



White Paper

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A Time for Change in Canada's Healthcare Supply Chain Strategy and Practices

Introduction

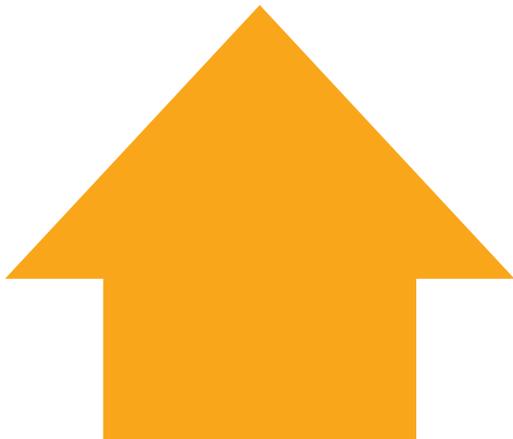
This document was created after a series of interviews with members of Medtech Canada's board, committees, and senior managers. It was developed to highlight some of the serious challenges facing Canada's supply chain for medical devices and products, and to provide insight into possible solutions. The document addresses long-standing supply chain issues, as well as distortions that have arisen from the global COVID-19 pandemic.

The Importance of Canada's Healthcare Supply Chain

A coherent and robust healthcare supply chain is foundational to the proper functioning of Canada's healthcare system. The supply chain functions as a complex global network. It includes healthcare service providers, regional and provincial purchasing organizations, distributors, wholesalers, manufacturers, and of course the patient. Importantly, there is an entire supply chain behind manufacturing – including research and development – in which raw materials and components are sourced from around the world. When the supply chain ceases to function properly, it can have a direct effect on the standard-of-care, putting lives at risk while creating cost structure distortions.

A Case for Change

The COVID-19 pandemic exposed weaknesses in the global supply chain's just-in-time (JIT) delivery model. Canada – like so many countries around the world – scrambled to source high-demand products, particularly personal



protective equipment (PPE). Inventory was limited, and at-home manufacturing capabilities were not sufficient to meet demand. Challenges remain, given that deferred diagnoses, interventions and surgeries will result in a demand surge for a wide range of products, each of which is essential for the system to function.

There is broad agreement that a secure future supply chain requires enhanced manufacturing and storage in Canada. However, not everything can be made in Canada, given volume, cost, and material resource considerations. Canada also cannot stockpile everything. Nonetheless, strategic manufacturing for critical products is reasonable, particularly in concert with practices that include holding and turning greater inventory levels for specific items.

The pandemic is still having a significant impact on the global supply of component parts for medical products. Product shortages and unprecedented increases in transportation costs have resulted in situations where the total cost to deliver is closing in on, or exceeding, the contracted procurement price. These challenges can significantly change the basis and deal structure of previously established contracts. The global supply chain for healthcare products continues to experience service disruptions, resulting in healthcare suppliers and providers not always knowing how much product they are receiving, or when. Ultimately, in order to ensure product availability, it is critical that the medical supply chain have predictable and reliable modes of transport and overall costing information, as well as consistent communication throughout the supply chain.

Components of a Comprehensive Supply Chain Strategy

The supply chain for medical products and technologies has many components, as does a comprehensive supply chain strategy. Medtech Canada proposes that, in order to build a properly functioning supply chain, the following areas should be addressed:

- More and better data
- A realistic approach to a “Made-in-Canada” solution
- Strategic resiliency
- Transition to Value, Cost and Outcomes focus
- Leverage partnerships and embrace collaboration
- Support and expand the role of purchasers
- A commitment to global trade



MORE AND BETTER DATA

The system lacks usage data, and is unable to conduct meaningful scenario planning. As well, many stakeholders within the supply chain are unable to leverage data in order to improve decision-making.

A global view of usage data. Purchase data is ultimately less useful and relevant than usage data. There are many areas where provinces and territories could provide better usage data, and where Canada could also collect data that could then be compared with global standards. This, along with data in critical areas such as waitlists, is an essential tool for assessing how well the supply chain is delivering the right products, at the right time, to the right people.

Improved scenario planning. Many within the medical technology industry are frustrated that forecasting provides limited insight into what is required when the demand picks up. At present, forecasting accountability does not exist. The healthcare system is currently only accountable for inventory management, and hospitals have no ability to store and electronically trace consigned inventory in their IT systems. That said, data is used for so much more than forecasting. In a high-functioning supply chain, data supports more detailed and sophisticated assessments. Better data could provide early indicators for changes in demand for a range of products, creating efficiencies and cost-savings. This would apply to regular fluctuations in the supply chain, as well as to crises. At present, manufacturer and distributor forecasts are based on customer input, yet within RFPs regional data is often inaccurate. Industry can work with customer stakeholders on different probability scenarios, learning from the lesson of the pandemic, in which there was a demand boom in some sectors, while others weakened.

Data complexity and size. The healthcare system needs to deliver more detailed, actionable data around costing models at the case level, to support value-based procurement (VBP). Privacy is a concern, and often acts as a barrier to data sharing. However, it is possible to scrub and collect data from key areas such as EMRs/EHRs, administration, patient and disease registries, health surveys, and clinical trials¹. Inevitably, this presents a challenge given the immense volumes, and the need to deliver coherent information from large data pools.

Integrating data with decision-making. Hospitals often get data through buying groups, and that data is sometimes not reliable since their core competency is not data analytics. Often, purchasers don't understand the critical nature of a product, nor the scope of what a product is able to accomplish. Usage data, properly integrated into a purchaser's decision-making, can help to inform purchasing in a manner that improves patient outcomes, and adds to the consistency and stability to the demand structure.

Industry's role. Manufacturers and distributors have data on volumes and predictors. This information, which is at the SKU level of a product offering, could be shared more widely. However, this only represents about half of the needed data – industry really needs to have usage data to be impactful.



Prioritize mutual assistance and transparency. Our healthcare system continues to function with an out-dated and inefficient purchasing model. There is a lack of data management, yet there are many opportunities for industry to collaborate with hospital purchasers and buying groups to update this model. A possible solution is to prioritize the improvement of overall delivery models in an open and transparent forum.

A REALISTIC APPROACH TO “MADE-IN-CANADA”

Support for at-home manufacturing requires a sophisticated understanding of the global supply chain, as well as what Canada is capable of and what it might require in a crisis.

The right products. Domestic manufacturing to handle ramp-up requires an assessment of what's important. Ideally, a resilient supply chain can maintain domestic manufacturing, and also provide a robust mix of suppliers. This can work for PPE, which has some capacity in Canada, but needs to account for labour costs and delivery models.

Still global. Local production will have a limited but important role for specific products, but even at-home manufacturing will likely require components that are sourced from the global supply chain. We need to be realistic about what Canada can, and cannot, do. For example, we now have a chip shortage, which also affects medical devices. Central processors are needed for IV pumps, ventilators, and technologies needed for surgical procedures, among other product areas. Even common supplies that are unrelated to COVID-19 are in very high demand, such as wound care products for community-based support, are impacted by global supply dependencies and solutions.

Research and development. Investment in R&D in Canada is critical in order to support domestic economic activity, to attract foreign investment, and to ensure long-term, sustainable economic growth. In order for this to succeed, Canada must be able access raw materials from the global supply chain.

Managing lead times. Some clinical procedures can ramp up easily but may hit a wall with products that have long lead times in a disrupted supply chain. This is a global problem; Canada, at ~2% of the global market, is competing with bigger jurisdictions like Japan and France, which have better profit margins for supplier organizations.

Digital efficiency. Digital platforms can assist with planning, streamlining delivery models and reducing the need to maintain large product volumes.



STRATEGIC RESILIENCY

There are many practical steps Canada can take to ensure that our healthcare supply chain is more resilient. Chief among these is ensuring that there is a healthy vendor community that can mitigate risk and secure product supply in a range of scenarios.

Multiple suppliers. A resilient supply chain requires more than one vendor to ensure flexibility. It should be noted that having more than one vendor can then result in planning for category demand, allowing each manufacturer potentially to have a portion of the business.

Commitment to volume. Without a committed volume, a manufacturer or distributor cannot hold inventory “just in case it is needed”. A guaranteed minimum volume would protect individual companies when there is more than one supplier on a contract.

Split sourcing. Split sourcing (80/20 or 60/40) can work, as long as there is a commitment to purchase the inventory. Should a primary vendor falter on their awarded volume commitments, products can be sourced from the secondary supplier. One possible risk that purchasers need to be made aware of is that having lower quantities spread across multiple sources could result in price increases.

Inventory control. Some inventory needs to be held in Canada in case the supply chain is shut down. To avoid past errors, regular audits and strong inventory management (e.g. FIFO) will be critical in order to manage shelf-life risk. There should also be semi-regular assessments of which products are best suited to stockpiling. During the pandemic, the demand was for N95 masks and other

PPE; however, in the future, inventory control could extend to higher-cost technologies, with modest volumes of replacement parts set aside for high-tech devices, instrumentation, etc.

End user data reporting. Sharing accurate and timely data on the actual usage of products is a critical component of efficient supply chain management. COVID-19 has highlighted the importance of sharing such data, given the significant change in demand for many products (both increasing and decreasing demand). The data supplied by end-users and/or procurement groups can help suppliers adjust their manufacturing schedules. This will help ensure the right products are available at the time they are needed.

TRANSITION TO VALUE

An effective transition to a functional and resilient supply chain that champions value will require transformation of the RFx/procurement process. This will involve a move beyond low-price as the dominant procurement priority, and a prioritization of technologies that deliver the best patient and operational outcomes.

Transform the RFx/procurement process. The RFP/procurement process needs to be updated. This should also be done in the context of Value Based Procurement (VBP), in which the value of a product is assessed based on how it relates to improved patient or operational outcomes, and cost savings to the larger system. RFPs can be structured to support VBP, ensuring that the right technologies are procured, while also awarding points for supply chain resiliency. For example, operational performance can be considered when awarding contracts, perhaps with higher scores for those companies willing to embrace the added expense of carrying inventory for longer time frames, or who hold inventory in Canada and not the US.

Beyond low-price. An approach that over-emphasizes price tends to commoditize demand². In this scenario, a supply chain can address recurrent risk, but is much less resilient to disruptive risk³, such as during a pandemic, or when the Suez Canal is closed. Within Canadian healthcare, it is critical to avoid a win big / lose big situation, which often comes with a cheapest price mentality, and which puts the supply chain at risk.

The right technologies. Investments in innovative technologies can deliver better access and improved outcomes. To the extent that these products are more reliable, and used less often, there is also less supply chain risk.

LEVERAGE PARTNERSHIPS AND EMBRACE COLLABORATION

For partnerships and collaboration to deliver optimal results, they need to be broadly inclusive, to move beyond silos, and to have jurisdictional support.

Broad inclusion. Multinational enterprises (MNEs), small and medium enterprises (SMEs), governments, and supply chain stakeholders within procurement, must work together to ensure supply chain resiliency. It is important to avoid terms and conditions that either discourage MNEs or block off SMEs. Supply chain experts can work closely with providers to address shortages, and to look for new ways to drive better outcomes, including using products in new ways. It might be possible to formalize engagement with key stakeholders to drive system-level efficiencies, giving both providers and suppliers the power to take a deeper dive into demand scenarios.

Adaptive partnerships. The COVID-19 pandemic has placed unprecedented pressures on global supply channels, reaching beyond the medical device industry. In some instances, freight costs have increased by more than 300% due to a lack of space for containers onboard ships, as well as a global shortage of empty containers. To help ensure a continued supply of medical devices in Canada, suppliers and end-users need to work collaboratively to find permanent and/or temporary cost solutions.

Beyond silos. At present, everything is in silos, and there isn't a holistic approach. Future demand profiles will be fluid, and require a more collaborative approach to put effective forecasting in place, adjusting for every week/month/quarter.

Jurisdictional support. Hospitals, clinicians, and purchasing organizations cannot solve this on their own. Instead, the creation of permanent and systemic change requires meaningful action at the jurisdictional level. Only then will funding drive value throughout the medical technology supply chain.

SUPPORT AND EXPAND THE ROLE OF PURCHASERS

As stakeholders, many purchasers in Canada play a narrow role in the supply chain, with a heavy focus on procuring products at the lowest price. There is room to continue

current provincial initiatives to expand the category management role wherein purchasing has a greater focus on data-sharing, value enhancement, and risk-assessment.

Develop incentives and confidence on the demand side. Staffers and bureaucrats within purchasing organizations have incentives primarily targeted at price savings, whereas procurement professionals within industry are paid to hit service levels. Some suppliers lack confidence in the purchasers to tell them what they need. The onus then falls on suppliers, with account executives spending inordinate amounts of time on forecasting.

Better visibility. Provincial governments could establish websites, with access reserved for vendors of record, that provide hospital-level procedure volume forecasts for specific time periods. Ideally, vendors would have the right to engage and query the rationale behind the purchasing orders in the context of these forecasts.

Know where the risk is. Purchasers and suppliers can take a greater collaborative approach to contingency planning and risk assessment. For example, consumables for surgical could be the next big issue in the supply chain. Given that most suppliers don't know all the products that are involved in each procedure, communication and planning with purchasers and end users becomes increasingly important. There may also be post-procedural, after-care issues for some products which will need to be factored into the continuum of care pathway.

A COMMITMENT TO TRADE

Open markets. It is important to advocate for open markets with the context of the USMCA, CETA, and CFTA. Supply chain resiliency almost certainly includes an important role for the United States. Politicians on both sides of the border need be wary of economic nationalism, including the usage of the Defense Production Act in the United States.

The law matters. Policies to ensure manufacturing in Canada must still be compliant with international law, and be able to withstand accusations of protectionism.

RECOMMENDATIONS

Elevate the supply chain function to a strategic level. The above-mentioned initiatives make one thing clear: Canadian healthcare systems require an "all-hands-on-deck" approach to bring about long-term, sustainable changes to the supply chain. This will require buy-in from senior-level decision-makers committed to a strategic view that results in meaningful change across the country.

Engage with suppliers from Canada and around the world.

The supply chain, globally and within Canada, is highly complex. It is as an ever-changing product and materials ecosystem. High-level stakeholders must engage with suppliers from Canada and around the world on a semi-regular basis, in order to remain attuned to fluctuations, such as the port and rail disruptions recently seen in British Columbia and Quebec, the rising cost of shipping containers from overseas, and the shortage of microchips. It is necessary to ensure that there is sufficient supply of all products. This is critical: a shortage in PPE, or bandages, or sponges, could have as dramatic an effect on the ability to ramp up surgeries and deliver post-operative care as the availability of a pacemaker or an orthopedic implant.

Address funding allocation to support Value Based Procurement (VBP).

The supply chain cannot deliver greater value unless and until funding allocation is revised. At present, annual budgets are dedicated to silos and low-price policies at the point of procurement. As a result, they actively disincentivize upfront investments in life-saving technologies. The continued transformation of the RFX/procurement process should be done in the context of Value based Procurement (VBP), which requires an understanding of cost over distance and time, including manufacturing and logistics, facility workflow and resource allocation, as well as the costs incurred throughout the treatment journey. Most importantly, clinical outcomes must also be factored in as a top priority.

Address policy issues. The lack of policy consistency at both the federal and provincial levels is a significant challenge. Improvements in policy can result in dramatic cultural change. This is particularly true with regard to collaboration, and the need for stakeholder involvement in areas such as data access/analytics, and structural issues related to the adoption of VBP. It is possible, as in Europe, to introduce legislation for VBP without being overly prescriptive. As well, warehoused product in the supply chain could work if there are prime vendors working under a clear policy environment, with scheduled audits and strong inventory management. Government oversight can play a role in ensuring there is

shared risk when securing sufficient inventory for hospitals and group purchasing organizations.

Invest. Canada spends 11.5% of its gross domestic product (GDP) on healthcare⁴. Many experts argue that funding needs to be expanded into cost-effective treatment areas⁵. Others argue that, overall, pouring more money to support structural inefficiencies makes little sense, given that per capita spending has been steadily increasing every year⁶. Instead, strategic investments in areas like VBP can have a transformative effect, improving outcomes, creating efficiencies, and delivering system-wide cost savings⁷. Investments in digital technology can also solidify more robust supply chain practices, and reduce risk⁸. Canada already has some notable success stories in this area⁹.

A role for industry. Industry can raise its game by investing in training and education programs to develop stronger skills in VBP and improve the understanding of category management for their sales and contract teams across the country. Procurement organizations can continue to evolve and improve with industry collaboration to focus on outcomes and deliver cost effective value to the system not simply lower transactional prices.

1. https://www.vsb.org/docs/Value_based_Purchasing.pdf
2. <https://www.imd.org/research-knowledge/articles/Fighting-commoditization/>
3. <https://sloanreview.mit.edu/article/reducing-the-risk-of-supply-chain-disruptions/>
4. <https://www.cihi.ca/en/health-spending>
5. <https://www.cmaj.ca/content/190/39/E1162>
6. <https://www.statista.com/statistics/436378/total-health-spending-per-capita-canada/>
7. <https://www.supplychain.nhs.uk/programmes/value-based-procurement/>
8. <https://www.cips.org/supply-management/news/2020/august/Healthcare-supply-chains-more-resilient-during-pandemic/>
9. <https://www.cfhi-fcass.ca/docs/default-source/itr/tools-and-resources/vbhc/vbhc-toolkit-e.pdf>

ABOUT MEDTECH CANADA

Medtech Canada is the national association representing Canada's innovative medical technology industry. Representing approximately 100 medtech companies (ranging from Canadian-owned to multinationals), Medtech Canada works closely with the federal and provincial-territorial governments, health professionals, patients and other stakeholders to deliver a patient-centred, safe, accessible, innovative and sustainable, universal healthcare system supported by the use of medical technology.