Transforming the Sterile Goods Supply Chain and Introducing Traceability to Legacy Items
GS1 standards - underpinning Central Denmark Region since 2012

GS1 Healthcare Provider Advisory Council Webinar
Building modern hospitals on global traceability standard
How standards helped Aarhus University Hospital establish technology agnostic traceability

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A small step...

GS1 Traceability Standard

GS1 Ireland 2020
Setting the scene
Setting the scene
Gødstrup Hospital

Facts

First patient: February 2022

2,000 patients/day
4,000 Employees

Construction Costs: 500,000,000 $

3,750+ Sterile goods products
6,000+ Individual Serial Numbers
Gødstrup Hospital

Operating Rooms
OR

Central Sterile Services Department
CSSD
Gødstrup Hospital

Central Sterile Services Department (CSSD)

Operating Rooms (OR)

Delivery time KPI: ~40 minutes

Distance: ~350 meter
Structural

S.M.A.R.T
Structured
Information Based
Information Based

It takes a lot of paper and manual work to be digital.
Information Based
Sensor Based
Event Driven
Event driven
A System – Not an Application
Capacity / Demand = Fullfillment

- Storage concepts
  - Central
  - Mobile
  - Local

- An object is an object
  - If you can order it, it is a trade item
  - Assets are grouped by capabilities

- Ordering Requirements
  - Planned
  - Emergency
  - Alternatives
  - Prepared
  - Ever changing

- Quality
  - Flexible
  - Knowledge based
Inspiration

applying known terminologies
Capacity & Demand
The trained eye might have spotted a correlation with the Core Business Vocabulary by now.

Central Denmark Region regards EPCIS as the preferred interoperability method in the supply chain.
Events + Rules = Required Action
Transparency
Where is...
Where is...
Digital twins

- Booking
- Picking
- Transporting
- Preparing
- Fast Track!

Each of the above mentioned use cases only has a digital relation to the instruments involved. Some cases involve the container, the wrapping or the trolley as an observable physical objects. Other use cases eg. activating FastTracking the flow through the CSSD is done entirely on a data level.
Identification requires reusable ID’s

Marking requirements

- No harm to physical properties of instruments
- Scalable
- Global and Unique
- Easy to use
- Applicable to existing inventory
Marking technologies

- Engraving
- Electrostatic
- Attached RFID
- Printing
- Laser annealing
Yes we can!
Some things can’t be marked
Some things can’t be marked

A barcode ALWAYS identifies the object it is placed/printed on

An ID Brick placed in a set identifies itself and should never have data encoded specific to the set it’s placed in

Robustness is achieved through a strict regime governing the contents of each set
It’s hard work

- Patient centricity also requires adding value away from the patient
- CSSD does a lot more now
- It’s a new language
- Transparency and honesty go hand in hand
- 6,259 marked instruments in use
Moving in one day

Each of the two original hospital sites were vacated in a single work day each.
Moving in one day – with standards

- Data was prepared months in advance
- Staff planned an intermediate flow to consolidate assets from the two sites into one dataset
- One simple scan of an item and a ‘Ship to’ location number transferred the item from the capacity pool of the old site to the new site
- Scanning a ‘Physical’ location number on arrival finished the transfer initiating the flow at the new site
Is this just running up CSSD costs?

- No, and yes. But it is an investment in better care
- Replicability becomes a capability
- The learning curve flattens.
  - A scan returns product information
  - A visual inspection sometimes lead to identification failure
  - REF – Reference numbers ar ambiguous
- The scans and RFID tracking events paints a clear picture af the state of single instruments, sets and orders. A picture shared between surgery and CSSD
At the end of the day

- It’s all about the patient
- The flow is basically orchestrating logistic standards
- A scan is just pushing a button, a small step
- Handling thousands of scans and RFID events a day is a giant leap
- Inspecting your data is easily forgotten. Go there and you’ll learn and improve nothing. Don’t just do take time to reflect
- It’s all about the patient
Whats next

- Global Master Data
- Weeding out workarounds
- We are not at the desired level of transparency
- Continous evaluation of the instrument pool
- Single Cycle Items
- Better support for mobile storage