



Bedside Scanning: “Patient” Identification

Healthcare Conference Lisbon
October 2012





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

ABC1234

7654321

551129#27B

449/54/409/144

(8018)761316780001234564

M0692699

01006141419999961712102410abc123

F0692699

449.54.409.144

002348992

80187613167800012345648019987654321



Hospitals and AIDC: importance of DATA!

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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..

importance of carrier

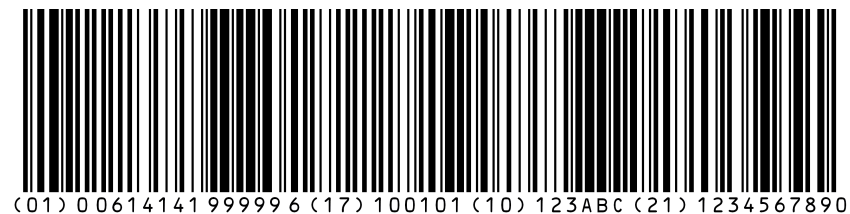
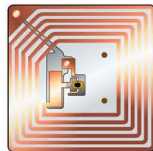
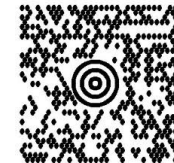
- code
- barcode
- 2-D
- rfid

OCR-A
 1234ABCD
 Alphanumeric
 (+4 currency char.)

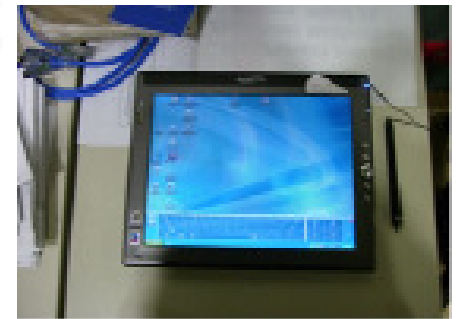
OCR-B
 1 2 3 4 A B C D
 Alphanumeric
 (+4 currency char.)

MICR E-13B
 1 2 3 4 5 6 7 8 9 0
 Numeric
 (+4 special char.)

SEMI M12
 1234ABCD
 Alphanumeric
 (+4 currency char.)



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** !



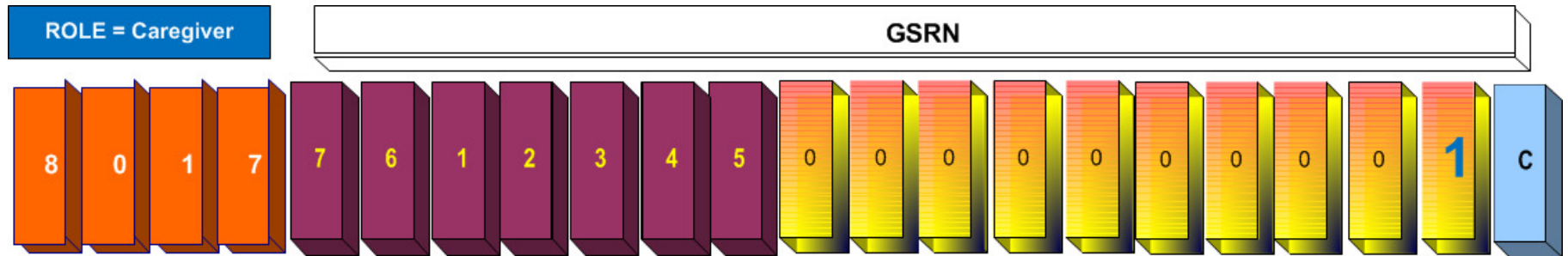


How to identify...





Caregiver Identification

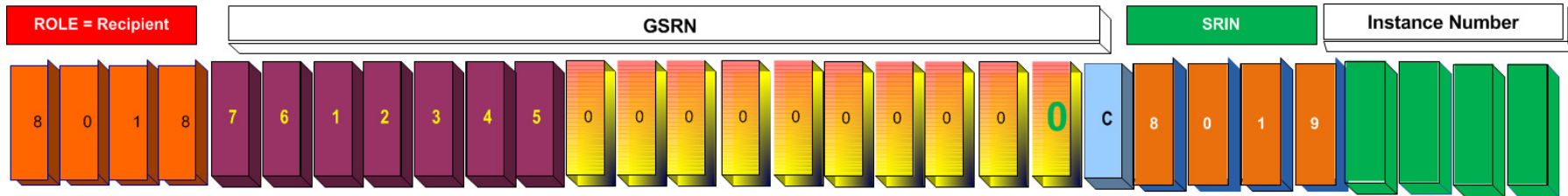


- ✓ New AI defining the ROLE (8017)
- ✓ Definition more precise
- ✓ Ability to embed existing numbers





Subject of Care Identification with SRIN



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





Workarounds

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

Workaround Type	Discovery	Solutions
Caregiver does not scan patient armband.	For given date range, reviewed armband scan rate is lower than medication scan rate to a degree greater than 5%.	<ul style="list-style-type: none"> • Education on workflow requirements • Continued monitoring • Use of 2D barcodes to make it easier to scan the armband • Setup workflow to have the armband scanned before medications are scanned.
Caregiver scans proxy barcode.	If there are Proxy Barcodes available to be scanned, they will at some point be scanned.	Disable the capability of proxy barcodes to be scanned.
Caregiver prints additional armbands to act as proxy barcodes.	Audit Trail of armband printing in nursing units	<ul style="list-style-type: none"> • Add name of person printing and date and time to the armband itself. • Education
Caregiver does not scan medications.	Low medication scan rate	<ul style="list-style-type: none"> • Identify medications that do not have scannable barcodes upstream from the bedside medication delivery process • Provide scannable barcodes

Table 1. Workarounds with Methods of Discovery and Mitigation



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





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SOCIEDADE BENEFICENTE ISRAELITA BRASILEIRA
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Ask the bedside scanning and Patient ID experts

Nilson Gonçalves Malta
Pharmacist

Hospital Israelita Albert Einstein
São Paulo - Brasil



Global GS1 Healthcare Conference
23-25 October 2012 - Lisbon, Portugal





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)



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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



Doctors' role

Order Review



Pharmacists' role

Dispensing



Pharmacists' role



BCMA process

User Identification



Patient (SoC) identification



Wristband barcode

Drug identification



Drug barcode

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 administer 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



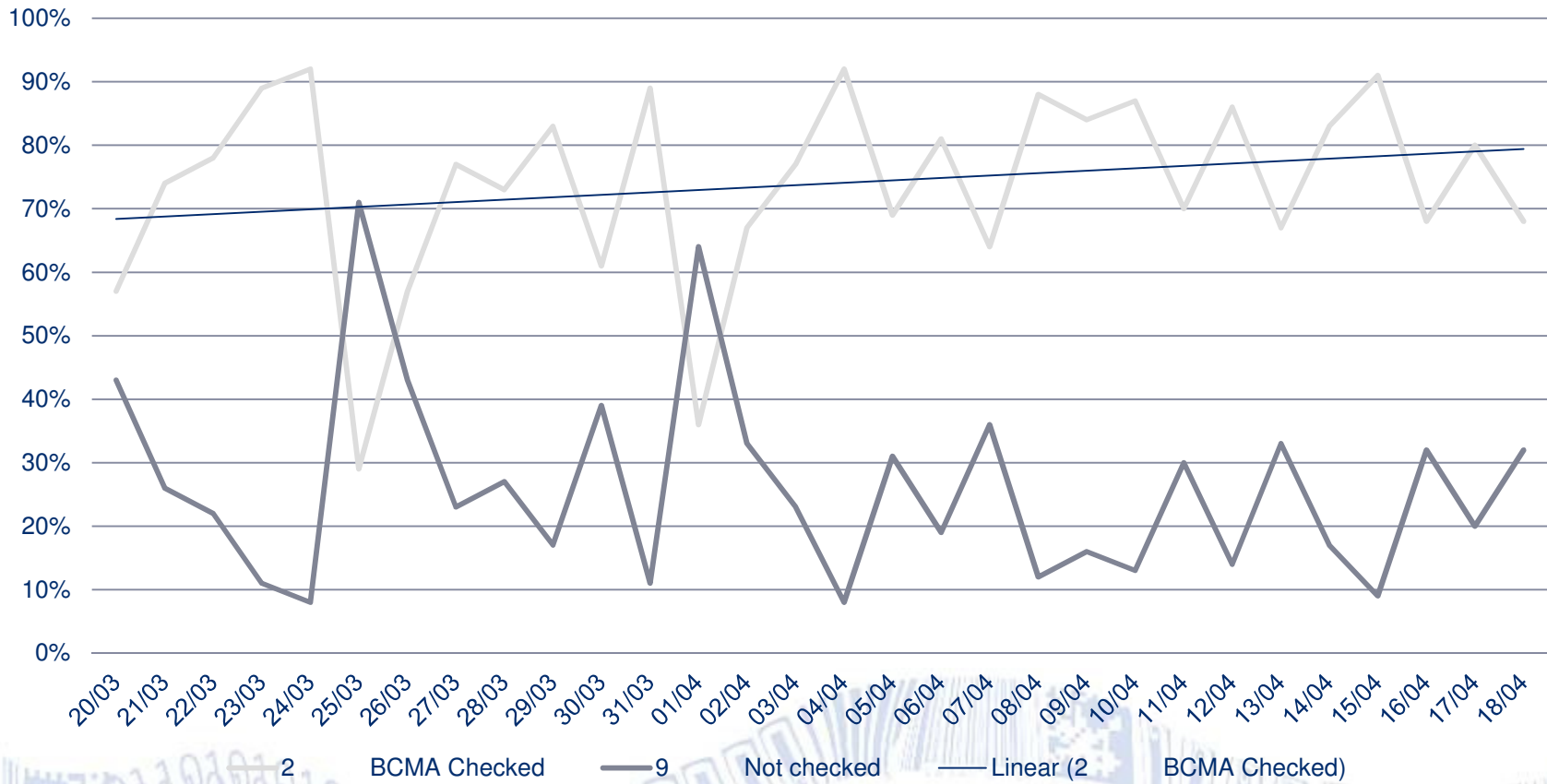
- SoC wristband
 - Fragile linear barcode print (folded, faded, wet)
- Ipad platform
 - Software developed for IE. IT did not support Safari compatibility
 - User were obliged to use the system through Citrix Cloud, accessing Windows
 - Bluetooth reader. Difficult to operate through Citrix
- Drug barcodes
 - 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





Thank you!



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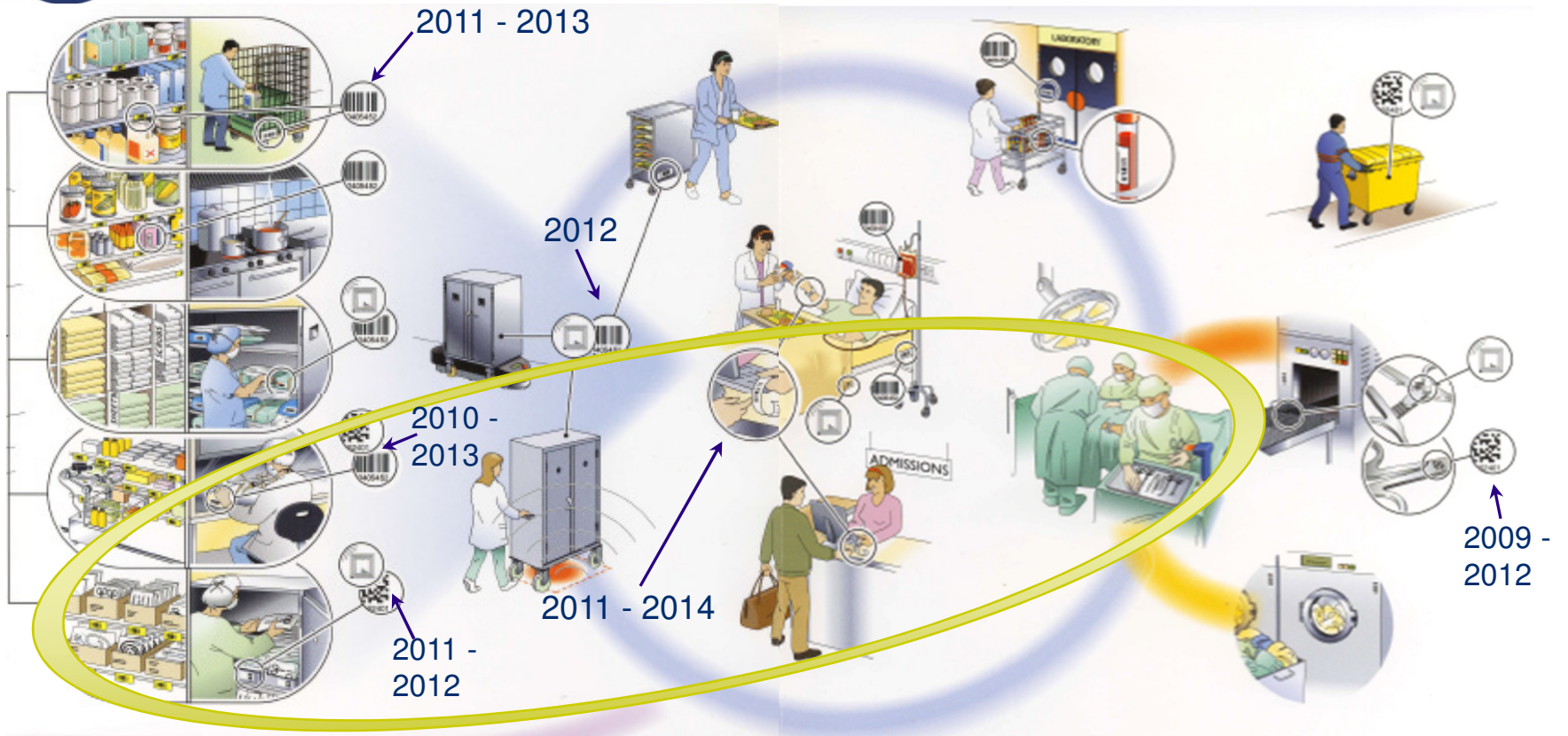
NILSON GONÇALVES MALTA
Pharmacist

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, ;..)