



The Global Language of Business

# The successful implementation of full medication traceability in a Brazilian hospital.

# GS1 Healthcare Webinar

Fatima Silvana Furtado Gerolin, Chief Nurse Executive  
Hospital Alemão Oswaldo Cruz, São Paulo, Brazil  
April 25<sup>th</sup>, 2019



# Welcome and thank you for attending!



- Welcome to our April 2019 webinar.  
Thank you to our guest speaker **Fatima Silvana Furtado Gerolin**, Chief Nurse Executive of Hospital Alemão Oswaldo Cruz, in São Paulo, Brazil
- Some housekeeping for today:
  - All attendees will be in listening-only mode
  - If you have questions during the presentation, please type them into the questions area and these will be monitored to be 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](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

# GS1 Healthcare Webinars



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

**A forum for sharing  
and discussion**

**Identification of  
projects and case  
studies**

**A source of expertise  
and advice**

- The practical realities of implementation of GS1 Standards in the care giving environment in regards to the impact on clinical care and patient interaction
- Supporting the adoption of GS1 Standards in healthcare providers and retail pharmacies
- For publication, presentation and sharing
- 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



# Specific GS1 Healthcare 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 Implementation 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>

**GS1 Healthcare also holds two global conferences per year. The next conference will be in Delhi, India from November 5 - 7, 2019. We expect significant Healthcare Provider participation on the agenda.**

# Presenting today



## **Fatima Silvana Furtado Gerolin**

Chief Nurse Executive  
Hospital Alemão Oswaldo  
Cruz  
São Paulo  
Brazil



## THE SUCCESSFUL IMPLEMENTATION OF FULL MEDICATION TRACEABILITY IN A BRAZILIAN HOSPITAL

## HISTORIC SERIE



IESS – Instituto de Estudos de Saúde Suplementar – Variação dos custos médico hospitalares ed. Out/2018

- ❑ Medical supplies and devices are the second largest hospital expense

## Distribution of total expenses

Type of expense	(%) 2014	(%) 2015	(%) 2016	(%) 2017
Expenditure with employees	35,2	36,3	36,2	37,4
Technical contracts	13,1	13	13	14
Medications	10,7	11	10,8	10,7
OPSM and special materials	9,5	8,2	8,5	7,8
Materials	7,5	6,5	6,2	6,6
<b>Insumos hospitalares (soma Mat/Med)</b>	<b>27,7</b>	<b>25,7</b>	<b>25,5</b>	<b>25,1</b>

Source: Observatório Associação Nacional Hospitais Privados  
ANAHP – 10ed. 2018

## 1.5 Million People Affected by Medication Errors

and 7,000 people die each year in the US and the cost to the country is US \$ 3.5 billion / year

*Preventing medication errors IOM 2006*

### ERROR IN THE MEDICATION PROCESS:

- Any preventable event that may cause or lead to improper use of the medication or harm to the patient while the medication is under the control of the health care professional, patient, or consumer.
- These events can be related to professional practice, health products, procedures, systems including prescription, verbal orders, composition, packaging and nomenclature, labeling, distribution, dispensing, administration, education and monitoring.

*US National Coordinating Council for Error Reporting and Prevention 2002*



### TO REDUCE 50% DRUG-RELATED ADVERSE EVENTS IN THE NEXT 05 YEARS

#### Motivation:

Each of us at some point in life will use medications to prevent or treat a disease;

If used without any kind of care, it can lead to serious damage.

**\$ 42 billion / year worldwide spending**

#### Priority actions:

High Risk Situations for Medication use at Hospitals

#### Areas:

Medication


Healthcare professionals

Systems and processes

Patients and population

#### Recommendation:

**Use of technology to minimize events**

- 
- Not-for-profit private hospital, founded by German, Austrian and Swiss community in 1897
  - High complexity general hospital predominantly surgical and focused on Oncology and digestive tract diseases
  - *Services not offered : Maternity, Pediatrics (patients younger than 14 years) and Neonatology*

## Paulista Unit



**96,000 m<sup>2</sup>**

Built area

- 24 x 7 Emergency
- Hospital and ICU beds
- Operating Rooms
- Center of Specialties
- Education, Sciences and Innovation

## Vergueiro Unit



**25,500 m<sup>2</sup>**

Built area

- Hospital and ICU beds
- Operating Rooms
- Centers of specialties

## Campo Belo Unit



**1,485 m<sup>2</sup>**

Built area

- Day Clinic
- Endoscopy Center
- Medical Checkup Center
- Outpatient Physical Therapy
- Centers of specialties

## Obesity and Diabetes Specialized Center



**578 m<sup>2</sup>**

Built area

- Multiprofessional and integrated management of obesity and diabetes





# VALUES

## Hospital Alemão Oswaldo Cruz

## INNOVATIVE TRADITION

Maintaining the culture and the historical landmarks of a centennial hospital that knows how to get reinvented to continuously advance.

LOVING CARE

In the human relation of touch and eye contact we can provide the best medical care.

TRUTH

Trust is our mean and credibility  
is our end.  
We are true to ourselves and to  
the world around us.

## PATIENT SAFETY

Attention and precision to deliver what is essential to patients: safety.

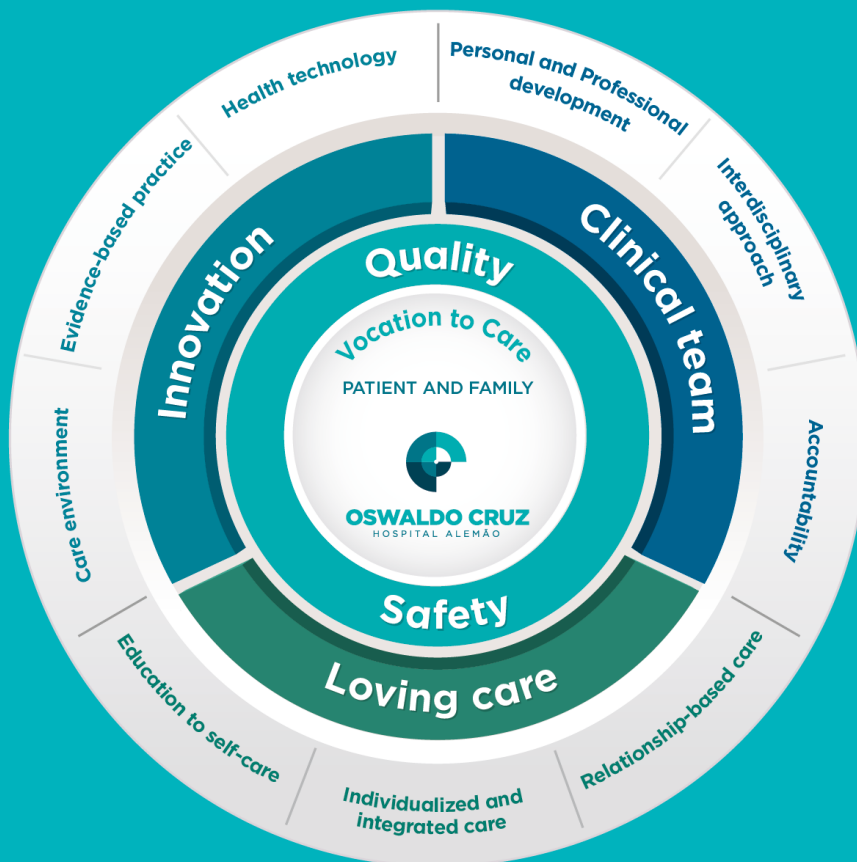
LOVING  
CARE

## COLLABORATIVE INTERACTION

The hospital is a living being. Each one has a role to play and has to have initiative, show empathy and work as a team.

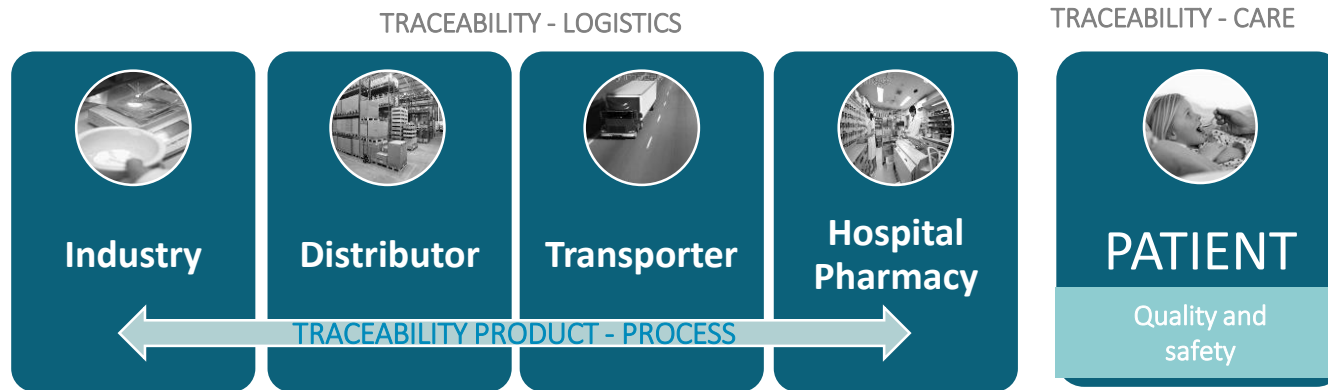





### The Hospital Alemão Oswaldo Cruz Care Model



**Individualized, complete and humanized care**, evidence-based and centered on **the patient and his family**, building **trust** and considering their life history and his needs.

Education to **self-care** is one of the basic assumptions of this model.

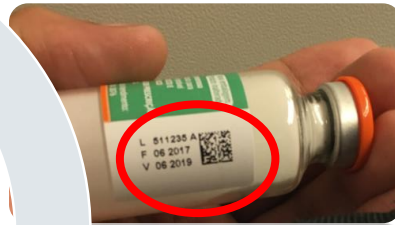


Project steps	Resources	Investment (US \$)
1) <b>Logistic traceability:</b> from the receiving to the dispensation	Site survey, wireless network, two-dimensional bar code readers, data collectors and printers. 	33.591
2) <b>Traceability of care:</b> preparation, administration and checking in the final of the process	Site survey, wireless network, two-dimensional barcode readers, cars to transport medication. 	103.359
3) <b>Decentralized dispensing:</b> electronic dispensaries	Automated dispensing cabinets (25) 	1.193.798

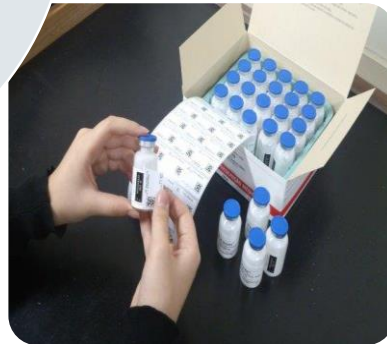


# Hospital Process

1) Receiving: from /  
to DataMatrix  
manufacturer



2) Suitability: internal  
labeling dispensing unit



Internal ID datamatrix  
code

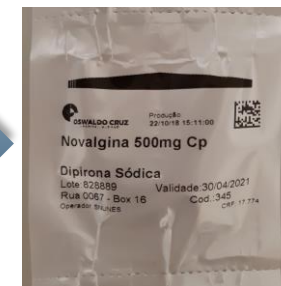


High-risk drugs:  
concentrated  
electrolytes



Potentially dangerous drugs:  
**chemotherapy**

3) Unitarization:  
fractioning tablets  
dispensing unit



Monthly average  
138.726 uni

Monthly average  
91.500 uni

# 1st step of the project

From the origin to the dispensation

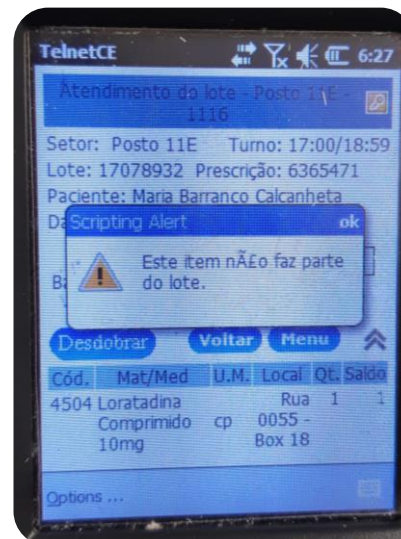
Traceability of the product / process / patient / double check / debit in account / withdrawal of stock.



Reading DataMatrix code:  
double electronic check



Medication delivery safely!





2nd stage  
of the project

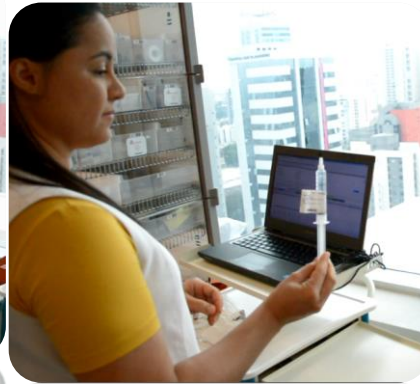
# Care Traceability

Traceability of the product / process / patient / double check / debit in account /  
withdrawal of stock.

Preparation and  
administration  
of medication  
with bedside  
check



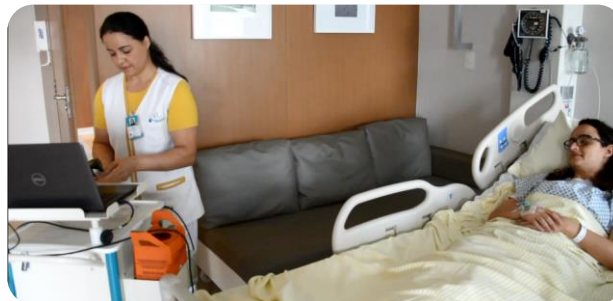
Reading DataMatrix  
preparation of medication



Prepared and identified  
medication



Reading the patient  
identification bracelet



Read the medication after  
preparation / double check  
with the medical prescription



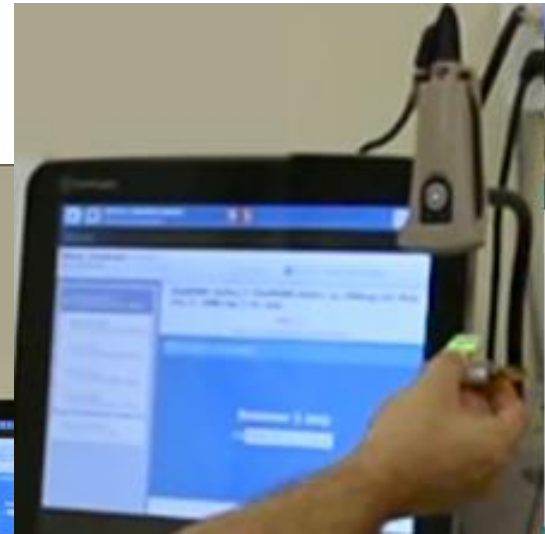
**Safety administration !!!**



### 3rd stage project

**Medication for immediate use in the hospitalization unit, integration with electronic prescription with restricted access, traceability of the product / process / patient / double check with electronic prescription, billing and withdrawal of the stock.**

**Decentralized  
Dispensing with  
Automated  
dispensing cabinets**



Reading DataMatrix on  
Product Dispensing from  
Dispensary

**Safe decentralized  
timely dispensing !!!**

# RESULTS - medication process automation



## PATIENT

Quality and safety

DIMENSION	ACTION	RESULT
OPERATIONAL	DIRECT CARE IN HOSPITAL UNITS	86%
	URGENT REQUESTS	↓ 81%
CARE	ADVERSE EVENTS RELATED TO DRUG DELIVERY	↓ 70% 2017 94% 2018
	INCIDENTS RELATED TO THE PREPARATION AND DRUG ADMINISTRATION	↓ 75%
FINANCIAL	DELAY IN THE REGISTRATION OF DRUG ADMINISTRATION	↓ 25 MINUTES
	DATA CAPTURE	↑ 9% INPUT DATA
	ADJUSTMENTS IN THE AUDIT PROCESS	↓ 36% 457.348,00 dollars
	RETURN AND CIRCULATION OF MATERIAL AND MEDICATION	↓ 56% 523.882,00 dollars
	HUMAN RESOURCES	↓ 08 EMPLOYEE 137.000,00 dollars (LESS THAN 3 PROFESSIONALS ON THE WORK TEAM)
SUSTAINABILITY	PAPER	↓ 1.485.500
	SAVED TREES	↓ 149
	SAVED WATER LITERS	↓ 15.260.000



**Automation of the medication process is imperative, manual processes represent a latent risk.**



**The goal is to build secure processes, that induce to the correct process and also avoid rework.**



**Adopt methodology for the incorporation of new technologies, in order to ensure that the benefits are cost-efficient.**



**Adopt unique identifier in the smallest unit - GS1 DataMatrix, enabling traceability along the chain links (medication process).**



**Safe medication process,  
reduces health costs and preserves lives !!!**

# Success Factors - involvement of professionals

- ✓ Explain the project to the HAOC executive council and talk about the advantages of investing in this technology
- ✓ Involve the nursing team from the beginning of the project
- ✓ It is very important that the informatics team is very close and ready to collaborate with the success of the implantation
- ✓ Celebrate with the multidisciplinary team the success of the implantation





- It is very important to sensitize the pharmaceutical industry for adopting code in the smallest unit;
- Keep professionals always alert to fulfill every stage of the process
- Monitor the technological evolution in medication traceability
- Electronic patient record should facilitate the search for safety in the medication process



- **Minimizes human interference in the medication process**
- **It allows traceability in several phases of the process helping to decrease the occurrence of adverse events to other patients**
- **Ensures registration of all phases of the medication process in the patient's chart**



**Thank you!**

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***Third Global Patient  
Safety Challenge***



# GS1 Healthcare Webinar

## Questions and contact details

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