Canadian Healthcare Supply Chain Standards Survey
Part of the Canadian Healthcare Supply Chain Standards Project
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The contents of the Canadian Healthcare Supply Chain Standards Survey are based on responses received from the survey participants.

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Canadian Healthcare Supply Chain Standards Project
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The Canadian healthcare sector is ready for global supply chain standards.

The Canadian Healthcare Supply Chain Standards Survey, conducted by the Innovative Research Group Inc. (INNOVATIVE) for GS1 Canada, gauges the Canadian healthcare sector’s readiness to embrace and adopt global supply chain standards that will modernize and advance Canada’s healthcare system.

Global supply chain standards enable products and information to move accurately, efficiently and quickly across jurisdictions and borders. GS1 is the world’s leading supply chain standards organization. As such, global GS1 standards like bar codes and other automatic product identifiers enable traceability, efficiency, cost savings and a host of key benefits in various industries, including healthcare.

“A lot of other industries have used GS1 standards very successfully, and it’s about time healthcare caught up,” states Jade Karsin, Regional Manager, Procurement, Winnipeg Regional Health Authority.

Advancing Canada’s healthcare system into the 21st century is a balancing act between managing increasing costs and optimizing existing processes. Reducing waste – both human resource and material – is central to making the flow of products and information in healthcare more efficient and safe. Addressing this need through global supply chain standards is critical to improving patient safety, decreasing costs and enhancing productivity.

The results of the Canadian Healthcare Supply Chain Standards Survey illustrate that the Canadian healthcare sector is ready to adopt global GS1 supply chain standards, and also illustrates that the movement towards these standards has already begun. The survey results also demonstrate that the majority of providers and suppliers within Canada’s healthcare sector support the use of global GS1 supply chain standards to modernize Canada’s national healthcare supply chain and improve patient safety, optimize supply chain processes, enable traceability, and maximize the intellectual capital of healthcare professionals across the country.

Key Survey Findings

- 89% of healthcare providers and 75% of product suppliers believe global GS1 supply chain standards will benefit the sector. The top four benefits for implementing global GS1 standards noted by both groups are: patient safety, enhanced product traceability, cost savings and error reduction.

- 48% of healthcare providers and 40% of product suppliers have been implementing, or have completed a strategic initiative, to increase interoperability between supply chain partners since 2008.

- 40% of all medical products and surgical equipment purchase order (PO) transactions are being processed manually, consuming a considerable amount of industry resources.

- Product suppliers perceive that 42% of healthcare providers process POs manually. The reality is that 90% of healthcare providers are able to process purchase orders via Electronic Data Interchange (EDI).

- 52% of healthcare providers and 72% of product suppliers either use, or plan to use, bar codes in the next two years to capture, store, retrieve and transmit medical/surgical product information.
Research Methodology

The Canadian Healthcare Supply Chain Standards Survey set out to identify:
1. How many Canadian healthcare providers are e-commerce enabled.
2. The relationship between Canadian healthcare providers, their suppliers and solution providers – including what kind of barriers these trading partners may impose regarding supply chain standards adoption, and e-commerce practices.
3. Challenges to adopting e-commerce standards in the healthcare sector.
4. Challenges to adopting standardized product identifiers, data attributes and implementation tools to enable data synchronization between trading partners.

INNOVATIVE was commissioned to conduct this study using a multi-mode research methodology including qualitative and quantitative components. The study included in-depth one-on-one interviews and an online survey with key healthcare decision-makers in supply chain management.

Qualitative research was used to explore the perception of various stakeholder groups to standardization of the supply chain in the healthcare sector. A random selection of 19 individuals holding senior positions - representing shared service organizations (SSOs), healthcare providers, product suppliers, group purchasing organizations (GPOs), and technology solution providers - were interviewed by telephone between May and June 2009. (see figure 1.1).

An online survey was later conducted to determine which drivers impact the barriers and challenges to adopting e-commerce standards. 294 representatives within Canadian healthcare supply chain management participated between September 25 - October 23, 2009. (see figure 1.2).

Participants included both GS1 Canada members and non-members. An unweighted probability sample for the healthcare providers (n=104) would have an estimated margin of error of ±8.8 percentage points, 19 times out of 20; while an unweighted probability sample for the product suppliers (n=190) would have an estimated margin of error of ±7.0 percentage points, 19 times out of 20. The margin of error will be larger within sub-groupings of the sample.
About this Study

The global reality of the healthcare industry today includes worldwide threats of medical errors, counterfeiting and product diversion. As a result, country-specific or proprietary supply chain standards are neither sufficient nor effective. Global supply chain standards shared across borders and between jurisdictions throughout the healthcare industry are integral to identifying, authenticating and moving products. They also enhance modernization efforts, making back office functions more efficient, and freeing up both time and resources for direct patient care.

Challenges to supply chain standards adoption:

- Lack of industry knowledge concerning which Canadian hospitals are e-commerce enabled, and the relationships and barriers they have with suppliers and technology solution providers.
- Lack of standardized healthcare e-commerce transactions.
- Lack of standardized product identifiers, data attributes and implementation tools to enable data synchronization among trading partners.

To address these key challenges, GS1 Canada, through its healthcare sector strategy – Carenet – is spearheading a major two-phased national initiative – the Canadian Healthcare Supply Chain Standards Project (the Supply Chain Standards Project). Developed in collaboration with industry, the Supply Chain Standards Project aims to drive national adoption of consistent, global supply chain standards to enable electronic procurement, interoperability and traceability across the healthcare sector to ultimately modernize Canada’s healthcare sector.

The Canadian Healthcare Supply Chain Standards Survey was conducted during the first phase of the Project. It equips GS1 Canada with the most current information to better address the e-supply chain needs of the Canadian healthcare sector and establishes benchmarks for the Supply Chain Standards Project.

Healthcare Provider Segmentation

Among the 104 healthcare providers who participated in the survey, 26 were representatives of shared service organizations (SSOs), which represent groups of hospitals and, in many cases, oversee procurement activities for all health-related services (i.e. pharmacy, mental health, long-term care, acute care, etc.).

Table 1.1

<table>
<thead>
<tr>
<th></th>
<th>BC</th>
<th>Alberta</th>
<th>Prairies</th>
<th>Ontario</th>
<th>Quebec</th>
<th>Atlantic</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare Organization</td>
<td>4</td>
<td>3</td>
<td>8</td>
<td>54</td>
<td>2</td>
<td>7</td>
<td>78</td>
</tr>
<tr>
<td>SSO</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>12</td>
<td>0</td>
<td>4</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>5</td>
<td>9</td>
<td>66</td>
<td>2</td>
<td>11</td>
<td>104</td>
</tr>
</tbody>
</table>
State of Readiness

“...I’ve seen the benefits - not only from close hands-on clinical perspective, but at a micro and macro level. It’s very important to hospital staff, our community and patients - that patients can count on the product arriving to them - the right product, at the right time. I have been involved in GS1 right from the start because of my strong belief in the benefits to patient safety.”

– Susan Smith, General Manager, Mohawk Supply Chain Services, Ontario
The Canadian healthcare sector is ready to support global GS1 supply chain standards.

A majority of the healthcare providers (89%) and product suppliers (75%) who participated in this survey believe that global GS1 supply chain standards will benefit their sector (see “significant benefit” + “moderate benefit” in figure 2.1). Both healthcare providers and product suppliers agree that the top four benefits for implementing global standards are enhanced product traceability, cost savings, error reduction and patient safety (figure 2.2: top four benefits of global standards). They recognize the benefits of using GS1 standards and believe that the benefits of e-commerce enabled transactions based on these standards far outweigh the costs of implementation.

**Benefits of GS1 Standards to healthcare sector**

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Healthcare Providers</th>
<th>Product Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant benefit</td>
<td>70%</td>
<td>42%</td>
</tr>
<tr>
<td>Moderate benefit</td>
<td>42%</td>
<td>19%</td>
</tr>
<tr>
<td>Little benefit</td>
<td>19%</td>
<td>7%</td>
</tr>
<tr>
<td>No benefit at all</td>
<td>0%</td>
<td>1%</td>
</tr>
</tbody>
</table>

*“Don’t know” not shown*

**Preparing for system-wide interoperability.**

Since 2008, at least 48% of healthcare providers and 40% of product suppliers have been implementing or have completed a strategic initiative to implement systems and standards to drive automated processes within the healthcare supply chain. Among those who have launched strategic initiatives, the reasons most commonly cited are: cost savings, reducing purchase order (PO) processing errors, traceability of products, and supporting patient safety initiatives (see figure 2.3).
Opportunity to increase efficiency through Electronic Data Interchange (EDI).
EDI is the exchange of business data from one computer to another computer using a public standard format. Adopting EDI systems facilitates the electronic exchange of business transactions (e.g. POs and invoices) and results in a more efficient, paperless and traceable healthcare global supply chain.

The survey results demonstrate that there is significant opportunity for greater integration and increased use of standards-based, e-commerce transactions in the healthcare sector. Supplier misconception concerning healthcare provider readiness is a potential barrier to integrating and increasing the use of e-supply chain standards.

Estimated ability to execute supply chain transactions through EDI:

Estimated percentage of trading partners that only process purchase orders manually rather than through EDI:

While product suppliers perceive that a large number, 42% of healthcare providers process POs manually, the reality is that 90% of healthcare providers have the ability to process POs via EDI (see figure 2.4). These results reflect the significant gap in perception between trading partners, representing a tremendous opportunity for healthcare providers to engage product suppliers to utilize EDI.
Impact of EDI-Enabled Transactions

The time spent manually processing transactions and correcting errors takes up considerable resources within Canada’s healthcare sector - resources that could be directed towards frontline patient care.

Approximately 40% of all medical products and surgical equipment PO transactions are being processed manually (see figure 3.1). The survey results demonstrate an increase in errors associated with manual transactions (see figure 3.2). Resolving these errors consumed significant amount of industry resources, as illustrated below. (see figure 3.3).

EDI significantly reduces the manual labour used to input transactions and will therefore reduce errors. With reduced manual labour, EDI helps accelerate the order-to-cash cycle time. For healthcare providers, EDI-enabled transactions show a 36% reduction \([11\%-7\%]/11\% = 36\%\) in purchase order errors over manually-processed transactions. For product suppliers, EDI-enabled transactions show a 40% reduction in purchase order errors \([10\%-6\%]/10\% = 40\%\) over manually-processed transactions (see figure 3.2).

“We are pleased to announce our commitment to implement GS1 standards. Medbuy believes that resolution of inefficiencies related to data management through adoption of global standards must become an industry imperative.”
– Rick Cochrane, Chief Executive Officer, Medbuy

Estimated purchase order transaction volume for medical/surgical equipment executed manually (i.e. fax, telephone, email) vs. EDI:

Estimated volume of processing errors associated with purchase order transactions for medical/surgical equipment:

Estimated percentage of staff time within a supply chain management group spent resolving order processing errors:

Greater adoption of EDI-enabled transactions will lower the amount of time and resources devoted to resolving order processing errors.
“There are many options on how to communicate a single piece of data. Introducing these standards reduces the need for time-consuming maintenance with varying methods of communicating data. The GS1 standards streamline these automatic procedures. These standards also prevent the user from second-guessing whether or not they will receive a response acknowledging receipt of a given transaction.” – Rob West, Executive Vice-President, Medical Mart Supplies
Among organizations that are EDI-enabled, Purchase Order (850), Order Acknowledgement (855) and Invoice (810) are the most commonly used business transactions among both healthcare providers and product suppliers (see figure 4.1).

Specific transactions that are regularly transmitted through EDI systems:

- Purchase Order (850) - 90%
- Order Acknowledgement (855) - 71%
- Invoice (810) - 23%
- Advance Ship Notice (856) - 19%
- Electronic Payment / Remittance Advice (820) - 18%
- Functional Acknowledgements (997) - 12%
- Price / Sales Catalogue (832) - 8%
- Advance Ship Notice (856) - 4%
- Electronic Payment / Remittance Advice (820) - 3%
- Functional Acknowledgements (997) - 2%
- Price / Sales Catalogue (832) - 2%
- Product Transfer and Resale Report (867) - 2%
- Warehouse Stock Transfer Receipt Advice (944) - 1%
- Product Activity Data (852) - 7%
- Warehouse Shipping Order (940) - 6%
- Warehouse Inventory Adjustment Advice (947) - 4%

Healthcare Providers (n=93)

- Purchase Order (850) - 86%
- Order Acknowledgement (855) - 67%
- Invoice (810) - 62%
- Electronic Payment / Remittance Advice (820) - 50%
- Advance Ship Notice (856) - 47%
- Functional Acknowledgements (997) - 34%
- Price / Sales Catalogue (832) - 24%
- Advance Ship Notice (856) - 4%
- Electronic Payment / Remittance Advice (820) - 3%
- Functional Acknowledgements (997) - 2%
- Price / Sales Catalogue (832) - 2%
- Product Transfer and Resale Report (867) - 2%
- Warehouse Stock Transfer Receipt Advice (944) - 1%
- Product Activity Data (852) - 7%
- Warehouse Shipping Order (940) - 6%
- Warehouse Inventory Adjustment Advice (947) - 4%

Product Suppliers (n=139)
“Coming from a provincial supply chain organization, it’s essential that the data that we have is standardized in order for us to cope with so many different types of data. We have seven different systems. And if we don’t employ standards, it’s just impossible for us to make sense of that much data.”

– David Loukras, Provincial Director, Performance, Integration & Transformation, BC Health Authority Shared Services Organization, British Columbia
Healthcare providers and product suppliers agree that standardized product codes will enable better supply chain function. The Canadian Healthcare Supply Chain Standards Survey found that there is significant buy-in to implement standardized product codes across the healthcare sector, among both healthcare providers and product suppliers.

**Figure 5.1**

<table>
<thead>
<tr>
<th></th>
<th>Healthcare Providers</th>
<th>Product Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides better product traceability</td>
<td>46%</td>
<td>30%</td>
</tr>
<tr>
<td>Enables fast and efficient recall</td>
<td>45%</td>
<td>23%</td>
</tr>
<tr>
<td>Reduces the number of purchase order (PO) errors</td>
<td>33%</td>
<td>26%</td>
</tr>
<tr>
<td>Increases patient safety</td>
<td>37%</td>
<td>26%</td>
</tr>
<tr>
<td>Frees up time and budget for better patient care</td>
<td>26%</td>
<td>17%</td>
</tr>
<tr>
<td>Significant cost reductions</td>
<td>33%</td>
<td>26%</td>
</tr>
<tr>
<td>Removes healthcare provider liability on mislabeling</td>
<td>13%</td>
<td>11%</td>
</tr>
<tr>
<td>Important anti-counterfeit measure</td>
<td>16%</td>
<td>11%</td>
</tr>
<tr>
<td><strong>“Don’t know” not shown</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Somewhat agree</th>
<th>Neutral</th>
<th>Somewhat disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides better product traceability</td>
<td>46%</td>
<td>46%</td>
<td>5%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Enables fast and efficient recall</td>
<td>43%</td>
<td>43%</td>
<td>6%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Reduces the number of purchase order (PO) errors</td>
<td>48%</td>
<td>48%</td>
<td>8%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Increases patient safety</td>
<td>43%</td>
<td>43%</td>
<td>11%</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Frees up time and budget for better patient care</td>
<td>47%</td>
<td>47%</td>
<td>11%</td>
<td>12%</td>
<td>6%</td>
</tr>
<tr>
<td>Significant cost reductions</td>
<td>37%</td>
<td>37%</td>
<td>16%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Removes healthcare provider liability on mislabeling</td>
<td>38%</td>
<td>38%</td>
<td>25%</td>
<td>9%</td>
<td>5%</td>
</tr>
<tr>
<td>Important anti-counterfeit measure</td>
<td>33%</td>
<td>33%</td>
<td>28%</td>
<td>6%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>“Don’t know” not shown</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
The healthcare industry largely agrees that adopting global GS1 supply chain standards will lead to increased integration among trading partners and greatly benefit the healthcare sector. However, there are a number of challenges delaying supply chain transformation. This survey revealed that overall, the sector views product suppliers as the biggest barrier to adopting GS1 standards (see figure 6.1).

The perceived cost of implementing global GS1 supply chain standards (i.e. using the GTIN rather than proprietary product codes) and the perceived potential for commoditizing products are cited as the main reasons why some product suppliers are reluctant to adopt global GS1 standards (see figure 6.2).

**Industry perceptions - Why product suppliers present the most significant barrier to adopting GS1 Standards:**
Industry is concerned about the readiness of technology solution providers to enable standards-based e-commerce between trading partners. A recent study conducted in 2009 of major materials management information systems (MMIS) by GS1 US (Assessment of MMIS Readiness, GS1 US 2009) revealed that technology solution providers are well on their way to supporting GS1 standards. These respondents represent a high percentage of technology solution providers to hospitals in the US (see below for participant list).

**Technology solution providers’ support of GS1 Global Trade Item Number (GTIN) in bar codes:**

<table>
<thead>
<tr>
<th>Support GTIN</th>
<th>42%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will support in next 6 months</td>
<td>11%</td>
</tr>
<tr>
<td>Will support next year</td>
<td>11%</td>
</tr>
<tr>
<td>Will support in next 2 years</td>
<td>11%</td>
</tr>
<tr>
<td>Will support in more than 2 years</td>
<td>5%</td>
</tr>
<tr>
<td>No plans to support standard</td>
<td>21%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Technology solution providers’ support of GS1 Global Location Number (GLN) in products or systems:**

<table>
<thead>
<tr>
<th>Support GLN</th>
<th>47%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will support in next 6 months</td>
<td>5%</td>
</tr>
<tr>
<td>Will support next year</td>
<td>11%</td>
</tr>
<tr>
<td>Will support in next 2 years</td>
<td>11%</td>
</tr>
<tr>
<td>Will support in more than 2 years</td>
<td>5%</td>
</tr>
<tr>
<td>No plans to support standard</td>
<td>21%</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0%</td>
</tr>
</tbody>
</table>

Major Technology Solution Providers to the Healthcare Industry

2009 GS1 US Assessment of MMIS Readiness Survey Participants:

- Lawson
- McKesson PMM
- Oracle (Peoplesoft, JDE)
- Meditech
- Paragon
- HCA/Smart
- SAP
- Caduceus Systems
- CPSI
- Mediclick
- Healthland (Dairyland)
- Keane
- EHS Commerce
- Siemens/SMS
- Distributor Data Solution
- Lansa, Inc.
- PAR Excellence Systems
- Omnicell
- Tecsys

“15 years ago it was manufacturers that dictated how the medical/surgical product supply chain operated. Today, with the help of GS1, standards are helping streamline non-value add processes by minimizing manual intervention. GS1 standards are the common language that align everyone in the Healthcare industry and increase efficiency across the entire supply chain. At Oracle, the solutions for each component of GS1 standards are already in place.”
– Chip Jackson, National Director, Healthcare and Life Sciences, Oracle

“MEDITECH has had Universal Product Number (UPN) capability in our software for over a decade — an information value which identifies Item, Vendor, and Packaging Unit. This same logic is what drives the GTIN information, and will provide us with the framework to store and use the GTIN information throughout our system. MEDITECH has been actively planning for GS1 standards and believes this improved, streamlined communication will help the entire healthcare industry.”
– Brian Violette, Manager, Client Services Division-Supply Chain Management, MEDITECH
Healthcare Sector: Evolving

“Working with our members to adopt global supply chain standards will help ensure that the right product gets to the right location. This will result in decreased supply chain costs, faster order cycles, and increased patient safety, generating significant value for both patients and hospitals.”

– Michael Foley, Chief Executive Officer, HealthPRO
The Canadian healthcare sector is moving towards global, standards-based product identification for healthcare via the Global Trade Item Number (GTIN), a GS1 standard. The GTIN is a globally-unique number that is used to identify a product or service. GTINs simplify the trading process by providing a standard way to identify all items that are bought and sold. Having the same identification solution used and understood by all trading partners around the world greatly reduces the cost and complexity of doing business.

52% of healthcare providers and 72% of product suppliers either use or plan to use bar codes in the next two years to capture, store, retrieve and transmit information on medical/surgical products (see figure 7.1). The survey also found that the leading standard for medical/surgical product identification in the Canadian healthcare sector is the GTIN.

While a few years behind the level of adoption seen with bar codes, Radio Frequency Identification (RFID) usage is expected to double in the healthcare sector within the next two years. The Supply Chain Standards Survey found that 35% of healthcare providers and 27% of product suppliers either use or plan to use RFID in the next two years to capture, store, retrieve and transmit information on medical/surgical products (see figure 7.2).

**Use of Radio Frequency Identification (RFID)**

Do you support the capture, storage, retrieval or transmission of GS1 standards through the use of RFID?

![Graph showing usage of RFID for healthcare providers and product suppliers](image)
The survey also found that awareness of global GS1 standards is on the rise in the Canadian healthcare sector. However, more education is required to support standards implementation across Canada. 44% of healthcare providers and 63% of product suppliers are either very or somewhat familiar with the GS1 GTIN standard (see figure 7.3).

Familiarity with the GS1 Global Trade Identification Number (GTIN) standard:

- Very familiar and can explain the GTIN standard in detail to others: 8% (Healthcare Providers) 19% (Product Suppliers)
- Somewhat familiar, but cannot explain the GTIN standard in detail to others: 36% (Healthcare Providers) 44% (Product Suppliers)
- Have heard of the GTIN standard, but don’t know any of the details: 19% (Healthcare Providers) 19% (Product Suppliers)
- Have not heard of the GTIN standard before this survey: 13% (Healthcare Providers) 13% (Product Suppliers)
- Don’t know: 7% (Healthcare Providers) 5% (Product Suppliers)

Familiarity with the GS1 Global Location Number (GLN), a globally-unique number that identifies a physical or legal entity, is not as strong as with the GTIN.

- Very familiar and can explain the GLN standard in detail to others: 8% (Healthcare Providers) 12% (Product Suppliers)
- Somewhat familiar, but cannot explain the GLN standard in detail to others: 23% (Healthcare Providers) 26% (Product Suppliers)
- Have heard of the GLN standard, but don’t know any of the details: 33% (Healthcare Providers) 33% (Product Suppliers)
- Have not heard of the GLN standard before this survey: 28% (Healthcare Providers) 29% (Product Suppliers)
- Don’t know: 9% (Healthcare Providers) 7% (Product Suppliers)

Familiarity with the GS1 Global Location Number (GLN) standard:

31% of healthcare providers and 38% of product suppliers say they are either very or somewhat familiar with the GS1 GLN standard (see figure 7.4).
"We have 15 hospitals under our umbrella, we need to get them all on the same page. We need to use the same standards, the same product codes so that we can ensure traceability."
– Susan Smith, General Manager, Mohawk Supply Chain Services, Ontario
Regionalization initiatives across Canada are significantly transforming the healthcare supply chain, with the emergence of large, sophisticated shared service organizations (SSOs) performing supply chain services on behalf of their healthcare provider member institutions. SSOs and their members work together on a daily basis to acquire and move goods. In addition to the vast amounts of medical/surgical products acquired every day, SSOs and healthcare providers may procure millions of dollars worth of pharmaceutical, foodservice, office and cleaning supplies - all of which require accurate and standardized data. This data supports automation of both supply chain management processes, such as procurement and invoicing, as well as clinical care, such as bedside bar code scanning. Due to the critical need for interoperability of such processes between healthcare facilities, and particularly SSO organizations, standardization has never been needed more than it is now.

The first step in standardizing a sector’s supply chain is achieving industry agreement. In addition, the community must commit to developing and implementing standards within their organizations. This decision equally applies to healthcare providers, supplier trading partners, as well as technology solution providers supporting the healthcare sector. In 2008, the Canadian healthcare sector established this agreement through the development of GS1 Canada’s healthcare strategy, Carenet. Over 55% of Canada’s healthcare providers and over 100 manufacturers were brought together to standardize Canada’s healthcare supply chain for the purposes of improved patient safety, supply chain efficiency and sustainability via the Carenet strategy. Through GS1 Canada’s community management process, Canada’s healthcare sector is on its way to supply chain standardization.

Considering most healthcare products in Canada are imported from other countries, it is critical that standardizing the healthcare supply chain is supported at a global level. In 2006, members of the GS1 Global Healthcare User Group adopted the GS1 System of standards as the sole system of standards for the global healthcare supply chain. Members of this user group represent some of the world’s largest manufacturers of pharmaceutical and medical devices. This decision provided a fundamental foundation for uniform global collaboration that will enable global supply chain visibility and traceability. Canada can now count on realizing the vision of all products arriving with only one global product identifier (GTIN), one location identifier (GLN), and centralized access to clean, accurate, complete product data to be used by our healthcare institutions.

**Canadian Healthcare Product Registry**

In 2009, GS1 Canada announced that, as part of the Carenet strategy, it would work with industry to develop a national healthcare product registry for medical/surgical products that are based on the GTIN and contain attributes specific to the healthcare sector.

The Canadian Healthcare Product Registry will be a single point of access between healthcare trading partners, enabling suppliers to load and maintain product information in one central registry. Moreover, healthcare institutions and other healthcare stakeholders will be provided access to accurate, perpetually updated information. This Registry will also align with ECCnet.
Registry, a comprehensive, Canadian product registry that is used by grocery, pharmacy, and foodservice sectors. Product listing through ECCnet Registry is already a standard term and condition of trade in these sectors. Given the cross-sector nature of the products that move through the healthcare system, all of this data is critical to achieving the vision of a standardized supply chain.

The Canadian Healthcare Product Registry is set to dramatically improve the accuracy and clarity of data used by the healthcare sector in electronic transactions for purchasing, shipping and receiving products, and will be a key component to reducing medical errors resulting from inaccurate data.

Nearly three quarters (73%) of the healthcare providers who participated in the Canadian Healthcare Supply Chain Standards Survey stated that their organizations will adopt the Canadian Healthcare Product Registry as part of their internal processes.

**GLN Registry**

When referencing location information, the GLN provides healthcare trading partners with reliable, consistent information by identifying locations using a single, globally-unique number. Each GLN and its related data will be stored in the GLN Registry – a central, online, searchable database that ensures up-to-date, accurate and detailed location information to support trading partner transactions.

Using the GS1 GLN to standardize location identification enables a system that assures the right product arrives at the right place, at the right time, facilitating efficient business practices and driving down supply chain costs.

GS1 Canada has launched the GLN Registry to support Canada’s healthcare supply chain partners as the industry continues to move towards an e-supply chain environment and integrates the global GS1 System of standards into their business processes.

“We had enormous problems with data integrity and those problems would have been eliminated if we had global standards.”

– Marty Townsend, Director, Capital District Health Authority, Nova Scotia
“Patient safety revolves around traceability. We can trace products through the supply chain. And the other issue is errors. We can make sure we get the right product to the right patient in a timely manner.”

– Marty Townsend, Director, Capital District Health Authority, Nova Scotia
Canadian Healthcare Supply Chain 2009 Scorecard*

Global Standards Engagement (GS1 Canada members)
- Healthcare Providers...........................................72%
- Product Suppliers.............................................69%

EDI capabilities (capable of executing EDI-enabled transactions)
- Healthcare Providers...........................................90%
- Product Suppliers.............................................73%

Estimated average manual transaction volume for medical/surgical
- Healthcare Providers...........................................40%
- Product Suppliers.............................................43%

Estimated percentage of manual PO transactions that contain errors
- Healthcare Providers...........................................11%
- Product Suppliers.............................................10%

Estimated number of EDI-enabled transactions that contain errors
- Healthcare Providers...........................................7%
- Product Suppliers.............................................6%

Estimated average time required to resolve a manual processing error
- Healthcare Providers...........................................19.5 minutes
- Product Suppliers.............................................16.5 minutes

Estimated average percentage of total staff time spent resolving manual processing errors
- Healthcare Providers...........................................11%
- Product Suppliers.............................................9%

Product ID (GTIN)
- Healthcare Providers...........................................23% support | Additional 27% will support within 2 years
- Product Suppliers.............................................50% support | Additional 14% will support within 2 years

Global Location Number. (GLN) – Implementation begins in 2010. Benchmark data not available.

Product ID (Radio Frequency Identification)
- Healthcare Providers...........................................11% support | Additional 16% will support within 2 years
- Product Suppliers.............................................13% support | Additional 9% will support within 2 years

Believe adoption of GS1 standards will have a significant benefit to the healthcare sector
- Healthcare Providers...........................................70%
- Product Suppliers.............................................42%

* Scorecard drawn up from the results of this survey.
From Framework to Implementation

Through the Supply Chain Standards Project, the Canadian healthcare community is working to enable electronic procurement and invoicing, systems interoperability and healthcare product traceability across the Canadian healthcare sector.

Phase 1 – Creating the Framework
Phase 1 of the Supply Chain Standards Project has successfully developed a foundation for integrated healthcare supply chain standards across Canada, through:

• Collaboration with the healthcare community to gauge its supply chain needs.
• Identification of standards to support product and location identification and EDI standards development.
• Educating the healthcare community about global GS1 standards.

Phase 2 – Implementation Underway
Phase 2, currently underway, focuses on assisting healthcare trading partners with the implementation of global GS1 supply chain standards. With Canadian healthcare organizations supporting the adoption of GLN and GTIN by the U.S. and Canada-accepted sunrise dates of December 31, 2010 and December 31, 2012 respectively, many healthcare trading partners are already working with GS1 Canada to integrate supply chain standards processes within their organizations.

To ensure e-supply chain readiness and global GS1 standards integration, Canadian healthcare supply chain partners are called on to immediately implement the following standards laid out in table 3.1 on the next page.
<table>
<thead>
<tr>
<th>Standards</th>
<th>Implementation Next Steps</th>
<th>Healthcare Providers</th>
<th>Suppliers</th>
<th>Solution Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GTIN</strong> (14 digit numeric identifier)</td>
<td>Adopt GTIN for product identification.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use camera-ready bar code scanners that scan GTINs. <em>Please refer to the Bar Coding Scanning Equipment Selection Criteria Guideline on <a href="http://www.carenet.ca">www.carenet.ca</a>.</em></td>
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</tr>
<tr>
<td></td>
<td>Access GTIN and product-related attribute information via the Canadian Healthcare Product Registry.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>GLN</strong> (13 digit numeric identifier)</td>
<td>Adopt and maintain GLNs for location identification; GLNs to be accessed from GS1 Canada's GLN Registry.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Load GLN and location-related attribute information to the GS1 Canada GLN Registry.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>EDI</strong></td>
<td>Implement the latest healthcare EDI standards.</td>
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<tr>
<td><em>Please refer to the EDI Implementation Guidelines on <a href="http://www.carenet.ca">www.carenet.ca</a></em></td>
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<tr>
<td></td>
<td>Adopt Electronic Product Code™ for RFID solutions.</td>
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</tr>
<tr>
<td></td>
<td>Adopt Electronic Product Code™ for RFID solutions and integrate variable data contained in Electronic Product Codes™ for e.g.: Lot number; Expiry dates.</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*A serialized GTIN is required when using Electronic Product Code™/RFID for product identification.*
ABOUT GS1 CANADA
GS1 Canada is a member of GS1, the world’s leading supply chain standards organization. As a neutral, not-for-profit organization, GS1 Canada enables its more than 10,000 members – trading partners of all sizes from over 23 sectors across Canada – to enhance their efficiency and cost effectiveness by adopting electronic supply chain best practices.

About the Carenet Strategy
Carenet is GS1 Canada’s healthcare sector strategy to standardize the healthcare supply chain. Through its amalgamation with GS1 Canada in 2008, Carenet represents over 450 Canadian healthcare providers and 95 suppliers across Canada; supporting the use of standards-based electronic commerce practices in healthcare to enhance patient safety and business process efficiency.

The main goal of the Carenet strategy is to build an interoperable framework that will ensure a pan-Canadian system integration of e-supply chain standards. The advantages of moving forward with system-wide, e-supply chain adoption are numerous – such as improved product traceability, enhanced patient safety, operational efficiency gains, significant financial savings, better health human resource management, and anti-counterfeiting and theft control.

The GS1 Canada-led Canadian Healthcare Supply Chain Standards Project has driven national commitment to a standardized healthcare e-supply chain. The Project has successfully engaged key stakeholders to establish an implementation roadmap for the Canadian healthcare sector, modernizing the healthcare supply chain and supporting the Canadian healthcare industry’s vision of an efficient, safe supply chain.
Why Become a Member?
Help shape the future of Canadian healthcare. As a GS1 Canada member, you will stay up-to-date on business process improvements that support productivity, traceability and patient care.

- Develop a common approach and use of global supply chain standards to achieve efficiency in Canadian healthcare and adjacent supply chain operations.
- Become active in driving adoption through the development of implementation guidelines and tools to help effectively use standards-based solutions.
- Collaborate with community to define the value of changes to business processes, maximizing the benefits of common supply chain standards for Canadian healthcare institutions.
- Gain access to online education modules and implementation guidelines.
- Ensure the needs of the Canadian healthcare community are represented in the global healthcare supply chain standards development process.
- Network with other members to share key learnings and leading practices.

Learn more about GS1 Canada and how to become a member at www.gs1ca.org.