

France

Enabling traceability at Dijon University Hospital through identification of all rooms and locations

University Hospital CHU Dijon, the largest public hospital in the Bourgogne region of France, has taken steps to ensure greater supply chain security and efficiency by implementing a process that enables the internal traceability of medical products, from the warehouse to individual care units within the hospital. The ability to electronically track and trace a product has the potential to not only save time and costs, but also to improve patient safety and the quality of care. The hospital established a warehouse logistics platform using GS1 standards as the basis of its traceability process, and is seeing significant improvements in efficiency, traceability and, ultimately, patient safety.

By Bertrand Marechal and Veronique Jost



Background

The University Hospital CHU Dijon is a 1,700-bed hospital employing more than 6,300 people, collecting 8,000 human samples per day. It is the largest public hospital in the Bourgogne region of France. To improve supply chain security and efficiency, the hospital is implementing procedures to enable the internal traceability of products, from the warehouse to the care units.

Challenge

With soaring healthcare costs, providing quality care while ensuring patient safety has become a real challenge in the current healthcare environment. The ability to electronically track and trace a product within the hospital has the potential to not only save time and costs, but also improve patient safety and the quality of care.

Solution

Dijon hospital decided to invest and set up a logistics platform for its warehouse that includes a traceability system. The system, which is housed in an 5,500 m² building, is fully operated and managed by hospital employees. It is used to track and trace the internal deliveries of the products the hospital stocks using GS1 standards, such as the Global Trade Item Number (GTIN), the Serial Shipping Container Code (SSCC), the Global Location Number (GLN) and the Global Returnable Asset Identifier (GRAI).

These standards are used for all products stocked in this warehouse, including all drugs and medical devices as well as “hotel products”, such as tableware, cleaning products and detergents. The movement of these products throughout the hospital are electronically recorded in the warehouse delivery system.

In order to ensure the traceability of these internal deliveries, Dijon CHU first used the GLN to identify all the physical locations in the hospital and logistic platform: rooms, care units,

**Global Trade Item Number (GTIN):
Product identification**

Standardised product identifier that can be used by a company to uniquely identify all of its trade items.

**Global Location Number (GLN):
Location Identification**

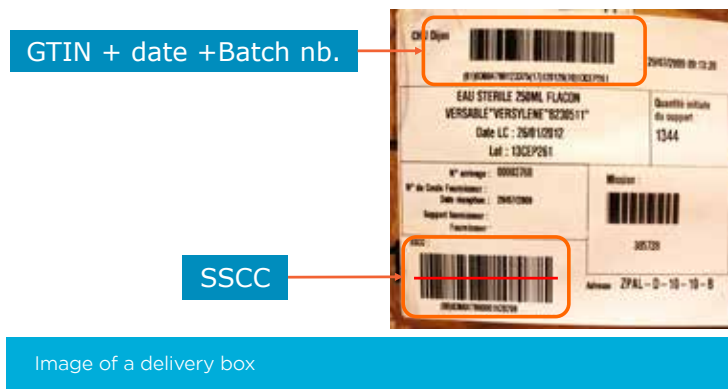
Standardised location identifier that can be used by companies to identify their locations.

**Serial Shipping Container Code (SSCC):
logistics unit identification**

Standardised number that can be used by companies to identify a logistic unit, which can be any combination of trade items packaged together for storage and/or transport purposes.

**Global Returnable Asset Identifier (GRAI):
asset identification**

Standardised number for asset identification. This GS1 Key is especially suitable for the management of reusable transport items, transport equipment, and tools and can identify these returnable assets by type and if needed also individually for tracking and sorting purposes.



points of departure, arrival and storage areas of the products. For a 1,700-bed hospital, this represents nearly 12,000 GLNs. All delivery boxes are also individually identified and marked with a GRAI.

When a ward or care unit orders products, the order picker preparing the order identifies the shipment with a GS1 Serial Shipping Container Code (SSCC), then links this SSCC with the unique identifier of the delivery box (the GRAI) to the GLN of the destination, and finally links all the latter with his own personal identification number.

Then the products ordered are picked and scanned and their GTIN is linked to this order. In parallel, when the GTIN is scanned, its commercial name, batch/lot number and expiration date are retrieved and all the above information is recorded and linked in the Warehouse Management System (WMS).

Upon delivery to the care unit, the logistician scans the expected destination GLN (as marked on the delivery box), with the actual GLN of the location, and the SSCC to ensure the shipment is effectively delivered at the right place. All the operations are time-stamped and recorded in the WMS.

All this data ensures that deliveries are completely tracked from the logistic platform to the care units, that the restocking frequency is monitored, and that targeted batch recalls can be carried out in the care units as efficiently as possible. Faster and more efficient recalls lead to improvements in patient safety and quality of care.

The platform manages the medicines and solutions, medical devices and sterile medical devices, hotel products for the hospital as well as the stocks of all the official documents, such as prescriptions and reimbursement claim forms given to the patient to be reimbursed by social security.

Benefits

Stocks - Efficiency gains

The creation of the logistic platform managing most of the stocks has allowed the reduction of storage location size in the care units, which have been redistributed to medical care. This has led to a reduction of the construction cost per m² for the new hospital.

1. The products are now managed through a central stock and by stock managers, instead of being disseminated throughout the hospital.
2. Productivity has been increased by streamlining storage facilities to reduce the picking circuit while respecting the stocking constraints (temperature, regulatory constraints, flammable substances, medical gases, etc.) helped by:
 - short rotations of stocks
 - better management of storage conditions for each type of product
 - better management of order preparation and picking
3. The set-up of the logistic platform also led to a rationalisation of care unit replenishment, with new quantities calculated on real consumption, new frequencies, and systematic scan:
 - better inventory valuation
 - reduction of waste due to a better management of expired products and overstocking
 - time savings for inventory management
 - better management of products returned from the care units (reduction in order or delivery errors, enhanced security by checking the returned batches, etc.)
4. Improvement in hygiene with a monitoring of the cleaning of the boxes, by registration of the GRAI at the entrance and exit of the cleaning process on the logistic platform.
5. Reduction in waste materials in the care units (products unpacked on the platform); reduction in the time allotted to recovery of the waste materials in the care units
6. Better organisation of the flows between the logistic platform and the wards; planned frequency and better reactivity to urgent requests.
7. Harmonisation of ordering methods between the different care units and the different type of products.

Some benefits already visible in the warehouse:

- 40% increase in productivity in the warehouse in the first few months.
- Supply of all the care units at least 1 time a day and up to 3 times a day for wards situated in the main building.

Traceability

1. All the pharmaceutical products stocked in the warehouse are identified by a GTIN (CIP13), a batch number and expiry date from reception.
2. Knowledge of what has been delivered and in which ward, which in turn ensures that the right product is delivered to the right place at the right time, contributing to patient safety and improved quality of care.
3. All the deliveries record the GTINs, batch number and expiry date (in FEFO mode) – First Expiring First Out
4. Security, efficiency and time saving when managing batch withdrawals.

The identification of products and locations has allowed the hospital to work more efficiently, enable traceability and save time to improve patient care.

About the authors



*The logistic platform build to ensure this internal traceability has been conceived and set up by François Bisch - Director of Logistics - from 2009, and now operated by **Bertrand Marechal***



*- Hospital Technician /Head of Logistics Information Systems and **Veronique Jost** - Hospital Doctor Pharmacist/Responsible for products stored on the logistic platform. This platform was the first one to use GS1 Standards.*

About the hospital

The University Hospital of Dijon is a teaching hospital of more than 1,700 beds spread over 3 sites. this is the first employer of the Burgundy region at the forefront of research with nearly 450 publications per year.

7,300 care professionals are working on 15 clinical poles to care more than 90,000 patients a year.

Everyday, nurses and doctors collect 8,000 human samples from their patients. All these preparations circulate inside the hospital from pharmacy to patient rooms, and from rooms to medical laboratory. To trace all these deliveries inside the hospital, it has been decided to identify each location inside the different wards with a Global Location Number (« GLN »). Each patient room has now its GLN with a GS1-128 barcode at the entrance, scanned for each incoming or outgoing delivery.