GS1
One Global Standard interacting with another Global Standard

Christian Hay

What is GS1?

GS1 is a not-for-profit organisation dedicated to the design and implementation of **global standards** to improve the efficiency and visibility of **supply chains** globally and across sectors

- **108** member organisations
- **30** years of experience
- **Neutral** platform for all supply chain stakeholders
- Over a **million** companies doing business across **150** countries
- Over **6 billion** transactions a day

GS1 is the most widely used supply chain standards system in the world

GS1 Standards

Global

- Integrity of the system worldwide (unique numbering across borders)
- Over 20 represented sectors (FMCG, healthcare, transport, defence…)
- Worldwide network of GS1 Member Organisations (108 in total) to support adoption and implementation

Open

- No barriers
- Ensures full interoperability

Proven

- In use for 30+ years in Retail
- The most widely used system of standards in the world

265238 529846

GS1 System of Standards

GS1

The global language of business

OVERALL BENEFIT: Improving efficiency & visibility in supply and demand chains

GS1 SOLUTIONS & SERVICES USING GS1 STANDARDS
Solutions: POS / Inventory Management / Asset Management / Collaborative Planning / Traceability
Services: Global (GSMP, GEPIR, Global Registry, Training and Accreditation) & Local (e.g. Certification, Implementation, Training)

GS1 **System** - Integrated system of standards

GS1 BarCodes	GS1 eCom	GS1 GDSN	GS1 EPCglobal
Global standards for automatic identification	Global standards for electronic business messaging	The environment for global data synchronisation	Global standards for RFID-based identification
Rapid and accurate, item, asset or location identification	Rapid, efficient & accurate business data exchange	Standardised, reliable data for effective business transactions	More accurate, immediate and cost-effective visibility of information

GS1 Identification Keys (e.g. GTIN, GLN, SSCC, GRAI, GIAI, GSRN, EPC) & Attribute Data (e.g. Best Before Date)

What is the problem?

Healthcare faces significant challenges in a supply chain lacking transparency, accuracy and efficiency

Challenges in the healthcare supply chain

- **Medication errors** result in additional treatments, disabilities and even loss of life

- **Counterfeiting** is an increasing global threat

- **Traceability** from manufacturer to patient is unworkable

- **Product recalls** are difficult to manage

- A lot of manual interventions in the healthcare **supply chain** decrease its **efficiency and accuracy**

Medication Error – Transfusion Error

US

- 44,000-98,000 die in the US alone as the result of *medication* error (IoM, 2006)
- Mis-transfusion every 14'000 transfusion. Death in 5,5% of the cases; major organ morbidity in 41% of the cases
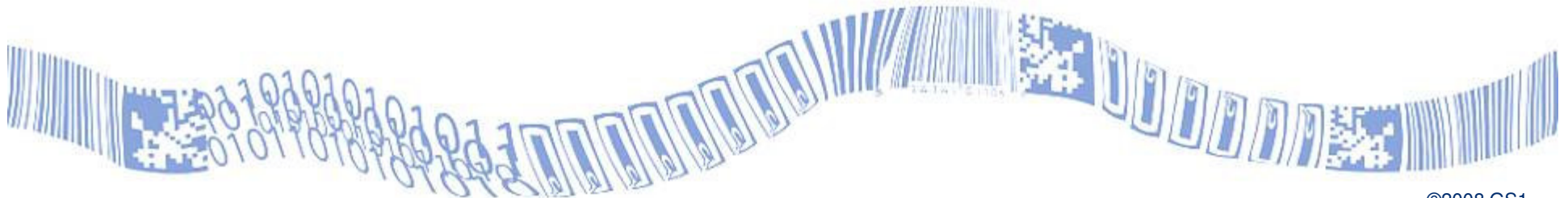
UK

- Approximately 10% of inpatient episodes result in a medication error (Department of Health, 2007)
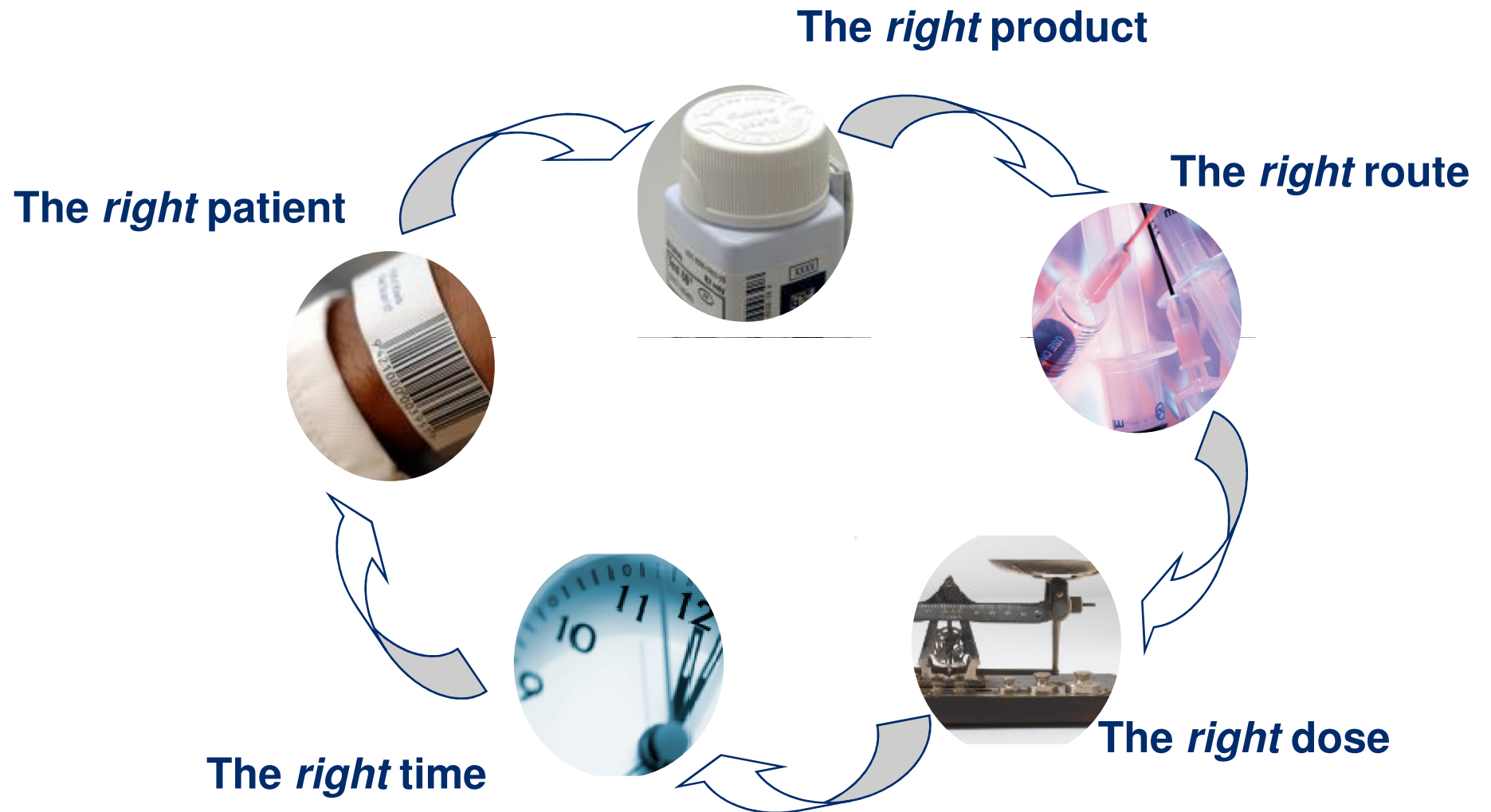
Quebec

- Mis-transfusion every 12'000 transfusion

Belgium

- Mis-transfusion every 400 transfusion

Ensuring the 5 Patient Rights

The *right* product

The *right* route

The *right* patient
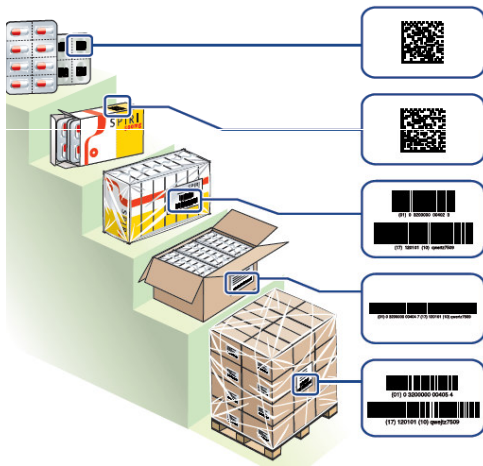
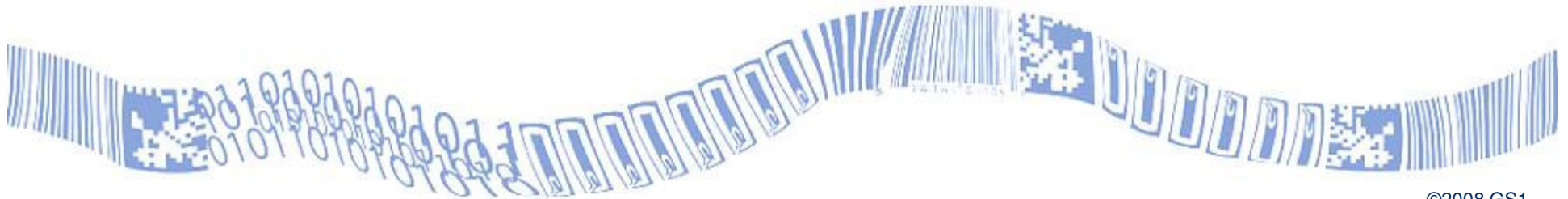The *right* dose

The *right* time

GS1 ID Keys

GTIN:
Global Trade Item Number

The GS1 ID Key assigned to any product or service that may be priced, or ordered, or invoiced at any point in any supply chain.

A single reference for GTIN allocation

GTIN Allocation Rules reviewed & approved

Healthcare GTIN Allocation Rules
GS1 global Healthcare User Group
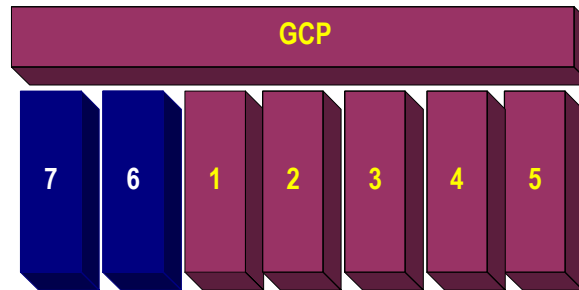(GS1 HUG™)
Issue 4.0 December 2006

- GTIN: Global Trade Item Numbers
- Existing GTIN Allocation Rules needed to be adapted to the healthcare sector
- Working from existing rules, the Global HUG created the **Healthcare GTIN Allocation Rules**, based on real-world examples
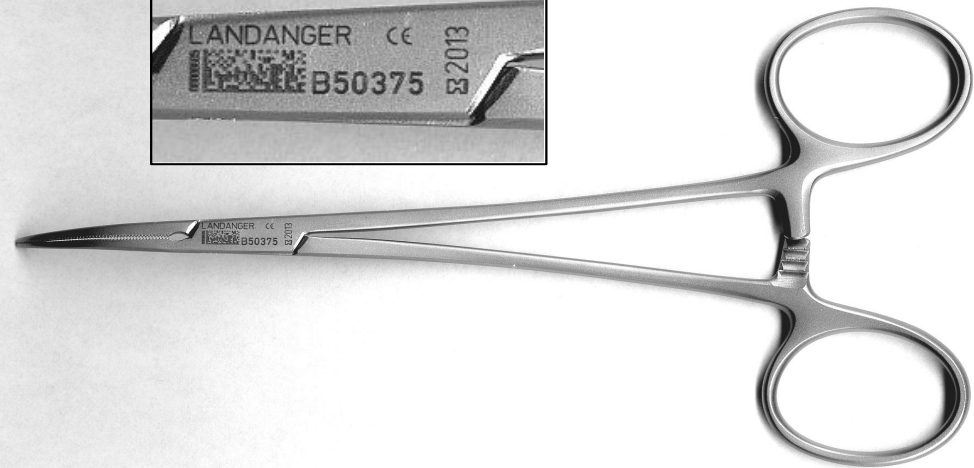- The logic is the same; the specifics match the needs of this sector

Decentralised ID management /1

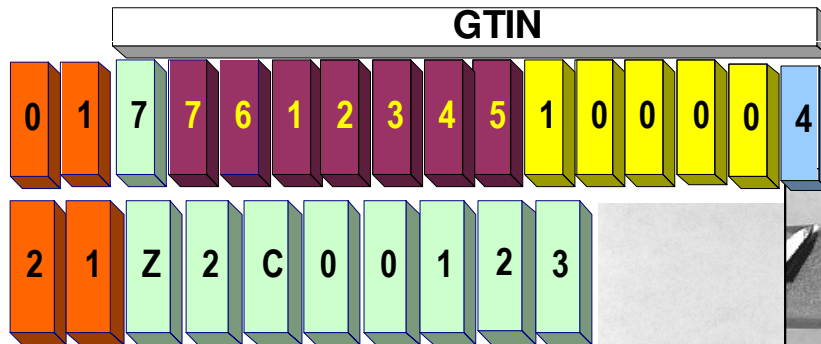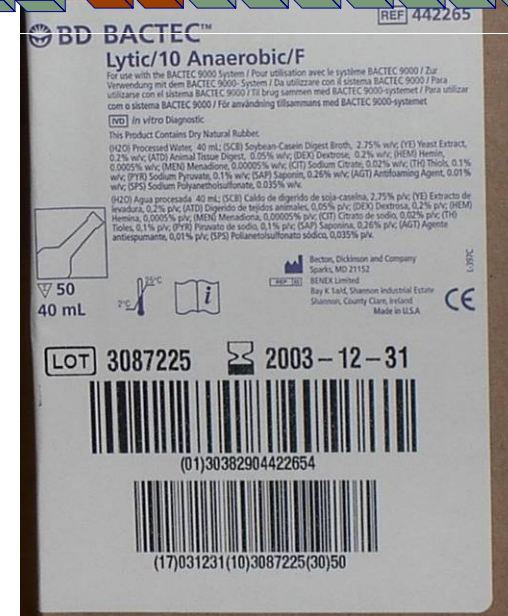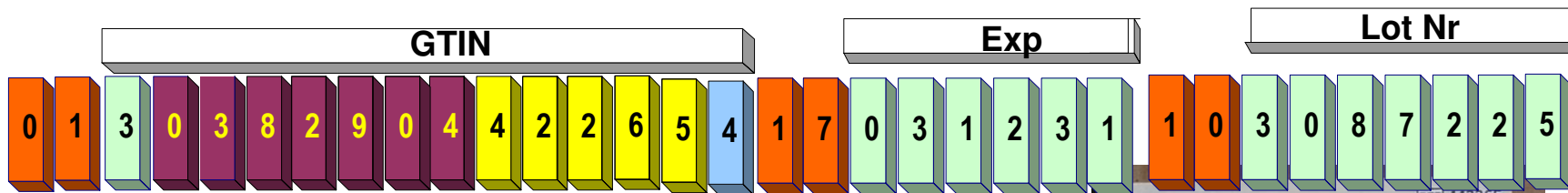- Country prefix
- Company number

GCP

| 7 | 6 | 1 | 2 | 3 | 4 | 5 |

- GCP = Global Company Prefix

GTIN

| 0 | 1 | 7 | 7 | 6 | 1 | 2 | 3 | 4 | 5 | 1 | 0 | 0 | 0 | 0 | 4 |

| 2 | 1 | Z | 2 | C | 0 | 0 | 1 | 2 | 3 |

LANDANGER CE 2013
B50375

Decentralised ID management /2

« AI » qualify a data field in a data carrier

| GTIN | Exp | Lot Nr |

0 1 3 0 3 8 2 9 0 4 4 2 2 6 5 4 1 7 0 3 1 2 3 1 1 0 3 0 8 7 2 2 5

BD BACTEC™

Lytic/10 Anaerobic/F

REF 442265

For use with the BACTEC 9000 System / Pour utilisation avec le système BACTEC 9000 / Zur
Verwendung mit dem BACTEC 9000- System / Da utilizzare con il sistema BACTEC 9000 / Para
utilizarse con el sistema BACTEC 9000 / Til brug sammen med BACTEC 9000-systemet / Para utilizar
com o sistema BACTEC 9000 / För användning tillsammans med BACTEC 9000-systemet

IVD In vitro Diagnostic

This Product Contains Dry Natural Rubber.

(H2O) Processed Water, 40 mL; (SCB) Soybean-Casein Digest Broth, 2.75% w/v; (YE) Yeast Extract,
0.2% w/v; (ATD) Animal Tissue Digest, 0.05% w/v; (DEX) Dextrose, 0.2% w/v; (HEM) Hemin,
0.0005% w/v; (MEN) Menadione, 0.00005% w/v; (CIT) Sodium Citrate, 0.02% w/v; (TH) Thiols, 0.1%
w/v; (PYR) Sodium Pyruvate, 0.1% w/v; (SAP) Saponin, 0.26% w/v; (AGT) Antifoaming Agent, 0.01%
w/v; (SPS) Sodium Polyanetholsulfonate, 0.035% w/v.

(H2O) Agua procesada 40 mL; (SCB) Caldo de digerido de soja-caseína, 2.75% p/v; (YE) Extracto de
levadura, 0.2% p/v; (ATD) Digerido de tejidos animales, 0.05% p/v; (DEX) Dextrosa, 0.2% p/v; (HEM)
Hemina, 0.0005% p/v; (MEN) Menadiona, 0.00005% p/v; (CIT) Citrato de sodio, 0.02% p/v; (TH)
Tioles, 0.1% p/v; (PYR) Piruvato de sodio, 0.1% p/v; (SAP) Saponina, 0.26% p/v; (AGT) Agente
antiespumante, 0.01% p/v; (SPS) Polianetolsulfonato sódico, 0.035% p/v.

Becton, Dickinson and Company
Sparks, MD 21152
BENEX Limited
Bay K 1a/d, Shannon Industrial Estate
Shannon, County Clare, Ireland
Made in U.S.A.

CE

∇ 50
40 mL

LOT 3087225   2003 – 12 – 31

(01)30382904422654

(17)031231(10)3087225(30)50

GTINs and Hierarchy
(Item Reference Uniqueness Approach)

Each item SAME GTIN   3007319 01020 8

Same GTIN

Consumer Trade Item A

3007319 01020 8

Consumer Trade Item B

3007319 01030 7

Consumer Trade Item C

3007319 01040 6

Different GTIN

Each pack DIFFERENT GTIN
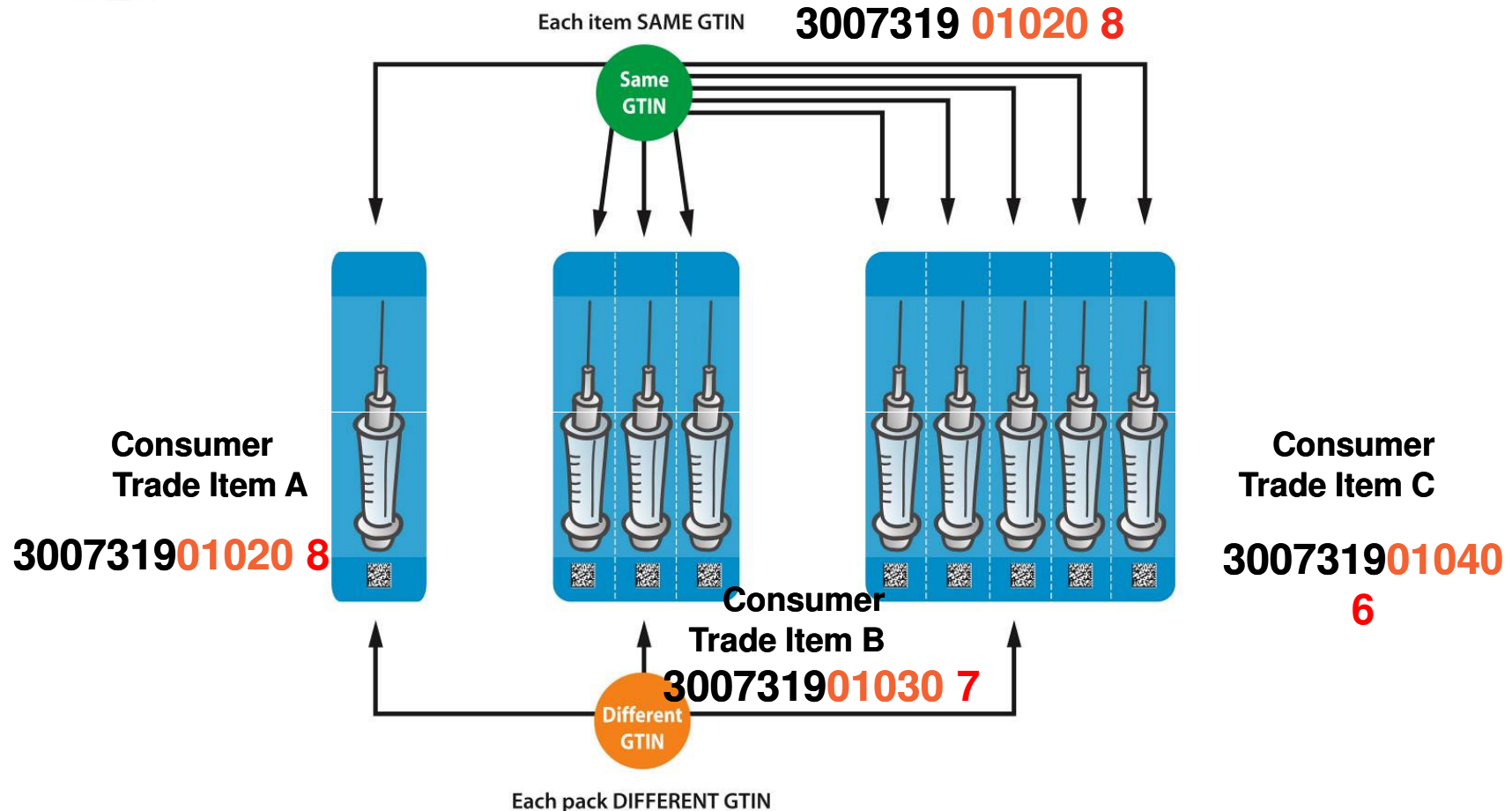
Item Reference method of uniqueness

Standard Development

- Standard maintenance and development are user driven
- The GSMP (Global Standard Management process) has been conceived previously to address standard consistency and back compatibility

Subgroups

- ··GSMP BarCodes & Identification Business Requirements Group (BRG)
- ··GSMP BarCodes & Identification Technical Development Team
- ··GSMP Barcodes & Identification Technology Group (BTG
- ··GSMP Business Modeling Team
- ··GSMP Conformance and Certification Workgroup (WG)
- ··GSMP Data Accuracy BRG
- ··GSMP eCom Business Requirement Group (BRG)
- ....
- ··GSMP GDSN Maintenance Release WG
- ··GSMP GDSN Modular Item WG
- ··GSMP GPC Business Requirement Group (BRG)
- ··GSMP GS1 DataBar (RSS) Coupon Work Group (WG)
- ··GSMP Healthcare Dispensing Unit WG
- ··GSMP Healthcare GTIN Allocation Rules Work Group
- ··GSMP Invoice Work Group (WG)
- ··GSMP Item Futurization Work Group (WG)
- ....

How to reduce medication errors?

Automatic identification solutions reduce the possibility of human error
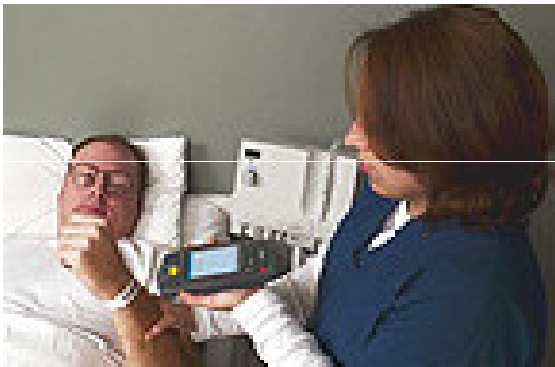
Automatically match patient data, product data and treatment data

Automatic identification up to and at the point of care reduces medication errors

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Proven results

Automatic identification in the Healthcare supply chain: proven results in pilot programs or early adopters in healthcare, for example:

- Bedside scanning **reduced medication errors by 86%** at the Topeka VA Medical Center (US)

- Robotic dispensing system **reduced dispensing errors by 67%** at the Chelsea & Westminster NHS Trust (UK)

- The introduction of a bar code point-of-care system **reduced administration errors by 74%** (from 3.10% to 0.84%) at the Gerle Ziekenhuizen in Maastricht (Netherlands)

- ADE every 100 medication administration (Bates J Gen Intern Med 1995;10:199); teaching hospital Geneva estimates that **50% of barcoded units of use reduces errors costs by 8 Mio $/year**

EAHP request for unit-doses

Unit doses blisters, with each single dose containing the whole information

- Trade name
- Active substance
- Dosage
- Expiry date
- Batch number
- Barcode
  - Including product ID, expiry date and batch number
  - Use of a recognized international standard (i.e GS1)
  - Datamatrix

European Association of Hospital Pharmacists

EAHP, 2007

Prof. Pascal BONNABRY
Etiquetage des médicaments
Lausanne, 27 septembre 2007

Pharmacie

HUG
Hôpitaux Universitaires de Genève

Council of Europe

Unit-doses identification and barcode

Medicines should be provided in unit dose presentations, ready for use and administration, in order to help minimising the occurrence of errors. Medicines regulations should be updated to require complete and unambiguous labelling of every single unit of all licensed medicines (e.g. tablet, ampoule, vial, nebules), including the INN, trade name, strength, expiry date and batch number and a data matrix bar code.

The data matrix bar code should contain a GS1 Global Trading Index Number (GTIN) identifier. A unique identifier may also be included in data matrix bar codes for medicines as part of more general patient safety measures to minimise the risk of counterfeit medicines and health care products entering the supply chain.

Expert group on safe medication practices, 2007

Prof. Pascal BONNABRY
Etiquetage des médicaments
Lausanne, 27 septembre 2007

Pharmacie

HUG

GS1 ID Keys

SSCC:
Serial Shipping Container Code

The GS1 ID Key for an item of any composition established for transport and/or storage, and that needs to be managed across the supply chain.
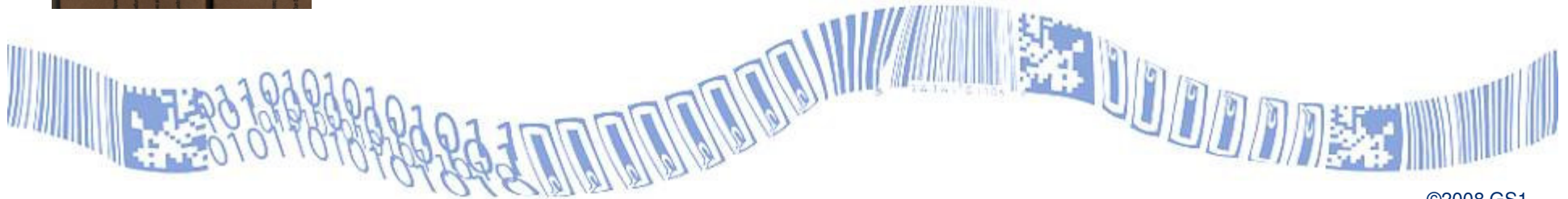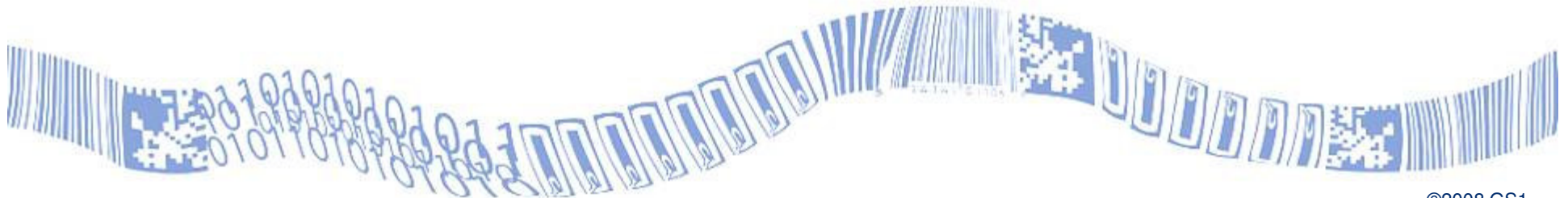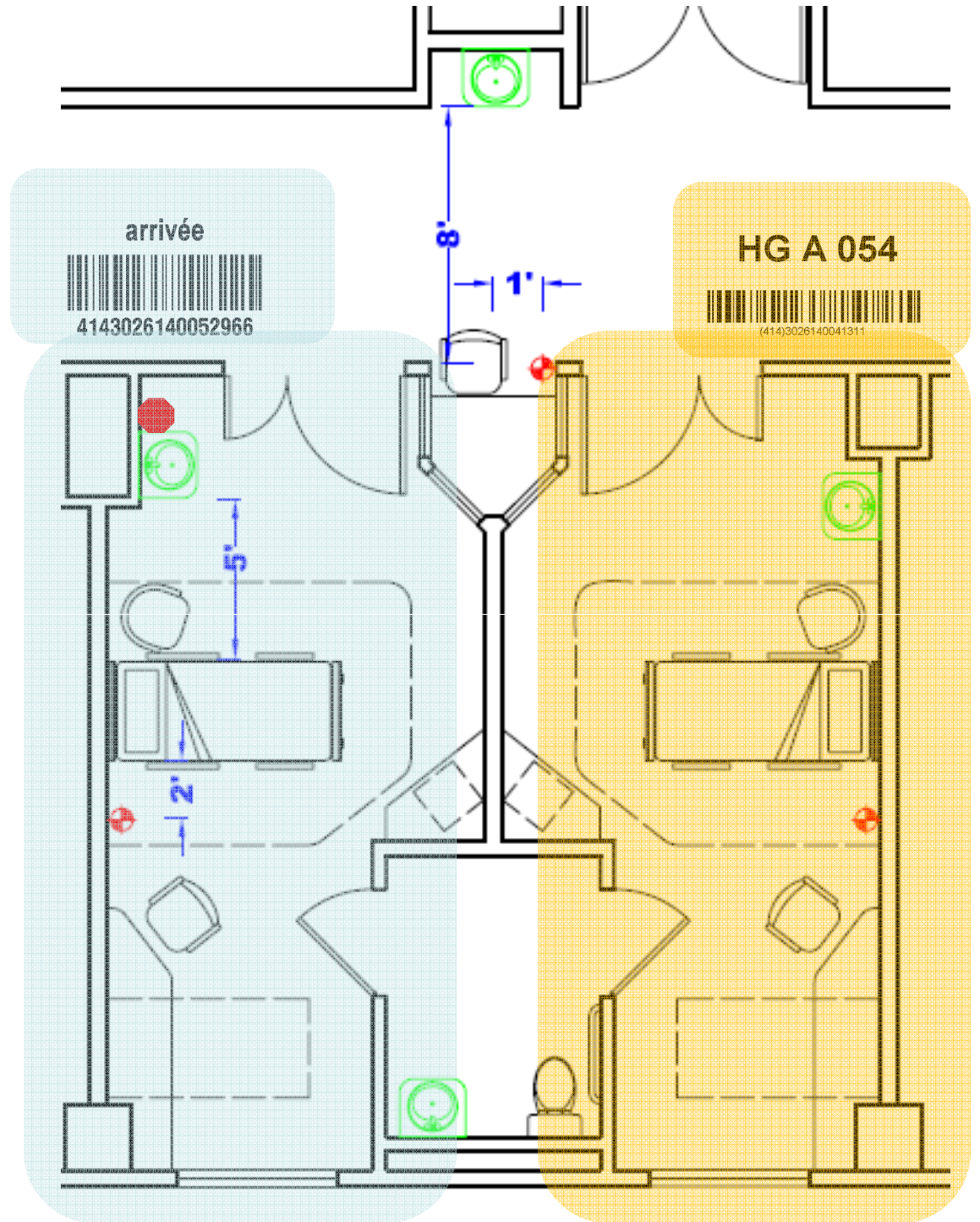
GS1 ID Keys

GLN:
Global Location Number

The GS1 ID Key used to identify physical locations of items in the supply chain.

4103026140052960

BLOC CHIR CARDIO-VASC

4103026140000790

CB - Stérilisation

arrivée

4143026140052966

HG A 054

(414)3026140041311

St. Joseph's Medical Center, Bryan, TX

Design: WHR Architects
From a presentation of Roger S. Ulrich, Ph.D.,
Center for Health Systems and Design
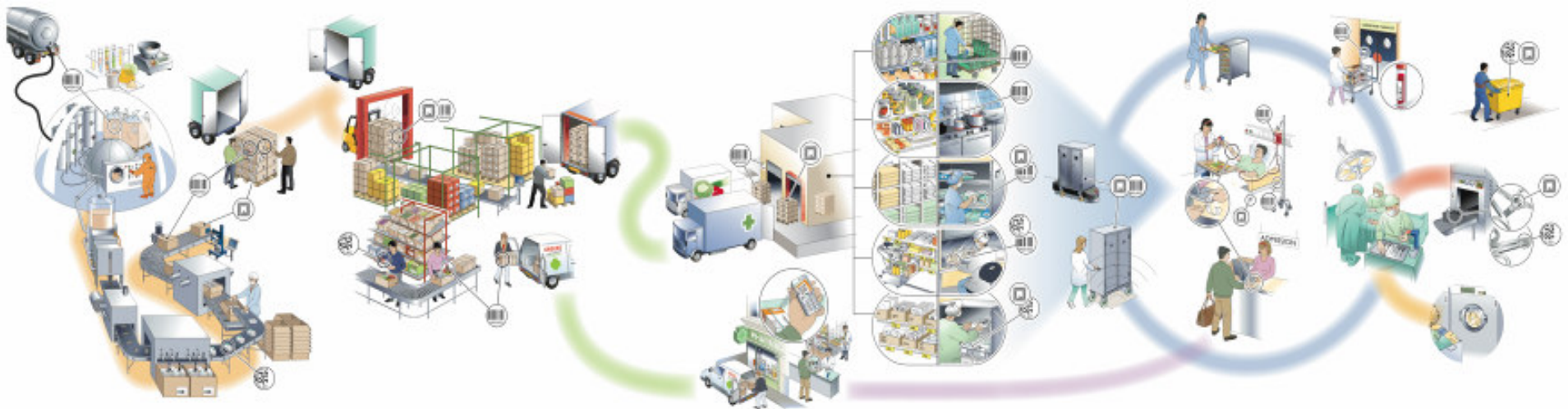Colleges of Architecture and Medicine
Texas A&M University, 2007

Global Healthcare User Group

GS1 Healthcare is a voluntary, global user community bringing together all healthcare stakeholders

Including: manufacturers, wholesalers, distributors, hospitals, pharmacies, regulatory bodies, trade associations

GS1 Healthcare Mission & Vision

Our Mission

To lead the healthcare sector to the successful development and implementation of global standards by bringing together experts in healthcare to enhance patient safety and supply chain efficiencies.

Our Vision

To become the recognised, open and neutral source for regulatory agencies, trade organisations and other similar stakeholders seeking input and direction for global standards in healthcare for patient safety, supply chain security & efficiency, traceability and accurate data synchronisation.

Global Healthcare User Group

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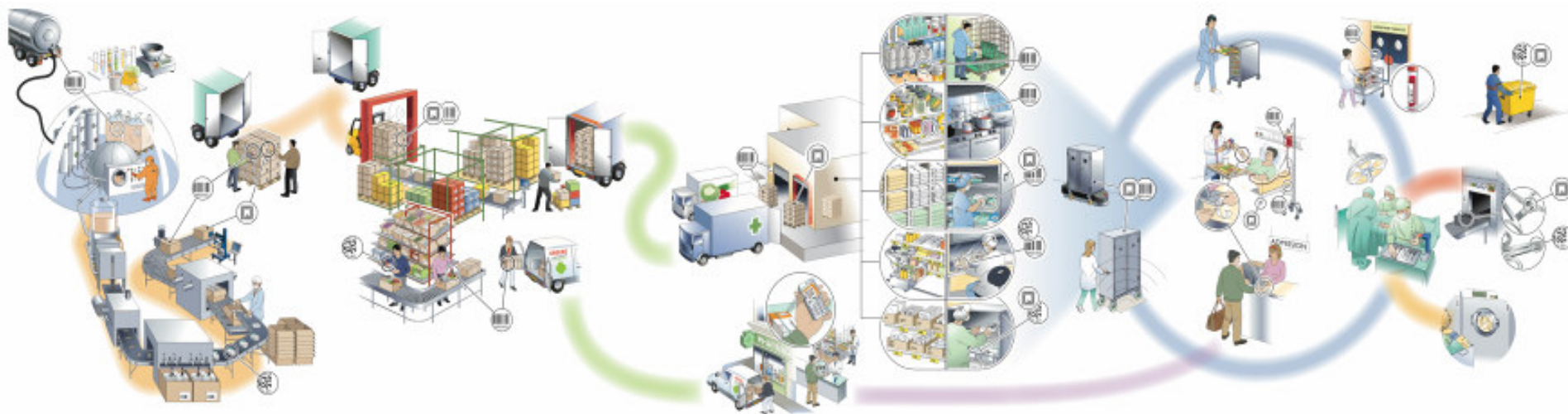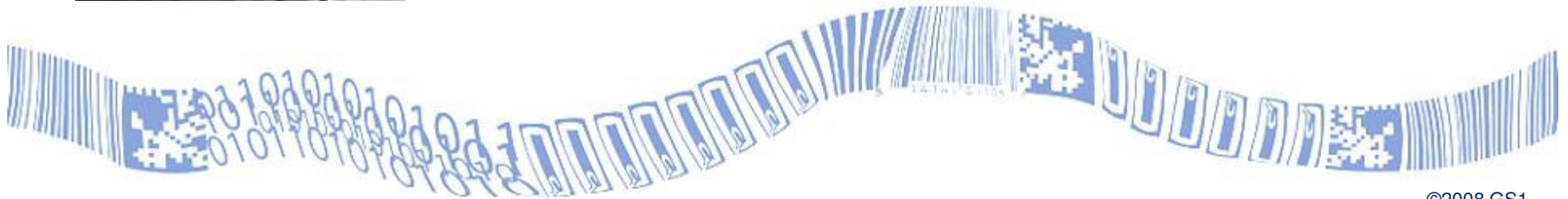
GS1 Standards in Healthcare

- Enable automatic identification systems
- Enable traceability systems
- Enable « clean » data

GS1 Standards in Healthcare improve patient safety

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Our Goal : working together

GS1 and HL7 Join Forces to Develop Global Standards
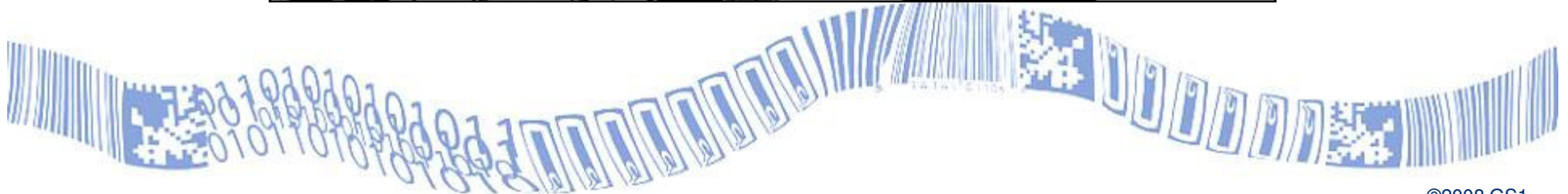to Improve Patient Care

Two complementary global standards organizations will collaborate to develop global healthcare standards

to reduce medical errors and to increase the effectiveness of the healthcare supply chain.

GS1 Healthcare and ICCBBA join forces
to advance global standards to improve patient safety

GS1 standard to enhance patient safety

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