



**Queen's Health Policy Change Conference Series**  
**Plenary Panel Presentation:**  
**Learning from Supply Chain Management Initiatives**

June 7, 2016, 11:45 a.m.

The Arcadian Court, Toronto, Ontario

**Speaking Notes**

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**CHECK AGAINST DELIVERY**

There aren't many organizations globally that source their raw material from their friends and neighbours.

You likely know Canadian Blood Services as the organization asking you to donate blood. Indeed, for almost 20 years now, the generosity of Canadians has supported a national supply chain designed to meet the transfusion needs of every patient and every hospital in the country.

To put the scale of our operations in context, last year Canadian Blood Services provided more than 1.2 million units of perishable blood products to about 700 hospitals and clinics across the country. We did this through the efforts of over 4,000 employees, operating out of 36 facilities coast to coast, and relying on approximately 475,000 active blood donors. Our distribution fleet covers about six million kilometres every year. Our budget is just over \$1 billion annually.

We manage and have complete traceability at all times of these one million plus biological products, each of which has their own unique lot number. Our products have a short shelf life and exquisitely rigid temperature constraints, which means we cannot stockpile them, and we have to ensure cold-chain integrity across vast distances and fluctuating environmental conditions. Furthermore, given the critical nature of these therapeutic products, we must ensure the supply chain system has minimal likelihood of error, achieves optimal safety and quality, and is cost-effective. That's the reality of our industry. And you think the dairy industry has tough supply chain issues!

To keep getting the right product, to the right place, at the right time, we've had to transform our supply chain and infrastructure over the past two decades. Many will remember the tainted blood crisis of the 1980s and 1990s. In 1998, we inherited this fragmented blood supply system that was plagued with critical quality failures, badly aging facilities and structural complexity. Since then, we've worked with our funders, the provincial and territorial ministries of health, and our regulator, Health Canada — and with key stakeholders — to restructure and modernize our offerings, and regain the trust of Canadians.

Although we still refer to it as the “blood system”, the integrated supply chain that we operate today allows provincial and territorial governments to benefit from a cost-shared investment in a single entity that meets patient need in five key health-care areas:

- fresh blood products for transfusion medicine;
- plasma protein drugs, such as immune globulins, albumin and blood-clotting factor concentrates for a wide variety of clinical conditions;
- stem cell products from adult donors or stored umbilical cord blood, for transplantation purposes;
- national registries and enabling programs for organ donation and transplantation; and
- in some provinces, diagnostic services.

This product and service delivery model is supported and enriched by a world-class research and innovation program focused on optimizing transfusion and transplantation science and medicine, as well as ensuring ongoing product and process development across our supply chain. And although we are an arm’s-length, not-for-profit organization with a social purpose, we are also a biological drug manufacturer, subject to the same

regulatory controls and oversight as vaccine makers and other drug manufacturers. To our knowledge, we are the only publicly funded, cost-shared organization of this type, operating a health-service supply chain across the grain of provincial health systems in this country.

To get to where we are today, we made a series of changes to ensure patient safety and product quality. In our early years, we integrated a dozen or so regional, disconnected supply chains into one seamless national system. We implemented a shared inventory, a robust logistics infrastructure, an information management system for product traceability, and advanced blood testing technologies. We also introduced standardized processes to ensure uniform product quality, opened stand-alone blood collection sites, and merged and consolidated manufacturing and testing activities across the country.

To ensure we meet the complex, dynamic and evolving needs of patients, we deploy supply chain best practices such as demand forecasting, sales and operations planning, data warehousing and business intelligence.

These tools and capabilities ensure we can drive economy of scale and achieve substantial efficiencies in procurement, manufacturing, storage and

distribution. They also allow us to leverage more integrated relationships with customer hospitals to redistribute products nearing the end of their shelf-life, to higher-demand areas before they expire, and to manage regional shortages when they arise.

On a more operational level, we've also done substantial work to optimize our production line focusing on value and outcomes. We have been strong proponents and users of Lean principles for some time, but we took a great leap forward this past year when we implemented the world-famous Toyota Production System (from which Lean was originally developed) at our flagship site in Brampton ON. Canadian Blood Services was the first non-profit Canadian organization to partner directly with Toyota to learn and implement the TPS into its operations. For us, this is the epitome of supply chain excellence in practice.

Like most other blood system operators internationally, we are aggressively transforming our business to respond to fiscal, demographic, technological and societal shifts. And like many of our health-system partners here in Canada, we are mid-stride between a manual work environment and a fully digital future.

On one hand, we run an industry-leading blood information system called e-Progesa, we use barcoding in our production environment to track and trace the path of blood components, and have fully automated testing equipment. Yet at the same time, we still use a paper-based donor screening process, and our main method today of communicating with ordering hospital is by fax!

I am pleased to say, though, that next month we will launch a major system-wide digital transformation of our donor clinic environment across the country - our “automated supply chain.” This digital transformation will see the introduction of over 6,000 pieces of electronic equipment across our network, will eliminate all paper records on the frontend of our supply chain; will significantly reduce the potential for errors, thereby enhancing quality and safety, and will deliver efficiency and productivity gains measureable in millions of dollars saved per year. And — equally importantly — it will both improve the flow of donors through our clinics and provide a greatly enhanced employee working environment. Coming soon to a blood donor clinic near you, July 3<sup>rd</sup>!

We also see great potential in a truly integrated end-to-end supply chain, where Canadian Blood Services oversees and manages hospital blood

bank inventories, reducing system complexity, driving efficiency and optimizing patient care. Through vendor-managed inventory, or VMI, we can decrease hospitals' workload and create a seamless and transparent inventory of all products, from source at Canadian Blood Services to patient bedside. We are currently in the exploratory stages of VMI, and hope to put forward a pilot project that could be scaled up regionally or nationally. Driving this sort of change in a federated, multi-jurisdictional health system, though, is never easy

So what can our experience at Canadian Blood Services offer others? In my view, there are two essential "take-aways."

- 1. The first is that scaling up health-care service delivery in a pan-Canadian manner makes for good health policy.** Leveraging the entire Canadian population, rather than single jurisdictional systems affords greater gains in efficiency, system performance and enhanced patient care.

In some cases, we have even pushed the supply chain boundaries globally, to widen the scope of searches and potential patient matches,



by linking our stem cell programs to similarly high-quality registries and cord blood banks around the world.

**2. The second take-away is to rethink how we achieve long-term**

**value.** There is a growing trend toward reorienting health-system procurement, ensuring both quality of patient care and improved system-level performance are key indicators of success, along with cost containment. On this front, Canadian Blood Services has almost 20 years' experience.

We use a publicly tendered process to bulk purchase about 45 brands of biological drugs worth about \$600 million annually. We include stakeholder input in the product selection process, and are able to achieve competitive pricing without sole sourcing or sacrificing product choice.

In terms of best pricing, we were able to negotiate \$600 million in cost savings or avoidance over five years (2013 to 2018) and have also driven pricing for some of the major classes of these drugs to below 2009 prices. And last March, we negotiated an additional \$60 million in

savings per year as a result of a national RFP for only two drugs used to treat patients with hemophilia.

Leveraging supply chain best practices, we have been able to deliver some of the gains associated with a national pharmacare program, such as pan-Canadian equity of access and quality, security of supply, product choice and optimal costs.

I'll close by sharing this anecdote: a recent infographic tweeted by the Supply Chain Management Association called out "keeping the blood flowing" as the "coolest job" in supply chain management. You may never have thought of the blood and transplant system in that way before. Our supply chain is a lifeline that connects generous donors to grateful recipients, in a way that delivers long-term value for all Canadians. To be part of that is a privilege, and indeed pretty cool!

Thank you.