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GS1 Healthcare - What barcodes can do for your hospital and your patients

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EAHP Congress, Hamburg 26th March 2015



- Public Pharmacies for 7 years
- Hospital Pharmacy for 11 years
– German University Hospital (Aachen)
- Product Manager and Managing Director with GHX for three years
- **CONFLICT OF INTEREST:**
Vice-President at GS1 Global Office – working at GS1 for 10 years



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GS1 – an international standards organisation



Not-for-profit
111 Member Organisations
Over one million user companies
(from SME to global companies)
Member driven
150 countries served; 20 different domains
2,500 people helping us
Over 6 billion transactions a day

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GS1 in Healthcare: global system of standards to ensure visibility



Lack of standards are inefficient and add risk in Healthcare



- Multiple bar codes on one package – which one to scan?
- Different types of bar codes – inconsistency; incompatibility
- No bar code – need to bar code; re-package; re-label



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GS1 Healthcare - voluntary, global Healthcare User Group



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**.



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GS1 Healthcare Global User Group - experts from the industry



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GS1 Healthcare Global Members - informed and knowledgeable



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Leading healthcare organisations pave the way...



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Why do we all care?



- For the safety of patients
- Comprehensive management of medicines alerts and recalls;
- Safeguarding patient safety in an ageing society
- Managing information for systems & outcomes improvement
- Providing assurances against potential counterfeit intrusion and fraud

For the primary purpose of reducing medication errors and protecting patient safety, EAHP's statement calls for each single dose of medicine used within hospitals and supplied to the hospital by manufacturers or wholesalers to include an individual barcode in GS1 DataMatrix format.

<http://www.eahp.eu/practice-and-policy/bar-coding-medicines-to-the-single-unit#>



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Efficiency by providing a homogeneous scanning environment



- Homogeneous environment for scanning implies that one single system of standards is used



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Patient = Subject of Care (SoC)



Could be:

- ✘ Receiving care in a hospital or other institution
- ✘ Suffering a chronic disease, cared for at home
- ✘ Healthy, but being administered a vaccine
- ✘ Healthy and pregnant
- ✘ Healthy and involved in a prevention program



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Patient Identification



Automatic identification systems are able to reduce medication errors due to patient misidentification by 65-86% (Source: US Department of Veterans Affairs)

ISO standard – developed together with other standard organisations and ICCBBA

- ✓ Existing AI 8018 – has the ability to embed existing numbers such as NHS number
- ✓ New AI 8019 - Service Relation Instance Number (SRIN)
- ✓ Optional attribute to capture «instances» in the care processes



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Caregiver Identification



ISO standard – developed together with other standard organisations and ICCBBA

- ✓ AI 8017 identifies the care giver in the process
- ✓ Ability to embed existing numbers



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Product Identification = GTIN



GTIN (Global Trade Item Number) is a GS1 "Key"

GS1 "Keys" are used to provide access to trade item related information held in computer files... information about product, package, manufacturer, price, etc.



Globally unique, secure, foundational, non-significant

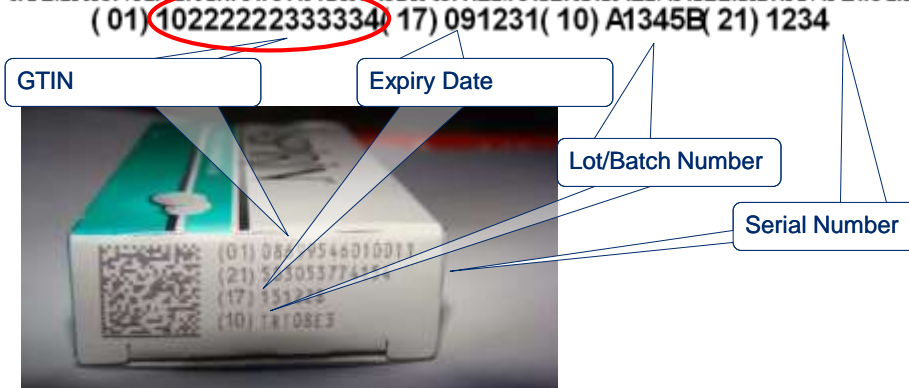


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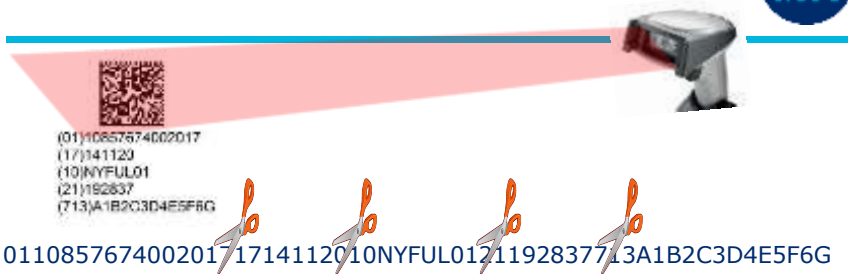
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Capturing the identification by using GS1's syntax



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Scanning and AI's in Action



0110857674002017 17141120 10NYFUL01 21192837 713A1B2C3D4E5F6G ?
0110857674002017 17141120 10NYFUL01 21192837 713A1B2C3D4E5F6G
10857674002017 20 Nov 2014 NYFUL01 192837 A1B2C3D4E5F6G

ERP Entries

GTIN:	<input type="text"/>	SERIAL:	<input type="text"/>
EXPIRATION:	<input type="text"/>	NHRN:	<input type="text"/>
BATCH/LOT:	<input type="text"/>		



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GS1 Data Carriers for Healthcare



Camera-based bar code scanners are needed in HC !!
Can read linear and 2D bar codes

GS1 Healthcare Position Statement

GS1 Healthcare recommends investing in Camera-Based bar code scanners to address specific needs for Automatic Identification in Healthcare

Because of the increased complexity of camera-based bar code carriers, GS1 Healthcare (GS1) global healthcare user group strongly recommends to invest in such carriers when evaluating the costs, benefits or when replacing existing linear bar code carriers. This will facilitate the future adoption of global standards for automatic identification in healthcare supply chain.

Camera-enabled automatic identification provides the opportunity to make the healthcare supply chain more efficient and accurate, and faster. It will also help enable the patient to receive the best patient experience and provide greater transparency of the supply chain, reducing the risk of error.

GS1 Healthcare promotes the adoption and implementation of the GS1 system of standards to automatically identify patients, products, caregivers, and to others. It is the most widely used system worldwide, with over 100 million carriers and 100+ standards. The system consists of a hierarchy of identification keys such as the GTIN, Serial Trade Item Number and attributes such as the expiry date, which ensure the same independent of the type carrier. Identification can be based on GS1 barcodes such as the GS1 DataMatrix or GS1 DataMatrix 2D barcode using an RFID tag.

Compared to linear coding or, for example, a generic linear assignment, pharmaceutical and medical devices coding has many specific requirements, including:

- a large amount of data (product ID, batch number, expiry date, etc.) in multiple world markets... in one dimension 2D barcode
- fast data information such as critical identification numbers of each individual product at high production rates
- short print lengths (e.g. supply containers and implants)
- readability for mobile devices and handheld scanning devices, and from a distance patient safety

The above requirements may not always be addressed with linear 1D bar codes, and a solution is needed.

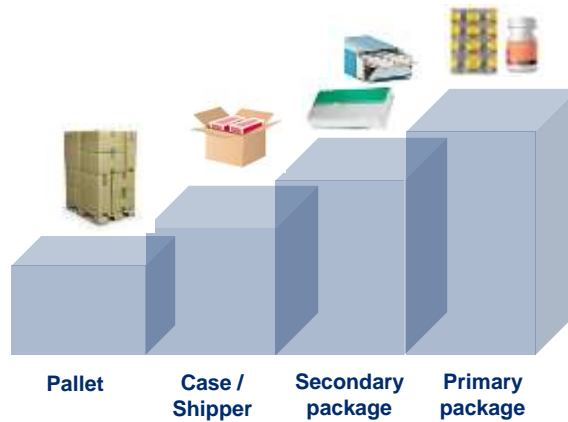
GS1 DataMatrix




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Different packaging levels require different GTIN's



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LBE..... Level Below the Each



- To move the industry ahead a global standard was needed
- No manufacturer will make such an investment in process change (machinery, IT, etc.) based only on national/local requirements



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Some new definitions...



Thanks to EAHP and other global experts

- **Single unit** = Single item of medicine/Medical device without any package, for example the single tablet in a blister or bottle, the syringe as such.



- **Single unit package** (GS1 primary package) is the one that contains one discrete pharmaceutical dosage form. i.e. a tablet, a certain volume of a liquid or that is the immediate package for a medical device like a syringe



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New definitions also



- **Multiple unit package** (can also be GS1 primary package) – Immediate package for a medicine with more than one single unit



- **OUT OF SCOPE: Unit dose** (unit dose is the prescribed dose for a patient while single unit relates to the product)



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Standard = Agreement



- **Single unit** – allocation is responsibility of brand owner, not expected to be marked in AIDC format
- **Single unit package** = primary package = GTIN, other data attribute like lot/batch number, expiry date, serial number are voluntary
- **Secondary package** = GTIN and attribute data (expiry date and/or lot/batch number and/or serial number)



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New McKinsey & Company report quantifies supply chain issues in Healthcare



New McKinsey report "**Strength in unity: The promise of global standards in healthcare**"

Highlights the **cost savings and patient safety** benefits of adopting a **single global supply chain standard in healthcare**

Available at:
<http://www.gs1.org/healthcare/mckinsey>

Source:
<http://www.mckinsey.com>



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Huge cost savings and patient safety benefits when adopting a single global standard in healthcare



! "Implementing **global standards** across the entire healthcare supply chain **could save 22,000-43,000 lives** and avert 0.7 million to 1.4 million patient disabilities"

"Rolling out such standards-based systems globally **could prevent tens of billions of dollars' worth of counterfeit drugs** from entering the legitimate supply chain"

[We] "estimate that **healthcare cost could be reduced by \$40 billion-\$100 billion globally**" from the implementation of global standards

"Adopting **a single set of global standards** will cost significantly less than two" (between 10-25% less cost to stakeholders)

SOURCE: McKinsey report, "Strength in unity: The promise of global standards in healthcare", October 2012



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Experiences and developments – some examples



- **US:** 60% of all hospitals scan covering 70% of all hospitals beds
- **Denmark:** Amgro requiring identification on primary packaging level for certain products
- **Brasil and Argentina:** Bedside scanning in multiple hospitals
- **Belgium:** Leuven hospital is scanning at 80% of wards
- **Taiwan:** Study shows benefits – regulation?
- **Netherlands:** Hospitals prove benefits
- **Austria and Switzerland:** Cytostatics from production to bedside

...and there are others

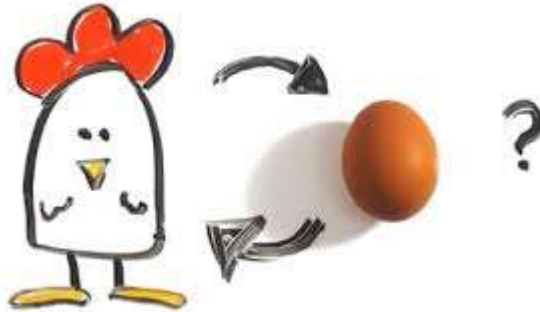


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We must overcome this...



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Ultimately, it's all about...



PATIENT SAFETY!



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Contact Details



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Question 1



Barcodes on the single unit package will

1. Reduce medication errors and increase patient safety
2. Facilitate automatic capture of data for electronic health records
3. All of the above



Question 2



When I want to introduce bedside scanning in my hospital I need to invest in

1. Laser barcode scanners like in supermarkets
2. Camera-based scanners
3. I need no scanners at all



Question 3



GS1 standards are

1. National
2. Regional
3. Global

