Patient safety gains in a Brazilian hospital thanks to the implementation of GS1 identifiers

Nilson Gonçalves Malta, Pharmacist, Hospital Automation Manager at Hospital Israelita Albert Einstein, Brazil
February 8th, 2018
Welcome and thank you for attending!

- Welcome to our February 2018 webinar. Thank you to our guest speaker – Mr. Nilson Gonçalves Malta, Pharmacist and Hospital Automation Manager from Hospital Israelita Albert Einstein, Brazil
- Some housekeeping for today:
  - All attendees will be on mute
  - If you have questions during the presentation, please type them into the questions area and these will be monitored then answered at the end of the call
- After the webinar:
  - Within a week, the recording will be posted to: http://www.gs1.org/healthcare/hpac_webinars
  - All previous webinars are also posted to this location, so please feel free to use this resource and share the link
The GS1 Healthcare Provider Advisory Council (HPAC)

**Focus is on thought leaders and adopters of GS1 Healthcare Standards from the global clinical provider environment. Their final goal is to improve patient safety, cost efficiency and staff productivity through implementation of GS1 standards.**

- **A forum for sharing and discussion**
  - About the practical realities of implementation of GS1 Standards in the care giving environment in regards to the impact on clinical care and patient interaction
  - That support the adoption of GS1 Standards in healthcare providers and retail pharmacies
  - For publication, presentation and sharing

- **Identification of projects and case studies**

- **A source of expertise and advice**
  - To those involved in GS1 standards development, the wider Healthcare stakeholder community and senior executives/decision-makers to gain their buy-in and support for implementation of GS1 Standards
HPAC Activities

**Webinars**

- Monthly webinars open to all stakeholders interested in learning about GS1 standards implementation in the care giving environment.
- [http://www.gs1.org/healthcare/hpac_webinars](http://www.gs1.org/healthcare/hpac_webinars)

**Awards**

- Twice per year
- Provider Best Case Study Award
- Provider Recognition Award
- The prize is travel / accommodation to attend the next GS1 Healthcare conference
- [http://www.gs1.org/healthcare/hpac](http://www.gs1.org/healthcare/hpac)

GS1 Healthcare also holds two global conferences per year. The next conference will be in Bogota, Colombia from April 10-12, 2018, with significant Healthcare Provider participation on the agenda.
Presenting today

Nilson Gonçalves Malta

- Pharmacist-Biochemist, graduated at Universidade de São Paulo.
- Specialist in Hospital and Healthcare Systems Administration, Fundação Getulio Vargas.
- Acting at Hospital Israelita Albert Einstein for 18 years, currently occupies the position of Hospital Automation Manager.
- Responsible for several automation projects in Hospital Pharmacy Logistics and Clinical processes.
Patient safety gains in a Brazilian hospital thanks to the implementation of GS1 identifiers
Main topics

• The journey undertaken to create a hospital dispensing system with barcoding in unit dose up to the point of care;
• The effects of this on patient safety and traceability;
• How the hospital found partners in the pharmaceutical industry;
• The extension of the implementation to other area’s such as medical devices (disposables) all over the hospital and Nutrition (enteral diets);
• The necessary facilitation of IT;
• Challenges faced and next steps.
Premise

Patient Safety

#1
What do we know?

According to IOM report (Institute of Medicine – EUA, 1999), 7,000 Americans die annually due to medication errors.

Annually, medication errors cost 3.5 billion dollars according IOM estimations (2006).

Traceability in hospitals

What shall I do?

Certifications

Wait for or DO IT NOW?
Initial difficulties

- Providers do not identify their product within hospital requirements. In the sector, EAN 13 is not enough.
  - Ordinance 801/98 – EAN13 have to be applied to all medicines secondary packages
- Without lot, hospitals have to relabel all items that need to be tracked and traced.
Once back in 1998

- **Barcodes** applied to all products in the internal supply chain.
- Traceability requires barcode with lot and expiry date encoded.
Unsafe relabeling process

- Misidentification risk
- High expenditures on man power
Oral solids unit doses

• How they are...
Find your KEY PARTNER!
Seeking a standard

- **Data Matrix** - Symbology developed for being applied where the linear barcode cannot be used due to space restrictions, what in pharmaceutical products is very common. This 2D code may carry lot and expiry date among other possible information. They are based on Application Identifiers (AI).

![GS1 DataMatrix]
Seeking a standard

Product identification

Expiration

Lot

Serial Number
Industry partnership

- **2005** – Pioneer initiative GS1 RSS
  - HC WG GS1 Brasil / Albert Einstein & Hypofarma
- **2008** – GS1 DataMatrix

DataMatrix – they started...

...others followed
New standard – New issues

- Badly printed barcodes by some suppliers.
- Lots of technical issues involving barcodes. Some providers printed different information in human readable form from barcode. Others used the incorrect FNC1. Others used the GS character when not needed. Others did not put the GS when needed.

FNC1 - ]d2

GTIN: 03453120000011
VALIDADE: 2009-11-25 (aa-mm-dd)
BATCH/LOTE: ABCD1234

FNC1010345312000001111709112510ABCD1234
New standard – New issues

- Correct use of Group Separator GS

FNC101034531200000111709112510ABCD1234 FNC1422250

(01)0345312000011(17)091125(10)ABCD1234(422)250
New standard – New issues

- Different forms of “printing” the code:
  - Thermal transfer
  - Ink jet
  - Laser
  - Direct marking
Other challenges

- Barcode scanner selection and configuration, because of the AI structure inside 2D GS1 codes.
- Staff Training.
DataMatrix

• How should it be...

All GS1 DataMatrix
Whole process covered
BCMA

Bar-code-assisted Medication Administration

User identification
• Logon

Patient identification
• Wristband code

Drug identification
• DataMatrix
BCMA continued

Alerts
- Right drug?
- Qualified professional?
- Right dose?
- Right time?
- Etc.

Final confirmation
- Last time to rollback...
- Refuse, loss, etc.
- Final registry

Log
- EHR registry
- Full history
ROI

• Results:
• 150 to 170 thousand units/mo. do not have to be relabeled anymore
• 600 hours of manpower saved/mo.
• Consumables use reduction (labels and ribbons) – about US$ 600/mo.
Qualitative results

• Agility in the dispensing process, with online inventory decrement.
• Verification of the item dispensed as ordered.
• History of the batch of the drug from the receiving to the time it is used by patients (TRACEABILITY inside the hospital).
• Item History, from manufacturer to its use (complete TRACEABILITY outside and inside the hospital).
• Guarantee the dispensing drugs in condition of use, with lots being blocked from dispensing which may have been recalled or are expired.
Qualitative results continued

• History of the batch sent to each sector.
• Agility in localizing products banned for recall.
• Electronic bedside check of medication administration, according to the order and ensuring control over 7 of 9 rights proposed.
• Important tool for obtaining quality certifications.
• Patient safety, allowing the register of medication/active ingredient in all logistics steps and at the time of its consumption, allowing the traceability of use until its final step.
Next Challenge – Legal Demand

- Brazilian Traceability law (13.410/16)
- Establishes the National System of Drugs Control and defines mechanisms of tracing through technology of data capture, storage and electronic transmission.
Industry → Distributor → Hospital → Patient

LAW = SECONDARY PACKAGE

GS1 DataMatrix: GTIN + Lot + Expiry date

HOSPITAL = PRIMARY PACKAGE

GS1 DataMatrix: GTIN + Lot + Expiry date + ANVISA + serial (IUM)
Será composto por:
- GTIN
- Nº do registro
- Nº serial
- Data de validade
- Nº do lote

Nº do serial
Data de fabricação
Data de validade
Nº do lote

Logo da empresa
NOME COMERCIAL
princípio ativo

Nº do registro
13 dígitos
GTIN

Impressão direta no cartucho

Manter no mesmo local atualmente utilizado

Source: Guia de Codificação de Medicamentos GS1 (www.gs1br.org)
And we did more

• Medical devices identification – OR
  - Several GS1 Standards adopted
    • EAN 8 (GTIN 8)
    • EAN 13 (GTIN 13)
    • UPC A (GTIN 12)
    • GS 128 (GTIN 14)
    • GS1 DataMatrix (GTIN 14)
  - Serial number to be captured
• Nutrition products
Coming soon

- RFID tracing of high-cost medical devices in the OR
Thank you!

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HPAC Questions and contact details

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