



The Global Language of Business

# Safer, More Efficient Care Starts With a Simple Scan

The Movement to Implement GS1 Global Standards in Healthcare



## About GS1 Canada

GS1 is a neutral, not-for-profit organization that develops and maintains global standards for efficient business communication. GS1 has local offices in more than 100 countries with more than 100 million subscribers using global supply chain standards.

GS1 standards improve the efficiency, safety, security, sustainability and visibility of value chains across physical and digital channels in 25 sectors. Through this, our goal is to help facilitate the movement of information efficiently and securely for the benefit of businesses and the improvement of people's lives, everyday, everywhere.

In Canada, through our unique community management role, we collaborate with health leaders, sector boards, advisory councils and industry work groups to develop standards, best practice guidelines and non-proprietary business solutions.

The movement to GS1 global supply chain standards is transforming the healthcare sector. Countries such as Australia, the UK and the Netherlands are already benefitting from the adoption of global standards in healthcare.

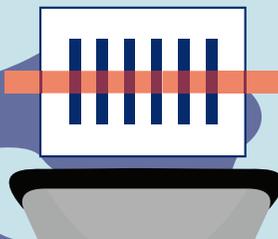
## The National Movement

GS1 Canada's national healthcare strategy is to create a movement that brings together stakeholders across the healthcare sector to actively advance awareness of the impact of GS1 global standards on improving the quality, safety and sustainability of Canadian health systems.

Through sector engagement and awareness, our goal is for healthcare leaders to:

- Demonstrate the significant benefits of implementing global standards
- Commit to collaborating with their peers
- Drive global standards adoption across the entire Canadian healthcare sector
- Help ensure all Canadians have confidence in our healthcare system

**More than 6 billion GS1 barcodes**  
are scanned around the world every day



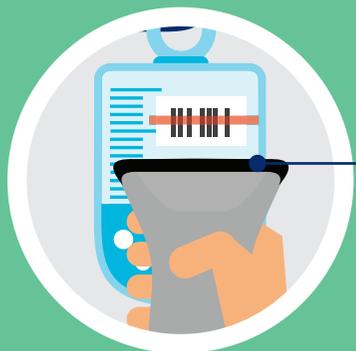
# What are Global Standards?

In a world of growing data, GS1 global standards help you single out what really matters. They provide you with a common language to identify, capture and share supply chain data – ensuring important information is accessible, accurate and easy to understand.

Using global standards helps ensure complete traceability across the supply chain. Commonly encoded as barcodes, standards identify products and patients as part of every caregiving process. This ensures that the right care is being administered to the right patient.

GS1 standards also enable organizations to accurately identify real-world objects and track their movement through the supply chain, right down to the patient, ensuring greater traceability.

Standards are also used to automate key business processes, reducing the number of repetitive manual processes and reducing the opportunity for human error.



## Types of information that can be encoded as a barcode:

- Global Trade Item Number
- Production Lot Number
- Batch Number
- Expiry Date
- Serial Number

# Standards in Action



## IDENTIFY

GS1 standards can be used to identify specific real-world entities including products, physical locations or even patients in an unambiguous way. This means that they will always be correctly identified.



## CAPTURE

GS1 standards can be represented in a number of ways. Notably, they can be encoded into barcodes, as a data matrix or as a QR code that can be easily read by scanners. When nearly everything can have key information directly affixed to it, the opportunities for traceability increase dramatically.



## SHARE

GS1 standards are global standards and are interoperable with systems all over the world. This helps to create a global language of business.



## USE

Businesses can also combine different GS1 standards to streamline business processes such as traceability, inventory management, product recalls and much more.

# Global Standards in Healthcare

**Global Trade Item Number (GTIN):** This is the GS1 global standard that most people are familiar with. It is the number commonly found at the bottom of many barcodes. It is used to identify specific products and even procedures.

**Serialized Global Trade Item Number (SGTIN):** This is an enhanced version of the GTIN which also includes an item's individual serial number. In hospitals it may be used to track items, such as managing laundry distribution.

**Unique Device Identifier (UDI):** This standard is used to identify specific medical devices within the healthcare supply chain down to lot or batch number.

**Global Location Number (GLN):** This number identifies specific physical locations. This can include a hospital, a room within a hospital or even a specific storeroom shelf.

**Serial Shipping Container Code (SSCC):** This number uniquely identifies a logistic unit, such as a pallet or tote, making it easier to keep track of shipments.

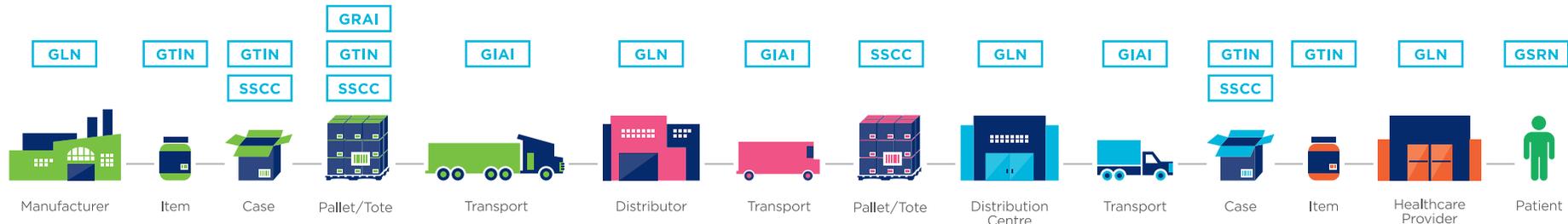
**Global Returnable Asset Identifier (GRAI):** This number is used to identify and manage reusable transport items, transport equipment, and tools.

**Global Individual Asset Identifier (GIAI):** This standard can be used to identify specific assets used by a company, such as a hospital bed, wheelchair or IV pump.

**Global Service Relation Number (GSRN):** This standard can be used by organizations to identify relationships with individual service providers (such as doctors who work for a hospital) and service clients.

**Service Relation Instance Number (SRIN):** This standard can be used in conjunction with a GSRN to identify a specific phase in the medical treatment of a patient.

**Global Document Type Identifier (GDTI):** This number is a code that enables the identification of documents such as medical prescriptions, hospital discharge notices and more. It is used primarily to link documents to a patient's medical record.



# Healthcare's Unlimited Potential

With the implementation of GS1 global standard barcodes, the healthcare sector can realize almost limitless improvements in operational efficiency and avoid preventable harm to patients.

By using standards to help eliminate wasteful processes and increase traceability, the healthcare sector will be even better placed to provide patient care while ensuring optimum efficiency.

Major challenges identified by healthcare leaders:

- Medication errors, preventable harm and adverse events
- Inability to track and trace medical products throughout the supply chain, from manufacturer to patient record
- Existing product recall processes are ineffective and lack accurate traceability
- Re-labelling with proprietary barcodes increases risk and resource demands by eliminating global product traceability
- Non-standardized and inaccurate data prevents system interoperability and increases errors
- Understanding patient outcomes by showing the effect of pharmaceutical, medical device and supply chain choices
- Need for accurate data to drive analytics including case costing

Implementing global standards can help address all of the issues above and more.



# How Standards Can Help

A summary of researcher Dr. Anne Snowdon's thoughts on how global standards and traceability can impact the Six Aims of Healthcare (as described by the Institute for Healthcare Improvement):

- 1. Safe:** Using one global standard across the entire supply chain increases the traceability of individual products, places, and procedures. This means that, when adverse events happen, there is more information available about how they happened and what the eventual impact on the patient was. This, in turn, leads to proactive strategies to prevent future adverse events.
- 2. Effective:** Tracking and traceability also helps identify effective care strategies. Being able to identify specific products or procedures as a common element in patients demonstrating stronger health outcomes allows healthcare providers to leverage those insights across more cases.
- 3. Patient-centred:** Global standards enable accurate and comprehensive health records to be maintained, which can then be shared with patients. With full access to their medical history and care records, patients can then make better decisions when it comes to managing their own health.
- 4. Timely:** Global standards enable traceability, which enable the identification of better care techniques. Comparing the recovery time of patients to the specific products and procedures involved in their care builds stronger future strategies.

**5. Efficient:** Safer, more effective care is more efficient care. As better patient strategies are identified through tracking and traceability, recovery times and relapse rates can be cut, more patients can be seen and more cost-effective treatment plans can be identified.

**6. Equitable:** Improved transparency enables better tracking of healthcare outcomes across socio-economic and geographic areas, allowing for better understanding of where improvements to healthcare need to be made.

**To read more research on global standards, visit [gs1ca.org/healthcare-research](https://gs1ca.org/healthcare-research)**



## Learning From Other Sectors: Grocery

Grocery's barcode story starts 40 years ago with the shift from manual to automated processes.

Challenges faced before global standards:

- Slow checkout speeds
- Difficulty in tracking and tracing products and the risk it posed to customer safety
- Inability to recall products quickly
- Time consuming and unreliable manual paperwork
- Lack of system interoperability which caused supply chain inefficiencies and hindered supply chain transparency
- Inaccurate information caused supply chain errors and inventory inefficiencies, such as too much or too little stock and higher costs
- Lower consumer safety and satisfaction caused by inventory issues and poor product recall processes

## Benefits of Implementing Global Standards in the Grocery Sector



<sup>1</sup>Progressive Grocer Magazine, 2009    <sup>2,3,4</sup>GS1, Celebrating our 40th anniversary, 2013

## Global Standards Save Lives

Patient safety continues to be a top priority. GS1 global standards enable healthcare providers to uniquely identify products, patients, caregivers, assets and locations. This enables supply chain traceability and helps to reduce the rate of adverse events.

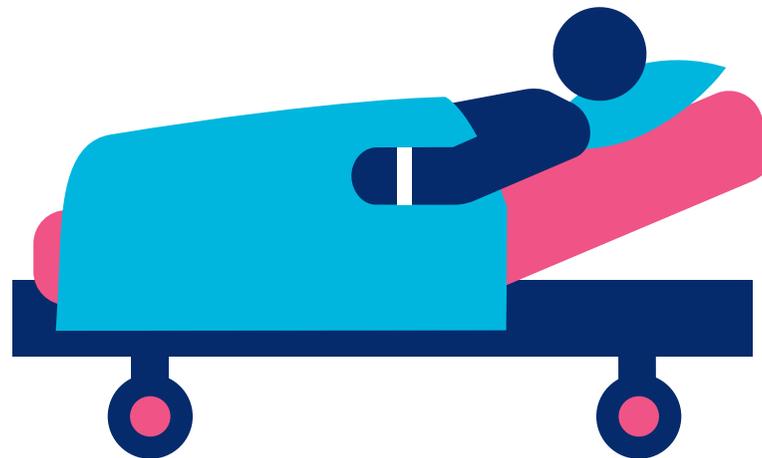
For example, enabling bedside barcode scanning can help reduce medical errors by ensuring clinicians hit the five rights central to medication dispensing: the right patient, the right drug, the right time, the right dose, and the right route.

Medication barcoding can  
**reduce medication errors  
by up to 40%<sup>1</sup>**



<sup>1</sup>Dr. Anne Snowden. Visibility: The New Value Proposition for Health Systems. 2016

**Medical error, a core element of patient safety, is now the third leading cause of death in North America, behind heart disease and cancer.<sup>2</sup>**



Global standards incorporated across the entire supply chain can  
**save up to 44,000 lives per year globally<sup>3</sup>**

<sup>2</sup>Makary MA, Daniel M. Medical error—the third leading cause of death in the US. BMJ. 2016;353:i2139

<sup>3</sup>McKinsey Report: Strength in Unity. 2012

## Standards Case Study: Improving Patient Safety



University of Fukui Hospital in Japan wanted to improve patient safety by preventing surgical instruments from being left in a patient's body and reducing the risk of infection from contaminated surgical instruments.

The hospital introduced an “integrated sterilization management system,” which uses unique identification by engraving GS1 DataMatrix barcodes onto steel instruments.

University of Fukui Hospital staff use GS1 standards to perform routine checks at the end of surgical procedures to ensure all instruments are accounted for before the patient leaves the operating room.

GS1 standards are also used to track instruments at every stage of the cleaning and sterilization process.

By implementing global standards in their integrated sterilization management system, Fukui Hospital estimates it **has saved approximately 2,000 hours annually** in overall operation time.

**For more case studies, visit [gs1ca.org/healthcare-case-studies](https://gs1ca.org/healthcare-case-studies)**



University of Fukui estimates that  
**20,000 steel instruments**  
have been marked with GS1 standards.

## Global Standards Save Time

Through the automation enabled by global standards, manual time-consuming tasks can be eliminated. Critical business processes such as product traceability, order management and case costing can be streamlined, offering significant time savings.



Recalls without global standards take up to **two extra days of work effort** per hospital<sup>1</sup>

<sup>1</sup>McKinsey Report, Strength in Unity, 2012



Global standards can increase the efficiency of clinical staff currently

**losing 25% of their  
time searching**

for equipment and supplies due to lack of inventory traceability<sup>2</sup>

<sup>2</sup>McKinsey Report, Strength in Unity, 2012

## Standards Case Study: Medical Product Traceability



Headquartered in Brazil, Bionnovation Biomedical specializes in dental implants and biomaterials. With expansion to the U.S., Bionnovation wanted to improve its distribution as well as comply with state regulations from the U.S. Food and Drug Administration (FDA).

With GS1 standards, the company can now uniquely identify each of its dental implants and other products.

Bionnovation has now achieved end-to-end product traceability throughout its global supply chain, reduced order fulfillment errors to zero and saved valuable time through improved productivity and inventory management.

For more case studies, visit [gs1ca.org/healthcare-case-studies](https://gs1ca.org/healthcare-case-studies)



**“Overall, we have eliminated human error in the checking process that, in turn, has helped us improve stock management and achieve precision in stock inventories.”**

**Jeferson Tavares,**  
Systems Analyst,  
Bionnovation Biomedical

## Global Standards Save Money

Across the supply chain, organizations are increasingly being asked to do more with fewer resources. With global standards, and the automation they enable, organizations across the healthcare sector can save money and reinvest it in critical areas where it's needed most.

With the implementation of global standards, healthcare supply chains can become more transparent. Better tracked and managed inventory means that additional costly or obsolete inventory is reduced, leaving only the required products and instruments on hand.



For every \$1 million invested in infrastructure there is an estimated **\$8 million savings** in inventory tracking and product procurement<sup>1</sup>



<sup>1</sup>Dr. Anne Snowdon. Visibility: The New Value Proposition for Health Systems. 2016

## Standards Case Study: Inventory Management



Lancashire Teaching Hospital in the UK needed to cut costs and improve its supply chain. The hospital decided to focus on inventory management processes for its operating theatres.

Now with GS1 standards implemented, Lancashire Hospital has greater control and visibility of inventory levels, resulting in less product waste, reduced costs and dramatically fewer out-of-stock situations.

In addition, **more than 7,100 hours** each year in clinical staff time has been re-allocated to patient care.

For more case studies, visit [gs1ca.org/healthcare-case-studies](https://gs1ca.org/healthcare-case-studies)

The Lancashire Teaching Hospital's NHS  
Foundation Trust has reported  
**£3 million in cost**  
savings from increased stock visibility.<sup>1</sup>



<sup>1</sup>GS1 Healthcare Reference Book 2017-2018

# Using GS1 Standards and Barcodes Can Greatly Improve Supply Chain Traceability and Patient Safety



## Manufacturer/ Distributor

- Product identification
- Inventory management
- Contract management
- Product data synchronization
- Procure-to-pay (EDI)
- Consignment inventory management
- Value-based procurement
- Validation of receipt and delivery
- Product tracking and tracing
- Product recall and withdrawal
- Streamline product information during mergers and acquisitions



## Group Purchasing

- Sourcing and value-based procurement
- Contract and rebate management
- Product shortages
- Product recall and withdrawal
- Analytics
- Expanded product catalogue support to members



## Shared Services

- Sourcing and value-based procurement
- Contract and rebate management
- Product identification
- Item master management
- Procure-to-pay (EDI)
- Inventory management
- Validation of receipt and delivery
- Product tracking and tracing
- Product data synchronization
- Consignment inventory
- Product recall and withdrawal
- Streamline product information during mergers and acquisitions



## Healthcare Facility

- Sourcing and value-based procurement
- Contract and rebate management
- Product identification, tracking and tracing
- Item master management
- Procure-to-pay (EDI)
- Inventory and cart management
- Consignment inventory
- Validation of receipt and delivery
- Physician preference card management
- OR/case product preparation
- Instrument sterilization and traceability
- Closed loop medication management
- Interface supply chain with clinical documentation
- Implant registry management
- Surgeon case reporting/case costing
- Product recall and withdrawal
- Post-market surveillance



## Patient Care

- Patient identification and tracking
- Product identification, tracking and tracing
- Bedside/patient care scanning
- Clinical charting
- Electronic medical records management
- Closed loop medication management
- OR product and procedure alignment
- Menu planning, nutrition and allergen management
- Itemized billing
- Product recall and withdrawal
- Product/procedure effectiveness analysis
- Infection control traceability
- Mobile healthcare

# GS1 Canada's Healthcare Governance\*

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### Tony DiEmanuele

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*HealthPRO Procurement Services Inc.*

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*Plexxus*

# Sector Support

Many major Canadian healthcare leaders are already supporting global standards. When will you join the movement?



## Visit [gs1ca.org/healthcare](http://gs1ca.org/healthcare) to access:

- Information on our community workgroups
- Compelling case studies
- How-to guides
- Videos
- Healthcare committees
- Help with implementation planning
- Updates on the healthcare movement

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