Who am I?

- Master in Laws, University of Geneva
- Married, 2 children
- Board Swiss Medical Informatics Association
- Past-Chair IHE Suisse
- With GS1 since 1991
Major requirements for AIDC in hospitals
Hospitals and AIDC: importance of DATA!

=876345B72# (410)7601000059949
(01)00614141999996

*7654321* 551129#27B

ABC1234

449/54/409/144 M0692699

(8018)761316780001234564

01006141419999961712102410abc123

F0692699

449.54.409.144 002348992

80187613167800012345648019987654321
Hospitals and AIDC: importance of DATA!

=876345B72# (410)7601000059949
(01)00614141999996

*7564321* 551129#27B

ABC1234

449/54/409/144 (8018)761316780001234564

M0692699

(01006141419999961712102410abc123

F0692699

449.54.409.144 002348992

80187613167800012345648019987654321
Two Types of Patient Identification Errors

1. Duplicate MRN
2. Two different persons sharing one MRN

• These two types of errors are not created equal..

MRN = Medical Record Number
importance of carrier

- **code**
- **barcode**
- **2-D**
- **rfid**
and readers
Nursing = Lara Croft ?
Major requirements for patient id & HCP id
Patient = Subject of Care (SoC)
A Subject of Care is….

- Receiving care in a hospital or other institution
- Suffering of chronic disease, cared at home
- Healthy, but being administered a vaccine
- Healthy and pregnant
- Healthy and involved in a prevention program
How to identify…

You’ll be happy to know we have new procedures that’ll prevent mistakes, Mr Brown

My name’s Smith!
How to identify…
**Caregiver Identification**

- New AI defining the ROLE (8017)
- Definition more precise
- Ability to embed existing numbers
Subject of Care Identification

- Existing AI 8018
- Definition more precise
- Backward compatibility
- Ability to embed existing numbers such as NHS number
Subject of Care Identification with SRIN

- Existing AI 8018
- Optional attribute to capture «instances» in the care processes
- SRIN= Service Relation Instance Number (AI 8019)
# Workarounds

<table>
<thead>
<tr>
<th>Workaround Type</th>
<th>Discovery</th>
<th>Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caregiver does not scan patient armband.</td>
<td>For given date range, reviewed armband scan rate is lower than medication scan rate to a degree greater than 5%.</td>
<td>• Education on workflow requirements</td>
</tr>
<tr>
<td>Caregiver scans proxy barcode.</td>
<td>If there are Proxy Barcodes available to be scanned, they will at some point be scanned.</td>
<td>• Continued monitoring</td>
</tr>
<tr>
<td>Caregiver prints additional armbands to act as proxy barcodes.</td>
<td>Audit Trail of armband printing in nursing units</td>
<td>• Use of 2D barcodes to make it easier to scan the armband</td>
</tr>
<tr>
<td>Caregiver does not scan medications.</td>
<td>Low medication scan rate</td>
<td>• Setup workflow to have the armband scanned before medications are scanned.</td>
</tr>
</tbody>
</table>

Source: Design for Reliability: Barcoded Medication Administration
By Avis C. Hayden, PhD; Edward T. Lanoue, BSPharm, RPh; and Charles J. Still, MBA, Patient Safety & Quality Healthcare, July-August 2011
Workarounds and GSRN + SRIN

- Individual Provider does not scan SoC identification band
- Individual Provider scans proxy barcode
- Individual Provider prints additional identification bands to act as proxy barcodes
- Individual Provider does not scan medication

Proposition does not impact
Proposition avoids workarounds
Best solution for AIDC

- Linear Symbol: not appropriate for GSRN
- Global Uniqueness of the key in the AIDC process

Datamatrix
The next step
Development of ISO Technical Specification

Explain the wider user community

Reference use cases to illustrate implementation
Contact

Christian Hay
Sr Consultant Healthcare

Tel   +41 (0) 21 825 32 19
Mob   +41 (0) 76 369 10 54
christian.hay@gs1.org
Ask the bedside scanning and Patient ID experts

Nilson Gonçalves Malta
Pharmacist
Hospital Israelita Albert Einstein
São Paulo - Brasil
Who am I?

- Nilson Gonçalves Malta
  - Senior Pharmacist at Hospital Israelita Albert Einstein
  - Graduated at São Paulo University
  - MBA in Hospital and Health Systems Administration at Getulio Vargas Foundation
  - Current activity: Pharmacy Informaticist
    - Systems conception, development support, testing, maintenance and user support
      - Logistics Automation
      - Clinical Decision Support Systems
      - Hospital Information System
      - Pharmacy Information System
Our Hospital (Morumbi Unit)
Some numbers (2011)

- About 10,000 employees (without third party)
- 644 beds
- 188,242 patient days
- 227,005 attendances in Emergency Dept
- 3.8 millions of examinations
- 34 surgery rooms
- 35,420 surgeries
- 3,531 births
- Transplants - among the most successful programs of the world.
  - The index of transplanted patients’ survival is compared to the best hospitals of United States and Europe.
  - performed 2,208 organ transplants (Between 2002 and 2011)
BCMA – Bedside Check Medication Administration

Management and Registries System
Background

• Our main issues:
  • No oral solids have a barcode at the each level (single unit package).
    – In Brazil the majority of the oral solids are available in blisters and the barcode (EAN13) is printed only on the secondary package
  • Ampoules and vials have no barcode
  • Bottles have barcode (EAN13) also only on the secondary package

• Brazilian Law:
  • Ordinance 801/1998 – GTIN + EAN-13 established as standard for medicines
  • Law 11.903/2009 – Established GS1 DataMatrix as new standard, but currently still under discussions at the Health Ministry.
What we did

- All oral solids need to be repackaged
- All ampoules, vials and bottles are relabelled
- Compounded injectables receive a specific barcode
- Some industries established a partnership with the hospital in order to provide their drugs with GS1 DataMatrix
Ordering and Dispensing process

Ordering in CPOE

Order Review

Dispensing

Pharmacists’ role

Doctors’ role

Pharmacists’ role
BCMA process

- User Identification
- Patient (SoC) identification
- Wristband barcode
- Drug barcode
- Drug identification

System Logon
Expected BCMA behaviour

- Many alerts must be given to the user in order to avoid administration error:
  - Wrong drug (drug not ordered)
    - Is it an urgent verbal order? Confirm and justify
  - Expired drug
  - Dose above or below the ordered (give just the dose ordered or read another unit)
  - It’s too soon or too late (based on ISMP recommendations). Confirm and justify
  - Compounded injectables (serialized barcode) specific details
    - Correct patient (drugs are prepared and tied to a specific patient).
    - Stability check
  - Evaluate PRN orders, showing the last administration time
  - Allergy check
  - Is the caregiver allowed to administrate the drug (IV’s, chemotherapy, etc.)
BCMA process cont.

Alerts
- Correct drug?
- Qualified caregiver?
- Etc.

Log
- Registries in EHR
- History overview

Final Confirmation
- Last opportunity to roll back
- Lost drug, patient refusal, etc
- Final log
Logs, logs and logs

- All information generated must be logged in the EHR.
  - What has been done?
    - Everything is logged
    - History recovery
  - Adverse events
    - Learn from mistakes - avoid new occurrences
Implementation issues

• SoC wristband
  • Fragile linear barcode print (folded, faded, wet)

• Ipad platform
  • Software developed for IE. IT did not support Safari compatibility
  • User were obliged to use the system through Citrix Cloud, accessing Windows
  • Bluetooth reader. Difficult to operate through Citrix

• Drug barcodes
  • Some cases, multiple barcodes (Industry, Distributor and Pharmacy). Specially in case of oral liquids, ointments, and some vials not compounded in pharmacy

• System interface
  • BCMA system X logistics system (different databases)

• Caregiver ID
  • System Logon – should have a second identification (read personal badge) to confirm user logged in (users forget to logoff)
Some results (2012)

% BCMA administration- A1 East Wing

© 2012 GS1
Thank you!

NILSON GONÇALVES MALTA
Pharmacist

Av. Albert Einstein, 627/701 - CEP 05652-901 - São Paulo - SP - Brasil
Fone: (55-11) 2151-2248 - Fax: (55-11) 2151-4212
e-mail: nilsongm@einstein.br
Overview of instrument and implant traceability

Goal: Full traceability as it is mandatory and French Pharmacists are personally liable for Drugs and Sterile Medical Devices

Challenges: Managing the projects which are fundamentally linked together with too few resources (pharmacists, IT, ..)