



# GS1 HEALTHCARE US

Business Process Map of  
GDSN Healthcare Attributes to Hospital Processes



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### About GS1 US™

GS1 US is the Member Organization of GS1 that serves companies in the United States. As such, it is the national implementation organization of the GS1 System dedicated to the adoption and implementation of standards-based, global supply chain solutions in the United States. GS1 US currently serves over 200,000 U.S. member companies -- 16,000 of which are in healthcare.

### About GS1 Healthcare

GS1 Healthcare is a global, voluntary healthcare user group developing global standards for the healthcare supply chain and advancing global harmonization. GS1 Healthcare consists of participants from all stakeholders of the healthcare supply chain: manufacturers, wholesalers & distributors, as well as hospitals and pharmacy retailers. GS1 Healthcare also maintains close contacts with regulatory agencies and trade organizations worldwide. GS1 Healthcare drives the development of GS1 Standards and solutions to meet the needs of the global healthcare industry, and promotes the effective utilization and implementation of global standards in the healthcare industry through local support initiatives like GS1 Healthcare US in the United States.

### About GS1 Healthcare US®

GS1 Healthcare US is an industry group that focuses on driving the adoption and implementation of GS1 Standards in the healthcare industry in the United States to improve patient safety and supply chain efficiency. GS1 Healthcare US brings together members from all segments of the healthcare industry to address the supply chain issues that most impact healthcare in the United States. Facilitated by GS1 US, GS1 Healthcare US is one of sixty-six local GS1 Healthcare user groups around the world that supports the adoption and implementation of global standards developed by GS1.

## Introduction

In order to support implementation of the GS1 Global Trade Item Number® (GTIN®) and the GS1 Global Data Synchronization Network™ (GDSN®), the GS1 Healthcare US® Hospital Implementation Workgroup created a process map showing the linkage between certain GDSN healthcare attributes and various clinical, operational, and financial processes of acute care facilities (i.e., outpatient, inpatient, pharmacy). Highlighting the connection between these data elements and various business processes underscores the importance of accurate data synchronization from the manufacturer to the patient.

## Purpose

The purpose of this document is to support implementation of GTIN and GDSN within the U.S. healthcare provider community. It is intended to assist organizations in:

- articulating the business case,
- identifying the detail needed within each process, and
- defining the effort needed to ensure that detail is present.

To that end, this document includes a list of GDSN healthcare attributes with common healthcare definitions, a process map showing the various hospital business processes to which each attribute is connected, and a description of each business process included in the process map.

**① For comprehensive implementation guides, please refer to the *GTIN and GDSN Tool Kits*. Links are provided in the *Additional Resources* section of this document.**

## GDSN Healthcare Attributes

Sixteen GDSN healthcare attributes are mapped in this document. Each of those attributes is listed Table 1 below with its common healthcare definition.

GDSN Healthcare Attribute	Common Definition in Healthcare
<b>GTIN</b>	Global Trade Item Number (GTIN) for this item.
<b>UnitLevel</b>	The attribute tradeItemUnitDescriptor is used to describe the GTIN hierarchy level.
<b>InfoProvider</b>	The name and GLN of the company or entity publishing the product information.
<b>TargetCountry</b>	Country in which the item is intended to be sold. In GDSN, the list of the geographical regions or countries is defined by the ISO-3166-1 code system. The value used is the 3-digit numerical code.
<b>BrandName</b>	Most recognizable name to the end user as displayed on the product or its packaging.
<b>GPC</b>	GPC Code required for the Global Registry.
<b>Orderable</b>	Indicator specifying if the GTIN can be ordered from the Information Provider. The Information Provider should expect to receive orders from the recipient using this GTIN.
<b>ABaseUnit</b>	Indicator specifying if the GTIN is the lowest level of an item's hierarchy. (If so, this GTIN cannot have any children.)
<b>AltNumber</b>	Manufacturer's Part Number. An additional (legacy) method for identifying the item (besides the GTIN) that can be populated. This might be a vendor's item number or manufacturer's catalog number. This number can be any other externally assigned identification number for the item.
<b>ParentGTIN</b>	GTIN of the trade item for the product packaging level immediately <i>above</i> this item (e.g., if this item is an each, the GTIN for the case would be entered). Required for all but the highest packaging level.
<b>ChildGTIN</b>	GTIN of the trade item for the product packaging level immediately <i>below</i> this item (e.g., if this item is a case, the GTIN for the "each" would be entered). Required for all but the lowest packaging level.
<b>Mfgr</b>	GLN and user-assigned name that identifies the manufacturer (i.e., the organization responsible for manufacturing the item).
<b>Desc</b>	Brand owner's description of the product. This information will help further to detail what the item is.
<b>NetContent</b>	Total amount of the trade item contained by a package, usually as claimed on the label.
<b>QtyChildren</b>	Count of the child GTINs contained in this item.
<b>Latex</b>	Indicates if the item is made from or contains latex.

Table 1: GDSN Healthcare Attributes in the Business Process Map

The process map on the following page highlights the connection between these data elements and hospital business processes. More specifically, it identifies various clinical, operational, and financial processes to which each attribute is linked. The map presents the sixteen GDSN attributes across the top header row, and the hospital business processes in the left column. *(NOTE: A description of each hospital process is provided in the pages following the map.)*

# Process Map

Hospital Business Process		GDSN Healthcare Attribute															Total # of Attribs	
		GTIN	Unit Level	Info Provider	Target Country	Brand Name	GPC	Order-able	A Base Unit	Alt #	Parent GTIN	Child GTIN	Mfgr	Desc	Net Content	Qty Children		Latex
Clinical	Medical Records / EHR	Y	Y			Y				Y			Y	Y			Y	7
	Medication Administration	Y				Y							Y		Y			4
	Charge Capture	Y	Y			Y				Y			Y	Y	Y			7
	POE (Physician Order Entry)	Y				Y							Y	Y	Y		Y	6
	Preference Card Mgmt	Y	Y			Y				Y			Y	Y	Y		Y	8
	Drug Formulary	Y	Y			Y							Y	Y	Y			6
	Product Standardization	Y	Y			Y				Y			Y	Y	Y		Y	8
	Performance Mgmt	Y				Y							Y	Y			Y	5
	Point of Use	Y	Y			Y				Y			Y	Y	Y		Y	8
Operational	Sterilization Processing Dept	Y	Y			Y				Y			Y	Y			Y	7
	Biomedical Engineering	Y	Y			Y				Y			Y	Y				6
	Receiving	Y	Y			Y				Y			Y	Y	Y		Y	8
	Purchasing	Y	Y	Y	Y	Y		Y		Y			Y	Y	Y		Y	11
	Distribution	Y	Y			Y		Y	Y	Y			Y	Y	Y		Y	10
	Inventory Mgmt	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		Y	15
	Contract Mgmt	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	15
	Returns	Y	Y		Y	Y		Y		Y			Y	Y	Y		Y	10
	Recalls	Y	Y			Y	Y				Y	Y	Y	Y			Y	9
	Demand Planning & Spend Analytics	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	15
Financial	Revenue	Y	Y			Y				Y			Y	Y	Y			7
	Financial Acct	Y	Y			Y	Y			Y			Y	Y	Y			8
	Accts Payable / Receivables	Y	Y			Y				Y			Y	Y	Y			7
	Capital Planning	Y	Y			Y		Y		Y			Y	Y				7
	Rebates / Chargebacks	Y	Y			Y		Y		Y			Y	Y	Y			8

Table 2: Business Process Map for GDSN Healthcare Attribute

## Hospital Business Processes

Twenty-four hospital processes are included in the map. These processes represent clinical, operational and financial business processes common across acute healthcare facilities. To provide clarity regarding the specific hospital business processes referred to in the map, the Hospital Implementation Workgroup developed a description of each hospital business process. The descriptions developed by the Workgroup are presented in Table 3 below.

Table 3: Hospital Business Processes

Hospital Business Process		Description
Clinical	Medical Records / EHR	Process of electronically collecting, storing and retrieving complete personal health data that is delivered across different healthcare settings.
	Medication Administration	Ability to electronically document medications at the bedside or other patient treatment areas.
	Charge Capture	Electronic capture of information for use in a medical claim document, a critical element of the overall revenue cycle. Without a reliable charge capture process, poor coding and lost charges can cost healthcare organizations a lot of money.
	POE (Physician Order Entry)	Electronic entry of medical practitioner instructions for the treatment of patients (particularly hospitalized patients) under his or her care. These orders are communicated over a computer network to the medical staff or to various departments (e.g., pharmacy, laboratory, radiology, etc.). These systems improve patient safety by providing alerts related to the orders.
	Preference Card Management	Indicates the instruments and supplies preferred by each clinician for specific procedures. These cards provide the basis for business, financial and operational decisions. They provide data to track the cost of each procedure and patient charges.
	Drug Formulary	A list of prescription and over-the-counter (OTC) drugs, both generic and brand name, that are available through a patient's health plan. A health plan may only pay for medications that are on the formulary. Outpatients pay varying co-pays for drugs that are on the formulary. For drugs that are not on the formulary, patients may pay a larger percentage of the cost of the drug, sometimes 100%. Formularies vary between drug plans and differ in the breadth of drugs covered and costs of co-pays and premiums. Most formularies cover at least one drug in each drug class, and encourage generic substitution (also known as a preferred drug list).
	Product Standardization	The process of eliminating duplicate product types which serve the same clinical purpose.
	Performance Management	Systematic process of creating a work environment in which people are enabled to perform to the best of their abilities, and by which an agency involves its employees, as individuals and members of a group, in improving organizational effectiveness in the accomplishment of agency mission and goals.
	Point of Use	Place where and/or time when a product or service is used.
Operational	Sterilization Processing Department	Service within the hospital in which surgical instrumentation and medical equipment are cleaned, prepared, processed, stored, and issued for patient care. The process may also be integrated with the distribution of disposable supplies for surgery and other patient care areas.
	Biomedical Engineering	Function within the hospital that ensures medical technology is used appropriately and safely, performs properly, and is managed cost-effectively. Staff are involved in the initial checking and installation of equipment, preventative maintenance, and planning for equipment needs. (from <a href="http://www.vanderbilt.edu">www.vanderbilt.edu</a> )
	Receiving	Taking possession of products in order to stage them for inspection, place them into inventory, or deploy them for immediate use. The receiving process usually must be successfully completed before invoices can be paid. (from <a href="http://www.vanderbilt.edu">www.vanderbilt.edu</a> )

Hospital Business Process		Description
	Purchasing	Acquiring goods or services to accomplish the goals of an organization. The major objectives of purchasing are to maintain the quality and value of a company's products, minimize cash tied-up in inventory, maintain the flow of inputs to maintain the flow of outputs, and strengthen the organization's competitive position. Purchasing may also involve: development and review of the product specifications, receipt and processing of requisitions, advertising for bids, bid evaluation, award of supply and service contracts, and capital asset acquisition. (from <a href="http://www.businessdictionary.com">www.businessdictionary.com</a> )
	Distribution	Chain of businesses or intermediaries through which a good or service passes until it reaches the end consumer. A distribution channel can include wholesalers, retailers, distributors and even the internet. Channels are characterized as "direct" or "indirect forms". A direct channel allows the consumer to buy the good from the manufacturer. An indirect channel allows the consumer to buy the good from a wholesaler. Direct channels are considered shorter than indirect channels. (from <a href="http://www.investopedia.com">www.investopedia.com</a> )
	Inventory Management	Inventory management is primarily about specifying the size, quantity and placement of stocked goods. Inventory management is required at different locations within a facility, between locations, or within multiple locations of a supply network to protect the regular and planned course of production against the random disturbance of running out of materials or goods. The scope of inventory management also concerns the fine lines between replenishment lead time, carrying costs, asset management, forecasting, valuation, visibility, future price forecasting, physical inventory, available physical space, quality management, replenishment, returns and defective goods and demand forecasting. (from <a href="http://www.inventorymanagement.com">www.inventorymanagement.com</a> )
	Contract Management	Creating, managing and tracking contractual arrangements for goods and services. Various attributes of each contract, including pricing, terms, effective dates, etc. are tracked in a central repository.
	Returns	Working with vendors to return products.
	Recalls	Implementing internal protocols to monitor potential hazards and alerts from vendors, communicate identified issues within the hospital, identify products impacted by the recall, and remove recalled products. This includes assessment of patient impact.
	Demand Planning & Spend Analytics	Demand Planning involves forecasting of a hospital's changing demand for products/services, and adjusting ordering patterns to compensate for these changes. Spend Analytics utilizes hospital spend data to evaluate potential savings opportunities through standardization, utilization, and contracting options.
Financial	Revenue	Generating charges to insurance companies, government agencies and individual patients for the provision of services to a patient. The process is needed in order to establish justification for reimbursement to meet contractual terms agreed upon by both the paying agency and the healthcare organization.
	Financial Accounting	Preparation of financial statements for decision-makers, such as stockholders, suppliers, banks, employees, government agencies, and owners. Measure and monitor a healthcare organization's performance and report results to interested stakeholders including regulatory bodies.
	Accounts Payable / Receivables	Management of records that show amounts a healthcare organization owes to suppliers, but has not yet paid. When an invoice is received from a supplier, it is added to the file and then removed when it is paid. Thus, AP is a form of credit suppliers offer to healthcare organizations by allowing them to pay for a product or service after it has already been performed or received.
	Capital Planning	Process for determining whether a healthcare organization's long-term investments such as new equipment, replacement equipment, new buildings, new products, and research development projects are worth pursuing. Budgeting for major capital or investment expenditures.
	Rebates / Chargebacks	A type of incentive to increase sales. An amount paid by way of reduction, return, or refund on what has already been paid or contributed. Rebates are used extensively in healthcare in lieu of list prices for product sales. Chargebacks occur in the healthcare distribution industry when the supplier sells a product at a higher price to the distributor than the price they have set with the end user. The distributor then submits a chargeback to the supplier so they can recover the money lost in the transaction.

## Additional Resources

### Tools & Resources

<http://www.gs1us.org/hctools>

- Healthcare Provider GDSN Tool Kit
- Healthcare Supplier GDSN Tool Kit
- Healthcare Provider GTIN Tool Kit
- Healthcare Supplier GTIN Tool Kit
- GTIN Attributes for Healthcare Products (an interactive spreadsheet that contains attributes codes and definitions approved by the healthcare industry)
- Sample GTIN Attribute Data for GDSN (download examples of how data can be published in the GDSN)

### GS1 Healthcare US Webinars

<http://www.gs1us.org/hcedu>

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