative solutions.</p> <ul style="list-style-type: none"> ■ Take measures to address perceived barriers by providing clear and consistent direction to the sector on the application of the policy framework.
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The Ontario Government can and should help the new Entity in messaging what is and is not allowed under the procurement rules in Ontario. The Ontario BPS Procurement Directive and supporting guidelines do not prohibit VBP.

We have learned that other jurisdictions have gone further by providing clarity and a regulatory framework that more clearly encourages the implementation of VBP approaches. We are encouraged that with the government’s guidance, Ontario too can lead in VBP.

3.4 MEASURING PERFORMANCE, VALUE AND QUALITY

In our mandate, the panel was asked to consider developing a cost and savings model that complemented a new approach to procurement in healthcare. To be fully effective, this model requires a sophisticated framework focused on patient care, quality and safety, and is equipped to measure performance and value.

Our focus was on identifying key elements and principles of the financial model that would underpin the recommended business model, demonstrating and providing benchmark data and information on the results.

Framework for Data Integration and Analysis, Performance and Reporting

Achieving both scale and strategic integration in a healthcare supply chain is a challenge. The current lack of data integration creates difficulty in understanding system-wide price variances, contract compliance, where products are stored, and the time and resources required to get a product to a patient. In addition, current systems do not have the capabilities to assess the impact of supply chain decisions on patient outcomes.

Existing performance indicators in SSOs rely heavily on process outputs (what, how much and when) with indicators that measure collaboration and client satisfaction. We see these as providing the foundation for a new model that further shifts towards a more comprehensive performance framework.

With the increasing capability, efficiency and lower costs associated with data collection, storage and analysis, we believe there is considerable opportunity to make data analytics a core competency in the new Entity so that marked improvement is achieved in the areas of:

- pricing analysis
- buying pattern analysis
- forecasting
- vendor management
- inventory management.

Investment in information management systems is critical to performance management, transparency and outstanding customer service.

Recommendation 9

Data Integration and Analysis, Performance and Reporting Framework

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The panel recommends that the new Entity:

- Develop a robust data collection and analysis capability to create meaningful business intelligence that ensures effective management and transparent reporting on key performance metrics.
- Define desired outcomes and include annual metrics in its performance framework. These metrics should track progress towards outcomes to be measured and reported.
- Develop data to evaluate value-based procurements.

Throughout this report, our goal was to illustrate what Ontario needs to empower an advanced supply chain model. To be successful, it must have the data analytics tools and capabilities needed to manage the activities it provides. Furthermore, that information must be used to demonstrate value to the patient and the system. It must also report performance against a strategic plan defined by clear annual metrics, including:

- customer service – defined by measures such as responsiveness, timeliness and satisfaction
- quality and performance measures, such as productivity, vendor performance and contract management
- standardization where appropriate
- improvements in inventory management and working capital
- robust savings demonstrating aggregated price savings and benefits from VBP over the life-cycle of a contract
- benchmarking against global best practices.

A performance framework that reflects the size, volume and value of the Ontario healthcare supply chain must demonstrate performance and continuously improve to meet and exceed expectations. This can only be achieved by clearly outlining our goals in supply chain management and measuring our progress.

Promoting Feedback, Engagement and Inclusion

As the panel outlines a new model for a healthcare supply chain system, we recognize an opportunity to elevate the partnership between healthcare delivery and the vendor and manufacturing sectors. Both are driven by the same goal: to deliver unsurpassed healthcare to Ontarians.

Recommendation 10
Mechanisms for Feedback, Engagement and Inclusion

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The panel recommends that the new Entity create transparent, system-wide feedback mechanisms for healthcare providers, patients and their caregivers, and vendors to provide feedback on its performance and the performance of products, services and solutions.

A transparent framework will enable greater collaboration between a strong and active vendor community and healthcare providers driving greater value to deliver comprehensive solutions.

Feedback loops from clinicians, healthcare providers, supply chain managers, vendors, manufacturers, distributors, and patients and their caregivers throughout the supply chain cycle are crucial to evaluating progress and achieving continuous improvement. This feedback provides valuable information and data that supports strategic sourcing and improved vendor performance management.

Establishing Full Product Traceability

The current model in Ontario continues to rely heavily on manual processes for tracking products through the system. We have heard of multiple bar codes being added at each touch point as products move from manufacturers to distribution, to warehouses, to hospitals and to patients. In addition to opening the process to errors and mislabelling, the province lacks the ability to track products to the patient.

By enabling the healthcare system with an end-to-end line of sight that provides full traceability of products to the patient, Ontario can respond more effectively to product recalls. The province can also build better links between product performance and patient healthcare outcomes.

Recommendation 11

A Framework for Full Product Traceability

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The panel recommends the new Entity adopt an internationally recognized bar coding standard that provides full traceability of products, including pharmaceuticals, to the patient. This will enhance patient safety and support better business analytics and management.

We understand that many jurisdictions are implementing the GS1 standard. The GS1 Canada business model has impacted acceptance here. We heard that the business model, lack of transparency and fee structure implemented by GS1 Canada are obstacles to wider adoption of the standard by healthcare providers in this country. It is imperative for patient safety that these obstacles are addressed so that Ontario can embrace the global standard.

By facilitating the wide adoption of global standards in healthcare for product traceability, Ontario will significantly advance patient care quality and safety.

3.5 MOVING TO THE NEW MODEL

The government asked the panel to recommend an implementation plan to deliver the strategic opportunities outlined in this report. We considered the current landscape and an ideal state where the supply chain system is aligned with patients' care and healthcare outcomes.

Transition to the New Model

The current landscape includes seven non-profit SSOs, two primary national GPOs, one specialized, hospital-owned GPO and two hospital-owned buying groups. At the time of drafting this report, merger discussions were underway. However, moving from the current landscape will require facilitating the consolidation of SSOs and hospital-owned buying groups into a new, integrated Entity. This will take significant cooperation, time, resources and effort.

The first step is to establish a formal structure to guide this critical transition. This will require active government engagement to identify the initial list of priorities and provide the tools and resources to create the structure and competencies needed.

Recommendation 12 **Transition to the New Model**

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The panel recommends the province appoint a Transition Board, supported by a transition team and with a mandate not to exceed 12 months. The Transition Board will be responsible to:

- Establish the new Entity's governance structure.
- Recruit the transition leadership team and new independent Board.
- Identify priority contracts to jointly tender.
- Transition existing assets and services.

- Develop a strategic business and capital plan.

We further recommend that the Government of Ontario issue the necessary policy direction to ensure that any initiatives undertaken by the existing SSOs, hospitals or other key players in the transition period are fully consistent with the direction set out in this report. This is to ensure that the full benefits of the proposed model are realized in a timely manner.

In particular, and at a minimum, this policy direction should ensure that the foregoing entities:

- Only enter into short-term arrangements for goods and services and/or leasing arrangements with the appropriate exit ramps to maintain flexibility to achieve efficiencies in the future.
- Defer changes to executive and staff compensation and terms of employment.
- Defer acquisition and/or implementation of new information technology solutions related to procurement, logistics and inventory management.

There are numerous examples of government initiatives that have effectively incorporated a transition model to shift from the current state to the recommended new approach. The modernization of the healthcare supply chain will require consolidation of existing SSOs and negotiating strategic partnerships with GPOs to maximize existing national negotiated sourcing arrangements. The first priority should be to expand joint tendering to achieve price savings.

To facilitate this transition, all SSO assets and services should be managed by the Transition Board. This will help to immediately drive benefits and ease system integration down the road.



Conclusion

The recommendations we have outlined look to build a new model in healthcare delivery that shifts from supply chain management to strategic business partner – a partner effectively positioned to support patients, healthcare providers and government alike. As the shift begins, new models, approaches and partnerships will emerge. Some of these will require a change in understanding risk.

To fully realize the opportunities identified for improved delivery, organizational efficiency and financial savings will require the timely and complete adoption of the recommendations of this report. We believe this shift to be in the public interest of all Ontarians.

We are confident that, with the right framework to balance the interest of vendors, purchasers, the province and above all, the people of Ontario, the result will be an advanced supply chain that meets and even exceeds the needs of Ontario's healthcare system. In fact, the Expert Panel believes that by implementing the recommendations, Ontario can strive to achieve much, much more than the opportunities we have quantified here. Savings can and should be reinvested into the healthcare system to support better patient care and outcomes in the future.

It is our hope that our recommendations and advice will contribute to a global-best, high performing healthcare system, one that can make Ontarians proud.



Glossary and Key Terms

The following terms and descriptions have been adopted for the purpose of this report.

Accounts Payable – The business function that is responsible for making payments owed by an organization to suppliers and other creditors.

Back-Office Information Technology Services – Platforms, software and/or applications used by organizations to manage core internal operations such as, financial management and budgeting, procurement and accounts payable.

Broader Public Sector Accountability Act, 2010 – An Act that provides authority to the Management Board of Cabinet to issue directives governing the procurement of goods and services by designated broader public sector organizations.

Broader Public Sector Procurement Directive – The Broader Public Sector (BPS) Procurement Directive provides consistent procurement practices for BPS organizations to: a) improve accountability and transparency for procurement decisions and processes; and b) maximize the value that BPS organizations receive from the use of public funds.

Category Management – A strategic approach which organizes procurement resources to focus on and conduct in-depth market analysis of specific areas of spend.

Clinician – A healthcare professional providing direct patient care.

Group Purchasing Organization (GPO) – An entity aggregating purchasing on behalf of a group of organizations such as healthcare providers and leveraging collective buying to improve purchasing terms and/or price from vendors.

Healthcare Provider – Individual, group or facility licensed to provide healthcare services to eligible residents of Ontario.

Healthcare System – Includes the full continuum of healthcare delivery, from health promotion, to family physician, specialist clinics and hospitals to long-term care and home care services.

Innovation – Refers to new health technologies, new forms of healthcare delivery and process changes that add value for people and the healthcare system as a whole, improving the quality and cost-effectiveness of care delivery.

Inventory and Logistics Management – The planning and execution of the movement and storage of goods and related information between points in the supply chain.

Long-Term Care (LTC) Home Resident – An individual requiring onsite-nursing care, 24-hour supervision and/or personal support and residing in a long-term care home, as governed under Ontario Regulation 79/10.

Multinational Enterprises (MNE) – A company comprised of companies or other entities that are established in more than one country. Canadian owned multinational companies (by definition) operate facilities in other countries.

Patient – A person receiving healthcare services in support of his or her return to health.

Patient-Centred Care – Care that is provided and determined with input of the patient and his or her support group. A patient-centred care system is one where patients can move freely along a care pathway

without regard to which physician, other healthcare provider, institution, or community resource they need at that moment in time. The system is one that considers the individual needs of patients and treats them with respect and dignity.

Patient Journey – The patient’s experience throughout treatment, which includes the care the person receives from one or multiple healthcare providers.

Procurement – The activities involved in establishing fundamental requirements for the acquisition of goods and services, as well as sourcing activities such as market research, vendor evaluation, negotiation of contracts and buying of the product.

Purchasing and Ordering – Purchasing is the business function of procuring materials, supplies and services. Ordering is the business activity of engaging in a commercial transaction for specific products or services, which begins with the customer/client’s intention to buy.

Quality Healthcare – A healthcare system that delivers world-leading safe, effective, patient-centred services efficiently and in a timely fashion, resulting in optimal health outcomes for all communities.

Shared Service Organization (SSO) – An organization created to manage processes and services for multiple organizations (its members). An SSO uses a centralized skilled resource pool to leverage economies of scale and reduce administrative duplication to lower costs, improve quality and increase efficiency. The SSOs help member hospitals and other customers manage their supply chain and provide other back-office administrative services, while promoting group purchasing in Ontario’s broader public sector.

Small and Medium-Sized Enterprises (SME) – A company with less than 500 employees.

Strategic Sourcing – A comprehensive approach for locating and sourcing suppliers. Often includes the business process to analyze total-spend for goods and services. In addition, includes a focus on the development of long-term relationships with suppliers who can help the buyer meet organizational goals such as profitability and customer satisfaction.

Supply Chain – All ordering, purchasing, movement and storage of raw materials, work-in-process inventory and finished goods from point of origin to point of consumption.

Supply Chain Management – Encompasses the design, planning, execution, control, monitoring and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with partners, which can include hospitals, LHINs, suppliers, intermediaries, and patients. In essence, supply chain management integrates supply and demand management within and across the entire healthcare system.

Traceability – The registering and tracking by lot or serial number of parts, processes and materials used in production.

Value-Based Procurement – An approach that uses purchasing power to drive greater value through improvements in healthcare delivery and better health outcomes. It involves making purchasing decisions based on overall lifecycle and/or value (e.g., outcome desired, life-cycle management, quality, service and cost). This leads to better management of operating costs and can contribute to reengineering of healthcare toward a system of population health improvement and management where better outcomes are attained at the lowest possible cost.



APPENDIX A

Expert Panel Terms of Reference

HEALTHCARE SECTOR SUPPLY CHAIN STRATEGY EXPERT PANEL

The Healthcare Sector Supply Chain Strategy Expert Panel was established on set Terms of Reference, including:

Background

The Ministry of Health and Long-Term Care (MOHLTC) and the Ministry of Government and Consumer Services (MGCS) are undertaking a project to develop a province-wide supply chain management strategy for the healthcare sector.

The current delivery of healthcare supply chain management and procurement is disparate, fragmented and non-integrated. A province-wide approach to healthcare supply chain can optimize efficiencies, identify savings, contain on-going costs and support innovative advances in patient care to promote improved healthcare outcomes.

Governance

An Expert Panel is established as a short-term advisory body appointed by the Minister of Health and Long-Term Care to provide advice and recommendations to the government. The final report will be submitted to the Minister of Health and Long-Term Care and the Minister of Government and Consumer Services, who have final decision-making authority.

The Expert Panel will be supported by a Secretariat led by the Business Innovation Office, MOHLTC.

Mandate

The Expert Panel's mandate is to deliver advice and recommendations to the government on the development and implementation of a province-wide supply chain management strategy for Ontario's healthcare sector. This will be submitted by way of a report to the government outlining a strategy and implementation plan.

The Expert Panel's advice and recommendations to the government on a *Healthcare Sector Supply Chain Strategy* will consider:

- a province-wide healthcare strategic focus
- review of existing strategic procurement structures
- a future governance model
- Shared Service Organizations role and function
- healthcare sector participation in structured group purchasing
- robust procurement costing and savings models
- an aggressive implementation plan to deliver strategic opportunities.

Communications

Media requests will be directed to the Secretariat. Stakeholder communications will be managed by the Secretariat in consultation with the Expert Panel.

Ownership of Materials

All confidential information, including all work materials produced by the Expert Panel, shall be and remain the sole property of the Crown in right of Ontario.

Amendments to Terms of Reference

These Terms of Reference may be amended by the Minister of Health and Long-Term Care at any time during the term of the Expert Panel's mandate upon notifying the members in writing.

For More Information

Contact the Expert Panel Secretariat at HealthcareSCM@ontario.ca



APPENDIX B

Healthcare Sector Supply Chain Strategy (HSSCS) Expert Panel Members

Kevin Empey, Chair

Kevin Empey was the Chief Executive Officer of Lakeridge Health from July 2008 to April 2016. Kevin is a Chartered Professional Accountant who is also a graduate of Harvard's Advanced Management Program. He has worked in the hospital sector since 1990, with senior roles at University Health Network, Peel Memorial Hospital and St. Michael's Hospital. He currently is a guest lecturer at the University of Toronto, University of Ontario Institute of Technology (UOIT) and York University. In 2012, he was appointed adjunct professor at UOIT. Kevin has been heavily involved in transforming hospital services through the creation of shared clinical and support services and private/public partnerships. Kevin was a key contributor to the development of Plexxus.

Elyse Allan

Elyse Allan has been the President and Chief Executive Officer of GE Canada and Vice-President of GE since 2004. She serves on the Board of Directors of the C.D. Howe Institute, the Conference Board of Canada, MaRS Discovery District and various government advisory councils. Elyse was appointed Member of the Order of Canada for her community engagement and achievements as an innovative business leader. She earned a Bachelor of Arts degree from Dartmouth College and an MBA from the Tuck Business School at Dartmouth. She holds honorary doctorate degrees from several Canadian universities.

Jodi Butts

Jodi Butts is an experienced mission-oriented lawyer and executive. She has a wealth of health sector knowledge, having held several leadership positions, including Senior Vice-President of operations and redevelopment at Mount Sinai Hospital and Executive Director of Rise Asset Development. Jodi has acquired significant governance experience both in her role as governance committee chair of the Wellesley Institute and as a member of the University of Windsor Board of Governors and Audit Committee. As a lawyer and entrepreneur, she was a founding partner in a successful boutique litigation firm. Jodi has a proven track record in leading organizations to achieve positive change and growth as a governor, leader and founder.

Ron Gagnon

Ron Gagnon has been the President and CEO of the Sault Area Hospital (SAH) since July 2006. SAH is a 300-bed community hospital serving 120,000 people. Prior to becoming CEO, he was the Senior Vice-President of corporate services, a role he assumed after first joining SAH as its Vice-President of Finance in April 2001. Prior to joining SAH, he was a Vice-President with the largest water services company in Canada. Ron has an honours Bachelor of Commerce degree from Laurentian University and is a Chartered Professional Accountant and Certified Management Accountant.

Gabriela Prada

Dr. Gabriela Prada is a Strategist, Health Policy Systems within Medtronic's Global Government Affairs team. She is a policy expert with 20 years of experience as a physician, management consultant and administrator. She has done extensive work and has published on health innovation topics. Over the last eight years, Dr. Prada developed a strong understanding of how tendering practices support value-based healthcare. She is a skilled facilitator and has presented and facilitated dialogue on these topics in Canada, Barcelona, Moscow, Bratislava, Washington DC, Lisbon, Vienna and Bogota. She has been supporting change efforts in various jurisdictions as they transition towards value-based healthcare models. She is a mentor, has a Master's degree in health administration from the University of Ottawa and is a Certified Health Executive.

Neil Sentance

Neil Sentance most recently served as Assistant Deputy Minister of the Ontario Public Service (OPS) Green Office in the Ministry of Government Services. Prior to that, Neil was Assistant Deputy Minister of Supply Chain Management Division, Ministry of Government Services, responsible for approximately \$1 billion in annual procurements. He has also held several senior management positions in the OPS, including in the Office of the Corporate Chief Information Officer and the former Management Board Secretariat. Neil is a member of the Ontario Regional Board of Directors of the Nature Conservancy of Canada and is a former adjunct professor of political science and public policy at the University of Toronto. Neil has a Bachelor of Arts degree and Master of Arts degree in political science from McMaster University.

Paul Tuttle (stepped down May 2016)

Paul Tuttle has served in leadership roles in a wide variety of positions in the health sector including government, private and non-profit organizations. Most recently, Paul was President of Extendicare Canada until his retirement in June 2015. Prior to Extendicare, he was employed by the Ministry of Health and Long-Term Care in a policy capacity and then as a Director in the Long-Term Care division. Paul also served as Executive Director, Durham Region Community Care and worked for the Canadian Mental Health Association and CNIB. He has been involved in a number of not-for-profit organizations in a voluntary capacity.



APPENDIX C

Stakeholder Engagement and Research

Starting in April 2016, we engaged stakeholders through meetings and consultations, forums, teleconferences, questionnaires and third party surveys, written submissions, emails and online comments. All materials submitted to the Secretariat were shared with us as part of the review and deliberations that formulated the recommendations outlined within this report.

Stakeholders included:

Healthcare Service Providers: such as hospitals, long-term care homes, Community Care Access Centres, Local Health Integration Networks and other groups and associations, to identify opportunities, challenges and validate data.

Vendors, Manufacturers and Distributors: to identify opportunities, discuss how innovation does and does not happen and to identify challenges in the current system and regulatory framework.

Shared Service Organizations and Group Purchasing Organizations: to identify the current supply chain and procurement processes and methods, opportunities to increase collaboration, boost innovation and improve delivery.

Government Program leads: to ensure a high level of alignment with key government initiatives, such as the Hospital Information System Renewal Panel and Local Health Integration Network Corporate Service Entity, health agencies, and Supply Chain Ontario.

Research Leaders: in healthcare supply chain policy, quality and standards.

The panel's recommendations were developed based on advice, knowledge and research guided by:

- key government strategies and mandates including *Patients First: Action Plan for Health Care*; Ontario Health Innovation Council's *The Catalyst: Towards an Ontario Health Innovation Strategy*; and development of a pan-Ontario Supply Chain Management Strategy for the broader public sector.
- an examination of best practices in Ontario, as well as other provincial and international jurisdictions.
- a review of literature, publications, data and policy reports produced by external consultants, industry leaders and associations, research organizations and not-for-profit organizations.
- forums, presentations, teleconferences and submissions by stakeholder organizations involved in the healthcare supply chain in Ontario, including SSOs, GPOs, hospitals, CCACs, long-term care homes and associations.
- input provided by stakeholders, private individuals, organizations, associations, research organizations, consultancy groups and the public.

The panel collected and reviewed the information and evidence shared through meetings and teleconferences over the course of its review. We deliberated meaningfully, ensuring all perspectives were considered. We then integrated the evidence and what we heard into our consensus recommendations.

Profile of stakeholders engaged

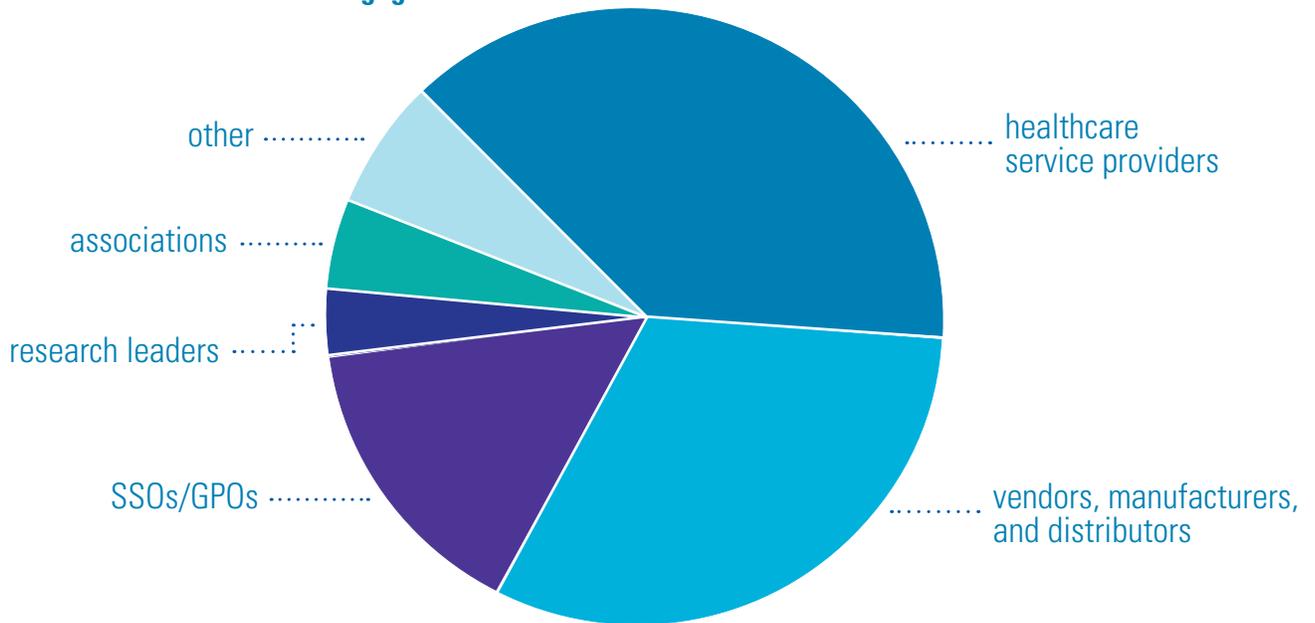


FIGURE 4



APPENDIX D

Financial Overview

Methodology

We estimated the opportunity for financial gross system reinvestment using the following approach:

1. We began with the results from an independent third party analysis of supply chain practices and the spend related to the procurement of goods and services by hospitals, CCACs and long-term care homes. This analysis was completed on fiscal year 2014-15 data for the Ministry of Government and Consumer Services. Although participation by the healthcare service providers was not 100 per cent, the analysis identified \$372 million in cost reductions from:

- a) strategic and collaborative sourcing (improved participation in shared procurement)
- b) price variation on identical products supplied by the same vendors (note that price variations for similar products from two different vendors were not considered, which would yield further cost reductions)
- c) warehousing and logistics costs for hospitals.

2. The cost reduction opportunities identified in the above analysis were then extrapolated across the healthcare system. These projections yielded an additional \$83 million in cost reduction from (a) and (b) above.

3. We also reviewed positive outcomes from recent business cases for standardizing and consolidating Accounts Payable. Hospitals and other providers have most likely made some improvements in Accounts Payable productivity over the years. Because we were unable to assess how much has improved, we discounted these results by 40 per cent, and estimated an opportunity for a further \$24 million in cost reduction.

4. We also reviewed positive results from recent joint tendering of employee benefits (Life, Accidental Death and Dismemberment, and Long-Term Disability). These initiatives averaged a 20 per cent reduction, suggesting that further opportunity exists in this area. Again, since we do not know fully what has transpired in the field, we discounted the demonstrated/real savings by 50 per cent and estimated a further \$14 million opportunity.

These anticipated savings do not exhaust the opportunity. We have identified, but not quantified, a number of further cost reductions. These include:

Contracted homecare services

We reviewed public reports about the cost of contracted homecare services. According to the Auditor General Special Report 2015, the average variance between the high and low rate paid for the same service was 30 per cent. The first step to lower costs might be to consolidate contracts with like vendors. Implementation can begin once the LHIN CCAC management teams are fully operationalized.

Product standardization

An opportunity exists to standardize selected products across the healthcare system. Findings from other jurisdictions demonstrate there is an opportunity here to reduce prices up to seven per cent. We caution however, that Ontario should not depend on a single supplier for any clinically sensitive products. This would introduce significant risk, as we experienced with drugs, when the sole supplier had to close their plant. It would also significantly negatively impact the vendor market.

Value-based procurement

In addition to improvements in patient care, findings from other jurisdictions demonstrate there is an opportunity for cost reduction of up to eight per cent by increasing adoption of value-based procurement.

Logistics and warehousing

We have identified further cost reductions through:

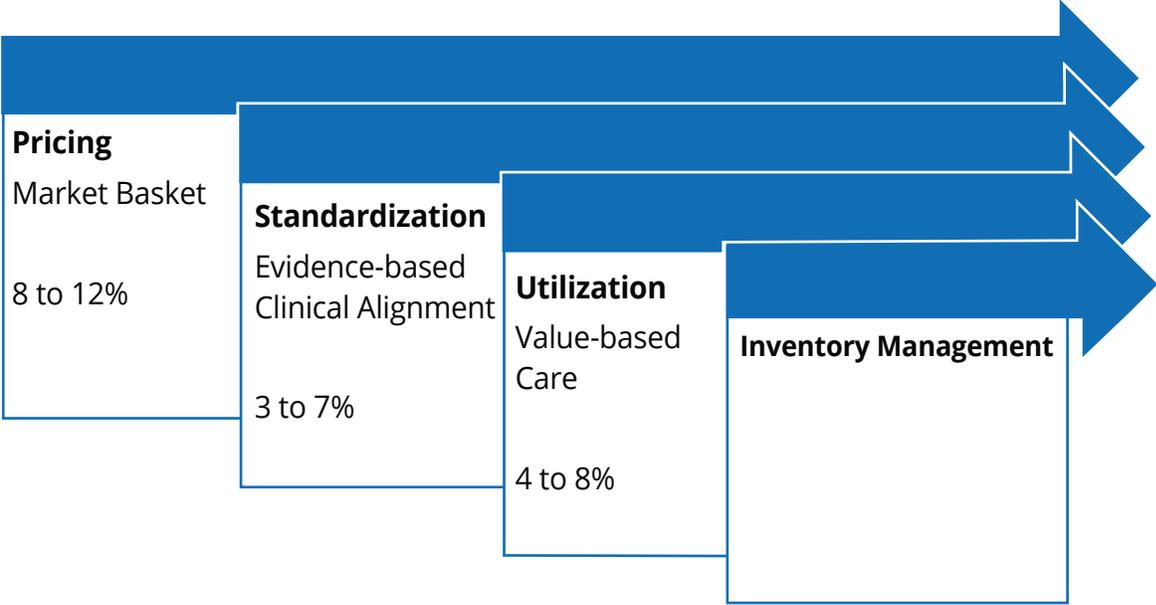
- One-time reduction in duplication of inventory (e.g., minimal inventory on hand) in stand-alone warehouses across the province.
- Improvements to warehousing and logistics for long-term care homes and CCACs.
- Reduction in waste and obsolescence (e.g., expired products) and stock outage affecting care delivery, through better inventory management at all levels of the supply chain.

Administration

We have identified opportunities to reduce administrative overhead and vendor burden through collaboration, consolidation and the reduction in tendering efforts across the sector. We also believe there is an opportunity to reduce the costs of administering the supply chain through consolidation.

The chart below from the Cleveland Clinic (as part of the Excelerate Strategic Health Sourcing partnership) categorizes the savings that they have experienced. Most of the cost reductions identified in our \$500 million estimate are aligned to Level 1 and some to Level 2 and 4. In addition to activities that will contribute to the \$500 million in savings, our other recommendations should contribute to the significant opportunity identified in Level 2, standardization and then Level 3, value-based procurement as well as Level 4, inventory management.

FIGURE 5: Path to Value-Based Care (Source: Cleveland Clinic, as presented to the Expert Panel)





APPENDIX E

Evolution of Supply Chain in Ontario's Healthcare System

The collective efforts of the healthcare sector, as well as the organizations that support it, have worked together to achieve a number of supply chain efficiencies over the past few decades. The Expert Panel acknowledges their contributions to make the healthcare sector more sustainable.

In the 1990s, healthcare organizations in Ontario began efforts to leverage their collective buying power to negotiate lower prices. Two national group purchasing organizations (GPOs) for healthcare, HealthPRO and MedBuy, grew from these early collaborations and activities gaining economies of scale through large-scale tendering. A specialized group purchasing function was also created within the St. Joseph's Health System of Hamilton in 1992 that focused on two main streams of procurement activity, capital equipment, and food and nutrition. Generally, GPOs negotiate contracts and prices for selected goods and services.

Further supporting the shift towards group purchasing, the provincial government introduced the OntarioBuys program starting in 2005. This initiative supported the expansion and creation of nine independent healthcare Shared Service Organizations (SSOs) throughout the province. The SSOs provide sourcing and procurement functions such as negotiating contracts, placing orders, receiving goods and products and paying invoices for their members. In addition, SSOs also retain membership in the GPOs to access greater buying power.

While all SSOs provide their members and customers with the advantages of larger scale, they differ considerably from one another in the range of services they provide. They primarily focus on the hospital sector, with some limited outreach to other healthcare service providers.

The current landscape results in vendors and health providers developing and managing multiple relationships to support service delivery.

Currently healthcare service providers procure through various means, including:

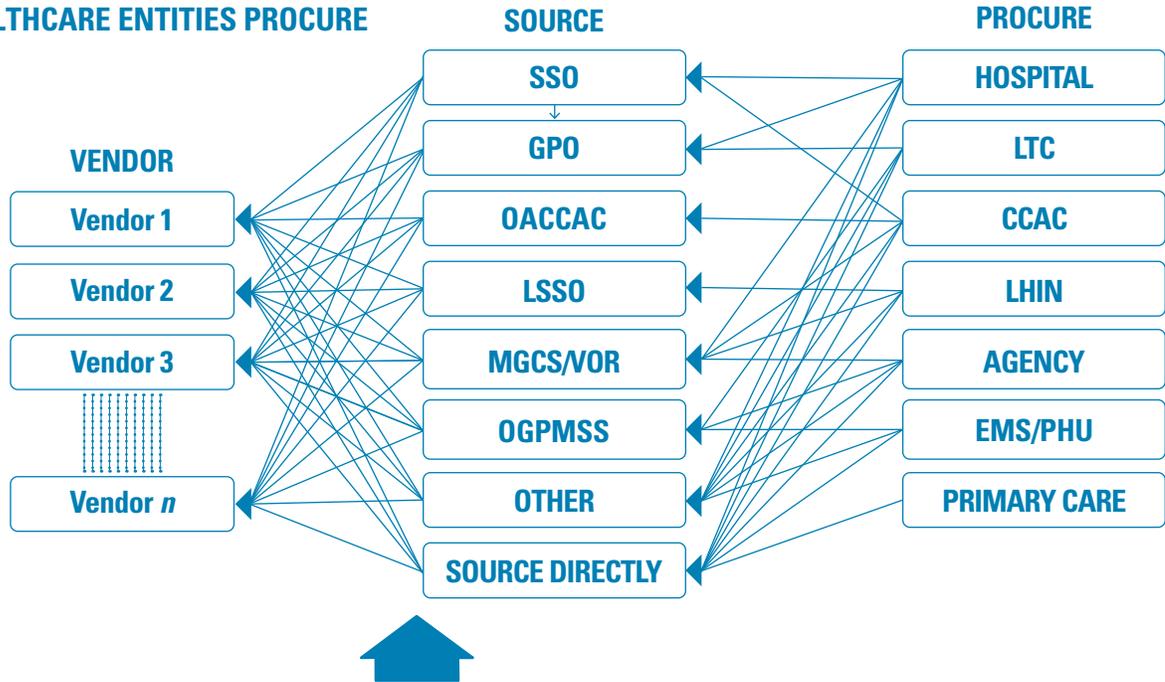
- direct from vendor without a contract
- direct from vendor through their own contract
- joint contracts with one or more other organizations
- through collaborative buying groups (e.g., hospitals buying through SSOs and/or national GPOs)
- through a central publicly managed buying program (e.g., ministries buying through Ministry of Government and Consumer Services (MGCS) enterprise Vendor of Record program).

This results in many organizations being involved in Ontario's healthcare sector supply chain, including:

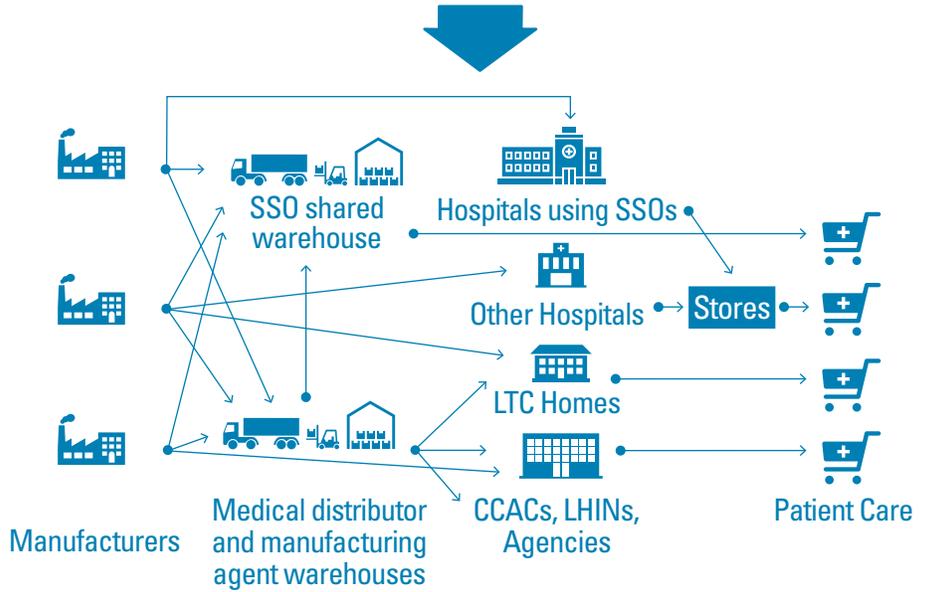
- nine SSOs, providing supply chain and related services to most hospitals. However, service offerings across the SSOs and the level of participation vary across membership
- GPOs, where some hospitals are members of GPOs, exclusively or in addition to being a member of an SSO
- medical distributors and third party logistics companies providing products and services to hospitals and other healthcare service delivery partners.

FIGURE 6

HOW HEALTHCARE ENTITIES PROCURE



ACRONYMS	
CCAC:	Community Care Access Centre
EMS:	Emergency Medical Services
GPO:	Group Purchasing Organization
LHIN:	Local Health Integration Network
LSSO:	LHIN Shared Service Office
LTC:	Long-Term Care
MGCS:	Ministry of Government & Consumer Services
OACCAC:	Ontario Association of Community Care Access Centres
OGPMSS:	Ontario Government Pharmaceutical and Medical Supply Service
PHU:	Public Health Unit
SSO:	Shared Service Organization
VOR:	Vendor of Record



FLOW OF STOCK (INVENTORIED) ITEMS
 *(general case shown for illustration purposes)

With so many organizations involved in sourcing and procuring and participation optional, the result is a disparate, non-integrated supply chain system and fragmented shared service delivery. There continue to be opportunities in the healthcare sector for further enabled collaboration and transformation.

APPENDIX F

Summary of Jurisdiction and Model Review North America

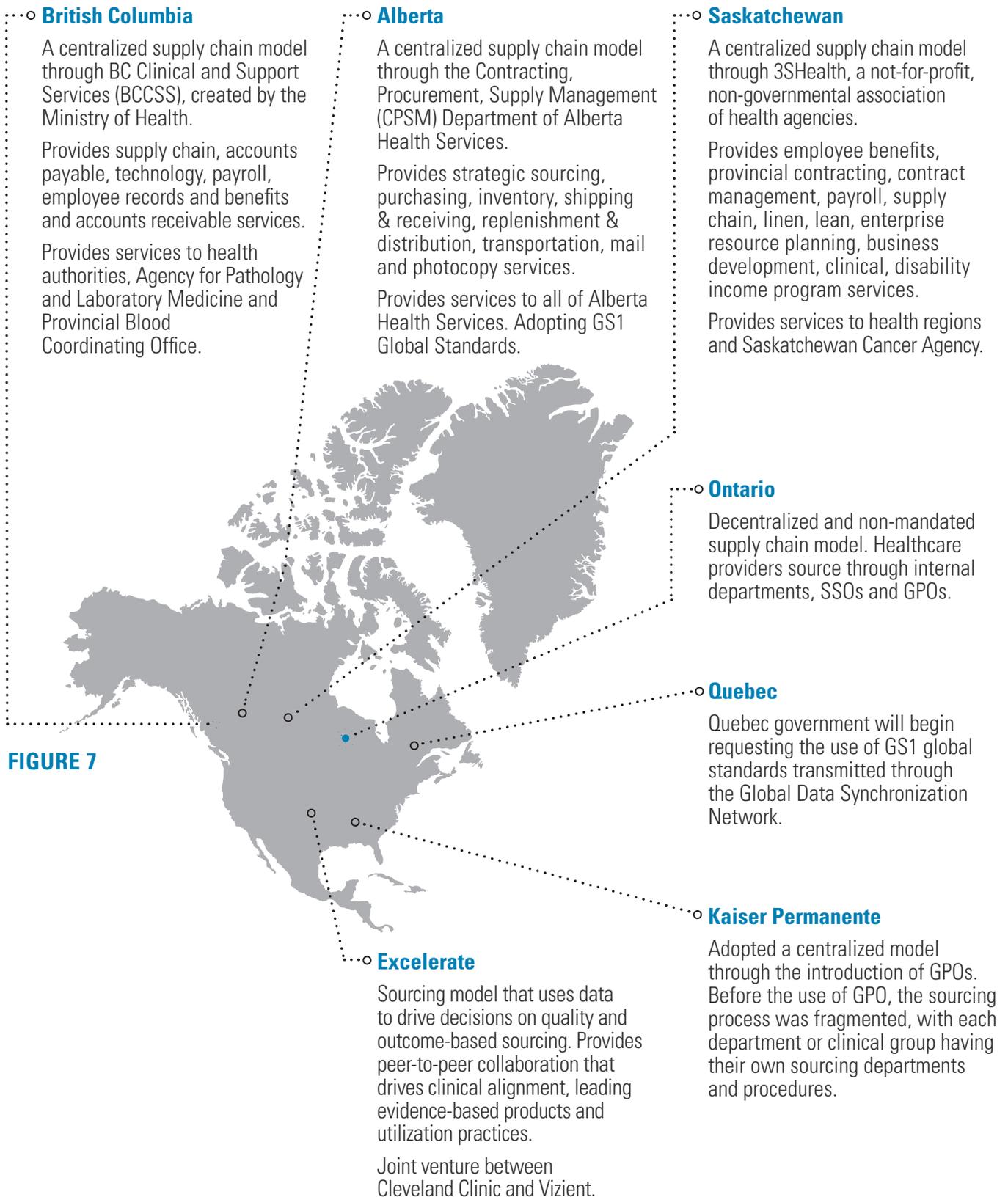


FIGURE 7

Europe & Australia

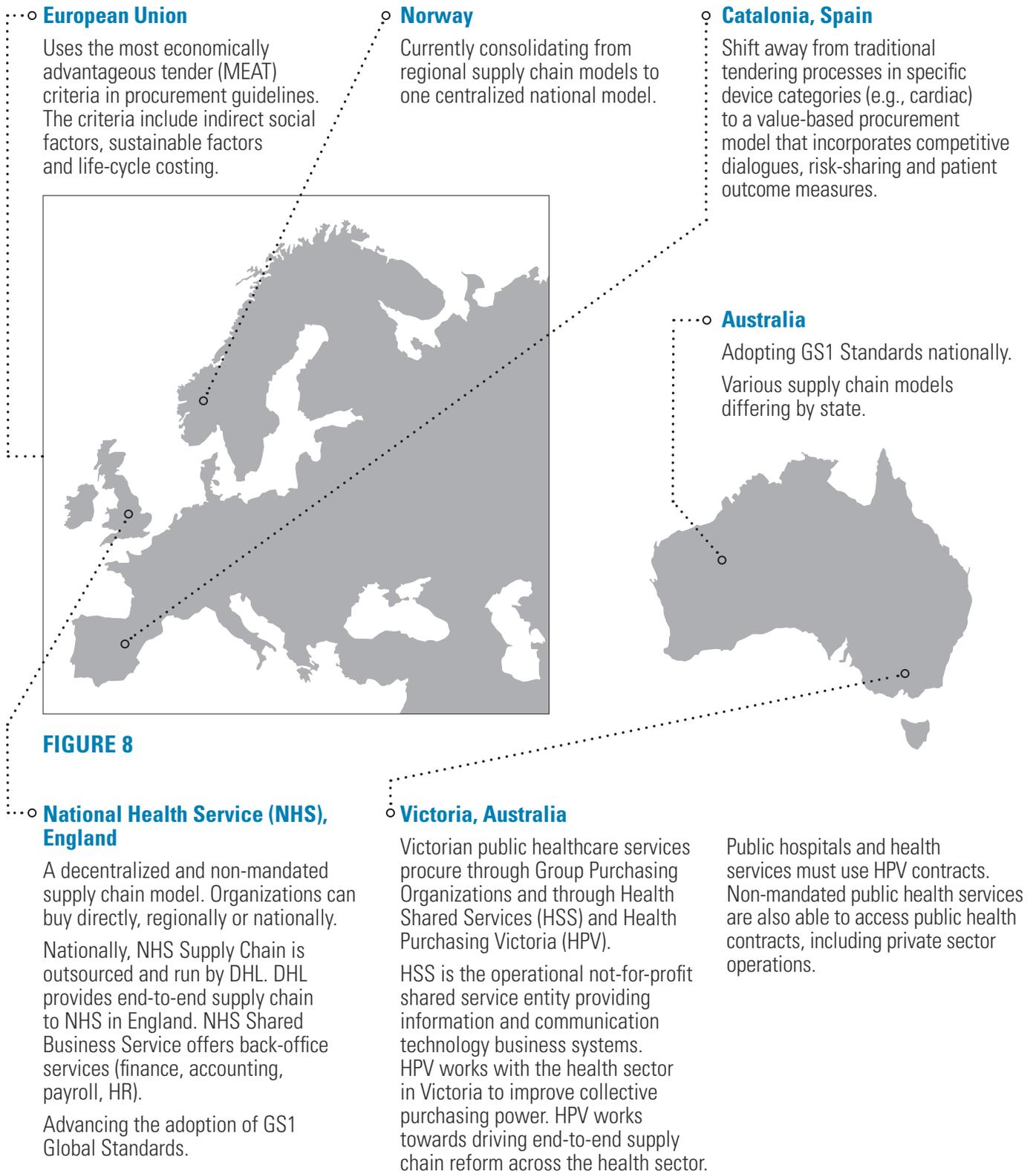


FIGURE 8



APPENDIX G

Healthcare Sector Onboarding

CONSIDERATIONS FOR TRANSITIONING HEALTH SERVICE PROVIDERS FROM CURRENT SUPPLY CHAIN ARRANGEMENTS TO USING THE NEW ENTITY

Achievable savings will be impacted by the speed at which contracts are sent to market jointly. Secondly, there will be operational benefit and standardization opportunities as health service providers fully adopt the services of the new Entity. We anticipate operational and cost improvements over time which will encourage more health service providers to choose to use its services.

The new Entity will be able to onboard hospitals and other healthcare providers efficiently due to existing fully functioning computer systems and logistics processes and warehouses in the existing SSOs. The priority should not be to merge the computer systems, but rather use the best of them to onboard and develop joint tendering approaches. We believe the new Entity is likely to use a phased approach, whereby certain systems, business processes and procurement practices will be harmonized at different times for different organizations. This approach will have to be developed by the management team of the new Entity, upon careful analysis of the capacities of health service providers, to minimize disruption in the flow of goods and services to the sector.

HealthService Provider	Service	Suggested Timeframe
Existing SSO customers/members	Joint strategic sourcing	12 months
	Use of all services available	24-36 months
LHIN/CCAC	Joint strategic sourcing	12 months
	Use of all services available	36 months
Non-SSO hospitals	Joint strategic sourcing	24 months
	Use of all services available	36 months
LHIN-funded home and community care service providers	Joint strategic sourcing	24 months
	Use of all services available	36 months
Other participants	Joint strategic sourcing	After 36 months

We expect it will take at least five years before the new Entity is fully operational and beginning to reach a mature state with the expected skills, sourcing, warehousing and logistics capacities, and an established reputation. At that point, we suggest the Ministry of Health and Long-Term Care will be in a position to actively encourage the following entities to use the full range of core services of the new supply chain organization:

- existing government warehouses, including vaccine and emergency stockpile management
- LTC homes
- primary care
- Crown agencies and transfer payment recipients in the health sector
- municipal partners, including long-term care, EMS, public health units
- organized doctor and nurse practitioner primary care entities.



APPENDIX H

Summary of Research and Publications

The following list outlines the research and models we used to help inform our recommendations to government. We recognize these references are not comprehensive of all research and models on supply chain management in healthcare; however, we do believe they provided the perspectives we needed to consider in shaping our recommendations.

- Advisory Panel on Healthcare Innovation. Unleashing Innovation: Excellent Healthcare for Canada (2015).
- Anne Snowdon. Visibility: The New Value Proposition for Health Systems (2016).
- BCG Perspectives. Procurement: The unexpected driver of value-based health care (2015).
- Canadian Agency for Drugs and Technologies in Health. Shared services in health care (2011).
- Canadian Institute for Health Information. Benchmarking Canada's health system: international comparisons (2013).
- C.D. Howe Institute. Better value for money in healthcare: European lessons for Canada (2012).
- College of Europe. Public procurement law and health care: from theory to practice (2010).
- Ed Clark. Value and opportunities created by Ontario's Digital Health Assets (2016).
- Ernst + Young LLP. Ontario healthcare supply chain data analysis: Findings and opportunities (2016).
- GS1 Australia. Healthcare data crunch: quantifying the benefits of accurate data in an electronically enabled supply chain (2014).
- Health Quality Ontario.
- Healthcare Transformation Group's position statements on GS1 Standards.
- Hospital Supply Chain Metrics Working Group. Performance Management (2006).
- Institute for Public Policy Research. Improved circulation: unleashing innovation across the NHS (2015).
- Jonathan Skinner and Douglas Staiger. Technology diffusion and productivity growth in health care (2015).
- Kjetil Istad (Helse Sor-Ost). Value-Based Procurement presentation for Conference Board of Canada (2015).
- KPMG. Healthcare organizations more pessimistic about value-based healthcare: KPMG survey (2016).
- Lord Carter of Coles. Review of operational productivity in NHS providers Interim Report (2015).
- Management Board of Cabinet. Broader Public Sector Procurement Directive (2011).
- Materials provided by various SSOs, GPOs and Ontario healthcare supply chain partners.
- McKinsey & Company. Strength in unity: the promise of global standards in healthcare (2012).
- MedTech Europe. Driving Value-Based Healthcare in Europe. Event Report (2016).
- MedTech Views. How public procurement can drive more sustainable healthcare (2016).
- Michael E. Porter. What is value in health care? (2011).
- Ministry of Finance. Broader Public Sector Procurement Directive Implementation Guidebook (2011).
- Ministry of Health and Long-Term Care. Patients First: Action Plan for Health Care (2015).
- Ministry of Health and Long-Term Care. Patients First: A proposal to strengthen patient-centred health-care in Ontario (Discussion Paper) (2015).
- Ontario Chamber of Commerce. Spend smarter, not more: leveraging the power of public procurement (2014).
- Ontario Health Innovation Council. The Catalyst towards an Ontario health innovation strategy (2014).
- PricewaterhouseCoopers. Optimization of Supply Chain Delivery Services for the Ontario Hospital Sector (2013).
- The Conference Board of Canada. Innovation procurement for medical devices – Driving health system improvement (2014).
- The Conference Board of Canada. Innovation procurement in health care: a compelling opportunity for Canada (2011).

- The Conference Board of Canada. Integrated health care: the importance of measuring patient experience and outcomes (2012).
- The Conference Board of Canada. Value-Based Procurement – The new imperative for Canada’s health care (2015).
- The Procurement Office. National Joint Power Alliance’s national cooperative contract solutions and group purchasing in the Canadian Public Sector (2014).

The panel reviewed various models in the following jurisdictions to inform our recommendations to government:

- British Columbia, Canada
- Alberta, Canada
- Saskatchewan, Canada
- Quebec, Canada
- Norway
- Australia
- England
- Germany
- United States of America (including Cleveland Clinic, Vizient and Excelebrate Strategic Health Sourcing)
- Catalonia, Spain.



APPENDIX I

Acknowledgements

The Healthcare Sector Supply Chain Strategy Expert Panel, including the Chair Kevin Empey and Members Elyse Allan, Jodi Butts, Ron Gagnon, Gabriela Prada and Neil Sentance, would like to sincerely thank and acknowledge all those who contributed their knowledge, expertise and insight, sharing their commitment to the development of our recommendations and this report to deliver an Ontario strategy for supply chain management in the healthcare sector.

3M Canada
Abbott Canada
Acelity Canada
Alcon Canada, Inc.
Almonte General Hospital
Bard Canada Inc.
Baxter Corporation Canada
Baylis Medical
Bayshore Healthcare
Boston Scientific Canada
Calea Ltd.
Canadian Association for Pharmacy Distribution Management
Cancer Care Ontario
Cardinal Health Canada Inc.
Central East Community Care Access Centre
Central Ontario Healthcare Procurement Alliance (COHPA)
Central West Community Care Access Centre
Centre for Addiction and Mental Health (CAMH)
Champlain Health Supply Services
City of Ottawa
City of Toronto
Commport Communications International Inc.
Conavi Medical Inc.
Cook Medical (Canada) Inc.
Cornwall Community Hospital
Corporation of the County of Simcoe
Dräger Medical Canada Inc.
GE Canada
GHX Canada
Golden Horseshoe Food and Farming Alliance
Grey Bruce Health Services
GS1 Canada
Guelph General Hospital
Halton Healthcare
Halton Region Paramedic Services
Hamilton Health Sciences
Health Quality Ontario
Healthcare Materials Management Services (HMMS)
Healthcare Supply Chain eXcellence (HSCx)
Healthcare Supply Chain Network
HealthPRO Procurement Services Inc.
Hillcrest Village Care Centre
Hôpital Montfort
Humber River Hospital
Intellijoint Surgical
Inter Medico
Ivey International Centre for Health Innovation
Johnson & Johnson Medical Products Canada
Kuehne + Nagel Canada Ltd.
Logihedron Inc.
Mackenzie Health
Manitoulin Health Centre
Manitoulin-Sudbury District Services Board
Markham Stouffville Hospital
MaRS Discovery District
Marsh Canada Ltd.
McKesson Canada
MedBuy Corporation
MEDEC
Medline Canada Corporation
Medtronic Canada
Mohawk Shared Services Inc. (MSSI)
Muskoka Algonquin Healthcare
Norfolk General Hospital
North East Community Care Access Centre
North West Community Care Access Centre
Northern Supply Chain (formerly Northwest Supply Chain)
Northumberland Hills Hospital
Ontario Association of Community Care Access Centres (OACCAC)
Ontario Bioscience Innovation Organization
Ontario Chamber of Commerce
Ontario Hospital Association
Ontario Long Term Care Association (OLTCA)
Ontario Shores Centre for Mental Health Sciences
Orillia Soldiers' Memorial Hospital
Pembroke Regional Hospital
Peterborough Regional Health Centre
Philips Canada
Pinecrest-Queensway Community Health Centre
Plexxus

Prescott-Russell Paramedic Service
Rainy River District Social Services Administration Board
Region of Peel
Registered Nurses' Association of Ontario (RNAO)
Revera Inc.
Ross Memorial Hospital
Sandy Hill Community Health Centre
Shared Services West (SSW)
Shared Support Services Southeastern Ontario (3SO)
Siemens Canada
South East Community Care Access Centre
Southern Frontenac Community Services Corporation
Southlake Regional Health Centre
Southmedic Inc.
St. Francis Memorial Hospital
St. Joseph's Health Centre
St. Joseph's Health System
St. Joseph's Health System, Group Purchasing
Organization (SJHS-GPO)

St. Michael's Hospital
Stryker Canada
Sunnybrook Health Sciences Centre
Supply Chain Management Association Ontario (SCMAO)
Synaptive Medical
The Elliott Community
The Hospital for Sick Children
The King's Daughters and Sons Meals-On-Wheels
(formerly The King's Daughters Dinner Wagon)
Think Research Corporation
ThoughtWire
Thunder Bay Regional Health Sciences Centre
Timmins and District Hospital
TransForm Shared Service Organization
United Counties of Leeds & Grenville Maple View Lodge
University Health Network
University of Ottawa Heart Institute
VentureLAB
Waterloo Wellington Community Care Access Centre
Zimmer Biomet Canada, Inc.

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