The Global Language of Business

Scanning at the point of care

– lessons learned from an implementation project

University Medical Center Schleswig-Holstein, Lübeck & Kiel

GS1 Healthcare Webinar

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Hajo Reissmann, Former Head of Medical Supplies Controlling

March 25, 2021

GS1 Competition Law Caution

- GS1 operates under the GS1 Competition Law Caution. Strict compliance with competition laws is and always has been the policy of GS1.
- The best way to avoid problems is to remember that the purpose of the group is to enhance the ability of all industry members to compete more efficiently.
- This means:
  - **There shall be no discussion of prices, allocation of customers, or products, boycotts, refusals to deal, or market share**
  - If any participant believes the group is drifting toward impermissible discussion, the topic shall be tabled until the opinion of counsel can be obtained.
- The full caution is available via the link below, if you would like to read it in its entirety: http://www.gs1.org/gs1-anti-trust-caution

Please identify yourself: Name & organisation

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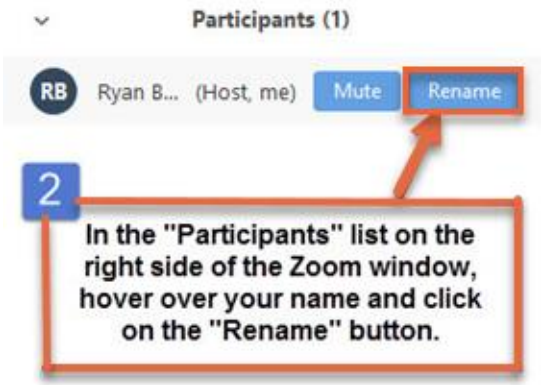

Welcome and thank you for attending!

- Welcome to our March 2021 GS1 healthcare webinar.

  Thank you to our guest speakers from the University Medical Center Schleswig-Holstein, Lübeck & Kiel in Germany
- 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 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

GS1 Healthcare Webinars

Create a forum for the global clinical provider environment to share experiences on using GS1 Standards in healthcare. The final goal: improve patient safety, cost efficiency and staff productivity through the implementation of GS1 standards.

A forum for sharing and discussion

- The practical realities of implementation of GS1 Standards in the care giving environment in regard to the impact on clinical care and patient interaction

Identification of projects and case studies

- Supporting the adoption of GS1 Standards in healthcare providers and retail pharmacies
- For publication, presentation and sharing

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

Specific GS1 Healthcare Activities

Webinars

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

Awards

- At each F2F global GS1 Healthcare Conference
- Provider Implementation Best Case Study Award
- Provider Recognition Award
- The prize: travel & accommodation to attend the next GS1 Healthcare conference
- http://www.gs1.org/healthcare/hpac

GS1 Healthcare holds global conferences each year. Due to the pandemic, we moved in 2020 to Virtual Events.
The next GS1 Healthcare Virtual Event is scheduled from April 20–22, 2021, with significant Healthcare Provider participation on the agenda.

Presenting today

- **Michaela Berlich**
  Industrial Engineer, over 20 years experience as purchasing manager in different industries
- Since 2011 Deputy Head of Purchasing and Division Manager “Medical Devices” at University Medical Center Schleswig-Holstein,
- Involved in multiple projects related to Master Data Management.

- **Dr. Hajo Reissmann**
  Physician, specialised Anaesthesia & Intensive Care, 20 years of clinical and scientific work
- Master of Business Administration in Healthcare
- Former Head of Medical Supplies Controlling
- Projects promoting AIDC at the point of care.

Joining for the Q&A

Jörg Neuhaus

- Study Computer Science, application subject medicine
- Division Manager “Administrative Procedures” / Company for IT Services

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It took more than one day to build The Tower of Babel

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Wissen schafft Gesundheit

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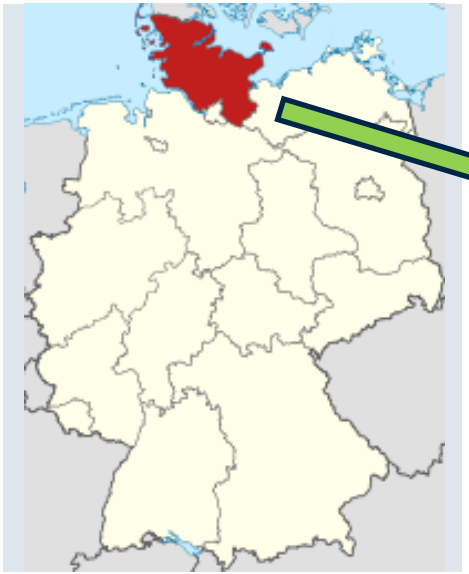
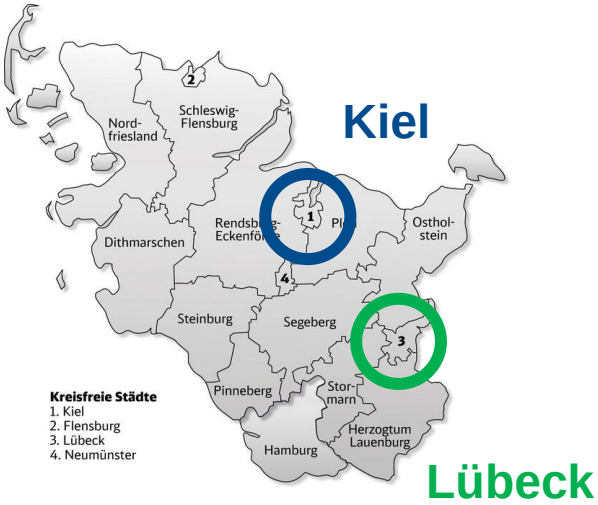
Schleswig-Holstein & its University Medical Center - key figures 2019 (pre CoViD)





Beds	
Kiel	~1.200
Lübeck	~1.200
Inpatients / year	
Kiel	~54.000
Lübeck	~57.000
Outpatients / year	
Kiel	~166.000
Lübeck	~155.000

Wissen schafft Gesundheit

Topics

- *Not merely ~~Scanning~~*
  → **AIDC**
  (Automatic Identification and Data Capture)
  1. Checking (by scanning) the identity of the involved items and persons
  2. Data capture and communication:
     Patient and drug or device have come together
     → is a major part of the functionality
     → poses a major part of the problems

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Topics

- Why does AIDC at the point of care attract so much attention?
- The **UKSH** experience
- **To Do**: Recommended actions, avoiding pitfalls and errors
- Reflection on related implementations

Why?

- Different organizations might have different motives
- The initial driver might be a focused need
  - Patient safety
  - Regulations
  - Costing (to meet economic pressures)

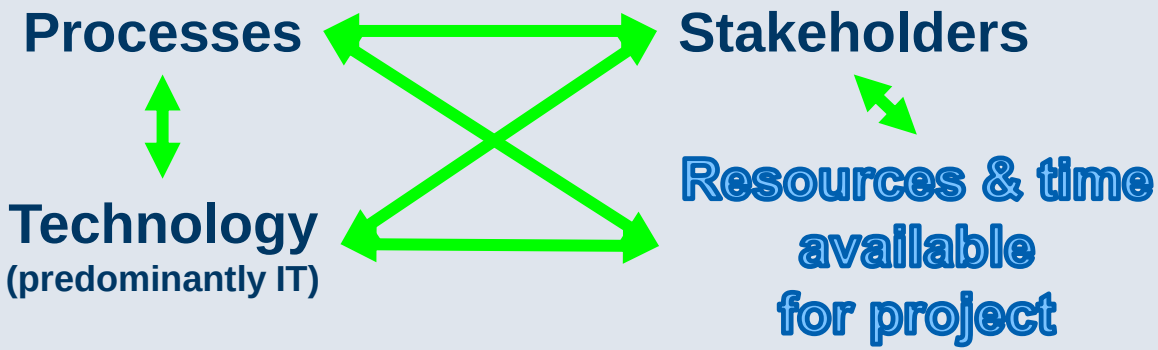
UKSH: Need for improvements

- Patient related costing was established years ago
  - Documentation by on-screen lists and “standards”
  - ➔ cumbersome for clinicians, limited data quality, considerable workload for retouching and supplementation
- Data quality needed to be improved
- Regulatory demands were steadily increasing

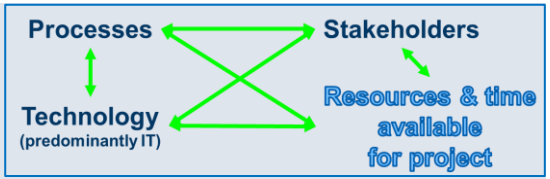
To Do: Decide on scope and functionality you want

- Basis: Documentation in patient record
- Propagation of data?
  - External stakeholders: Implant card, registries etc.
  - Patient administration: Billing, translation to procedure codes
  - Finances and logistics: Warehouse management and purchasing
- Where: OR? Intervention suites? ICUs? General wards?
- Which Materials: Medical devices? Medication? All / selection?

To Do: Respect the interdependence of factors



To Do: Consider Processes first



- Allot time and resources for recording, analysis and (re-)design of processes.
- Don’t just slap some IT support on unsuitable processes:
  - “IT cannot improve bad processes, it will merely make them more expensive”
- The scope of the process (re-)design determines the stakeholders and the need for resources

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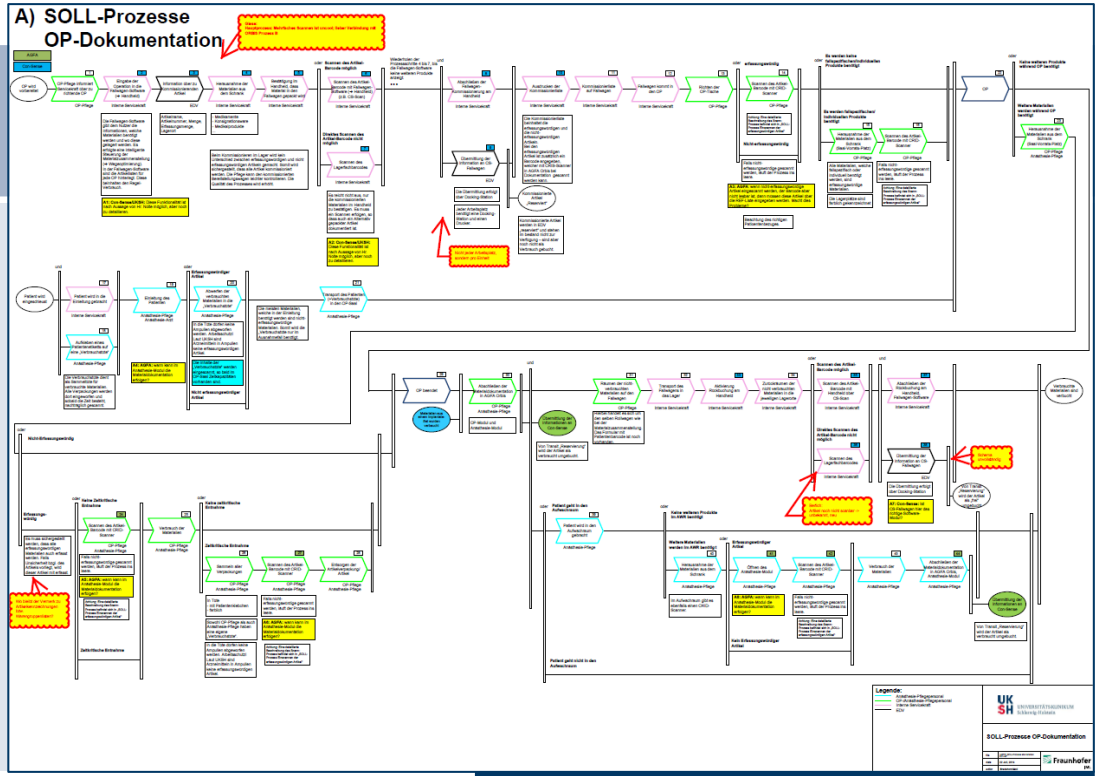
Processes around AIDC

- Record
- Analyse
- (Re-)Design

- **UKSH**: Collaborative effort guided by external consultants

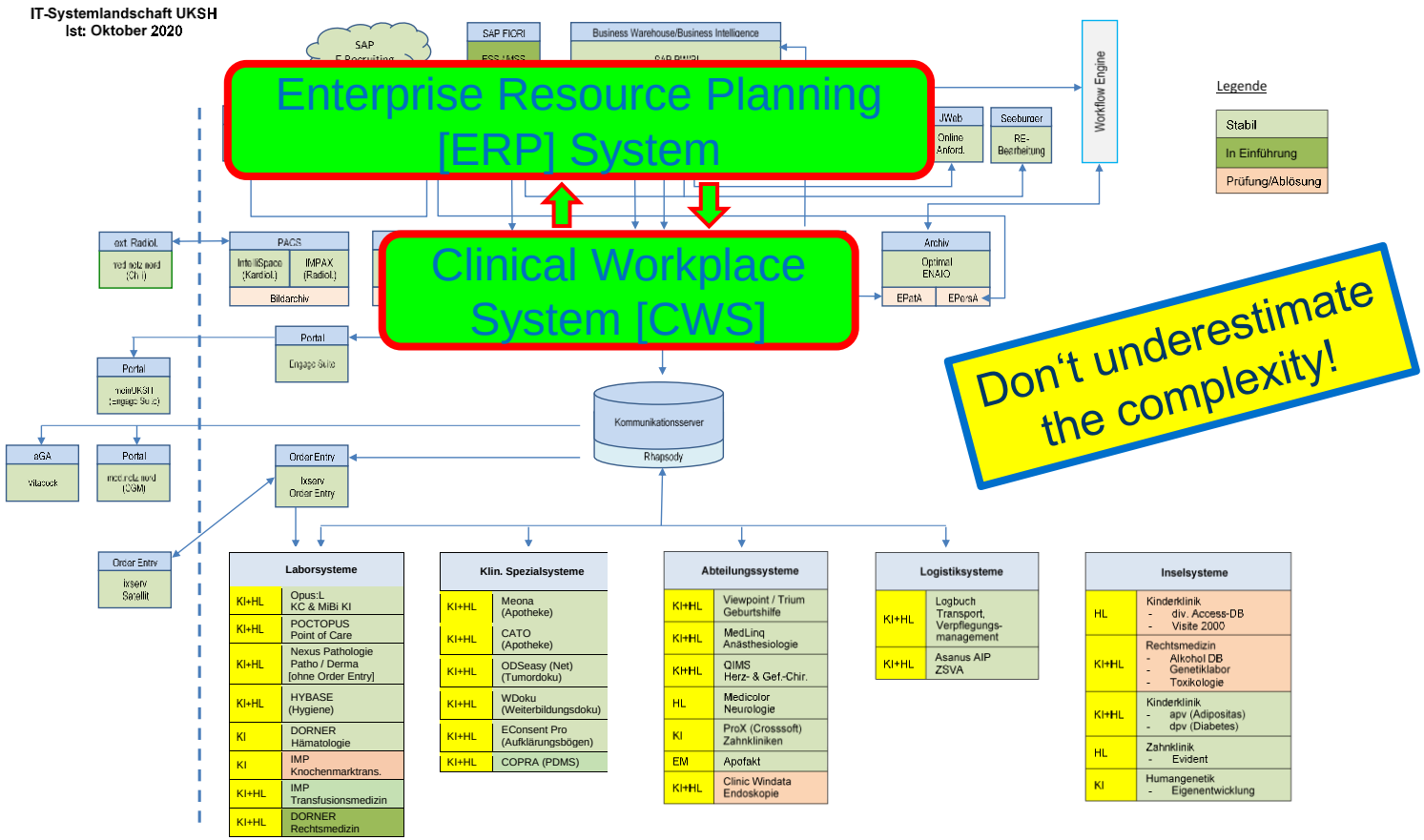


Wissen schafft Gesundheit

UKSH decisions (1)

- The Clinical Workplace System [CWS]
  is the clinicians‘ regular working environment
  → „natural“ environment for documentation
  - Important safety feature: User interface always presents patient context
  - Lucky circumstance: Experts and fans of AIDC and (GS1-)standards within the CWS vendor
- Unacceptable:
  Processes involving multiple capture actions of the same event.
  - The IT landscape is responsible for reliable communication and copies
  - Evil consequence: Recurrent intense discussions with software vendors

UKSH IT landscape *(per 2020, for illustration only)*



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UKSH decisions (2)

- Items differentiated by „relevance“ (= need to know)
  - Smaller Number of items to be scanned at the point of care
  - Less preparation and support tasks (master data management, …)
- Main focus: Medical devices
  - Drugs only if not captured in the pharmacy‘s medication system (→ on demand, e.g. coagulation factors during surgery)
- Prerequisite: Item meant for one patient / one procedure

Materials “relevant” for the UKSH (a)

- **Main criteria**:
  - Regulatory requirement (implant card, registries, …)
  - Important for billing or costing: High cost or link to a procedure
  - Desire of the clinical stakeholders
- **Result** (examples, not comprehensive):
  - All implants
  - All devices for minimally invasive surgery
  - All drapes (usually kits)
  - Sutures (desired by nursing staff!)

Materials “relevant” for the UKSH (b)

- Number of and expenditure for medical devices consumed (per year / rough analysis)

	Number of Items	Cost (Mio€)
„relevant“	400,000	49.2
„irrelevant“	78,800,000	20.6
All	79,200,000	69.8

- High turnover points of care: Maximum 200 „relevant“ devices / day

- Number of master data records (≈ stock keeping units) for active / current „relevant“ medical devices
  - All of UKSH: 9,000
  - Cost centres type „OR“ (start of project): 6,500

  Thus:
  Bearable for master data management

UKSH decisions (3)

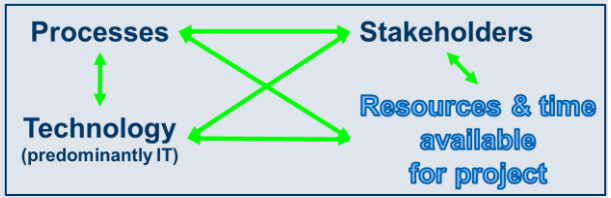
- No relabelling of insufficiently marked packages
- No signal for “relevance” (sticker, …)
- Defined procedures for cases of scan failure
  - Preliminary documentation of “qualified dummies”, subsequent workflow to quickly replace them
  - Challenge: Scan failure could be due to “irrelevance” (→ big drawback of “relevance” principle)
  - Test scan on receiving in the unit would be ideal → everybody can be sure that all relevant items on stock can be scanned

UKSH decisions (4)

- Warehouse Management in peripheral storage spaces: Second step (work in progress)
  - Goal: Easier stock management
  - Excellent foundation in **UKSH**: All cost centres / organisational units are represented in the material management system
  - Attention! Accounting aspects
- Deferred / 3rd step: Tracking of internal logistics

To Do: Involve all stakeholders

- Most important: Clinicians at the frontline.
  - Since they generate the documentation data they are primarily responsible for data quality.
  - They are the process owners and – in the thinking of some – also the owners of the data.
- IT:
  - Needs to have overview of data flow and technical feasibilities.
  - Crucial interface to software vendors.
- Purchasing and Logistics.
- Various others.



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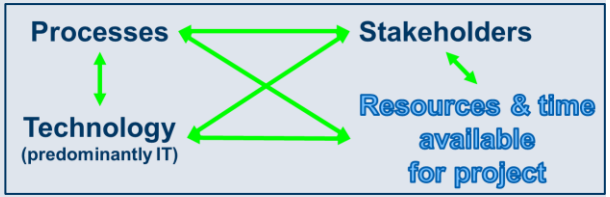
Communication is crucial – beyond the project phase

- Different frames of reference
- Different jargons
- **UKSH**: Explicit efforts up to glossaries and dictionaries
- Constant efforts needed to keep users on board

Resources: What a project needs

- Finances and manpower (dedicated, relieved of routine work)
  - Beginner‘s mistake @ **UKSH**:
    Fear of demanding too much led to a very tight business plan
- Powerful project organisation
  - Internal specialists
  - External consultants
- A variety of people for the team
  - Not only fast talking people with sharp minds
  - Also: People ready to do the groundwork
  - Also: People capable of organizing and coordinating



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UKSH experience:
Data carriers, identifiers and master data

Identifiers are crucial

- Initially massively lacking, bad manufacturer compliance
  - Our first experience: Having identifiers in **95%** of master data records meant only **50%** scanning success
    → Data were grossly false and incomplete
  - Hence: Onboarding of new units only after comprehensive verification scans and master data purging

New uniform for master data hunters and gatherers

Good master data quality is of strategic importance

- Massive improvement through UDI regulations
  (how SAD is it that we always need the authorities…)
- **UKSH**:
  - Dedicated master data management team within purchasing
    - understands clinicians' thinking and work flows
  - Defined processes
  - Hotline for the colleagues at the point of care
  - *Not quite yet:* Support by workflow software

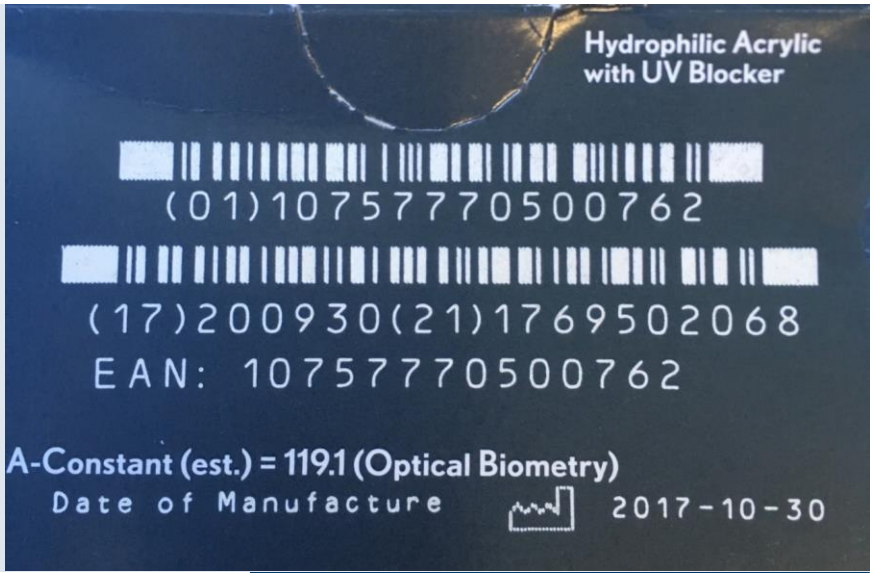
Scanner hardware and IT

- As of yet, optical data carriers are standard
  - Radio frequency labels (RFID) are technology of the future (?)
- The scanner needs to be camera type to read 2D data carriers
- **UKSH**: Connection tricky due to CWS running within terminal
- **UKSH**: Very good barcode interpretation integrated in CWS and ERP
- To Do: Don’t let yourself be fooled: Scanning is not Plug and Play !
- To Do: A „scanning steward“ is highly recommended,
  must have in-depth knowledge of scanning principles and implementation
  - Not necessarily IT specialists
  - **UKSH**: Useful scanner features “detected” after years.

AIDC: The label challenge

Barcode with GS1 content
– looks good superficially,
but FNC1-Symbol is missing

➔ may be illegible,
depending on scanning
hard- and software



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To Do: Be prepared to engage with manufacturers having trouble with identifiers and data carriers

- Could be the task of purchasing / master data management
- Basic knowledge of technical / logical / process aspects is indispensable (“scanning steward”)
- Dialogue with suppliers and GPO, quality criteria for tenders & contracts
  - Be prepared for escalation up to C-suite; patient safety always is a good argument

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The silver lining

- More and more players are willing to adopt a holistic view of the supply chain
- That includes repudiating the distinction of “clinical” from “administrative” data

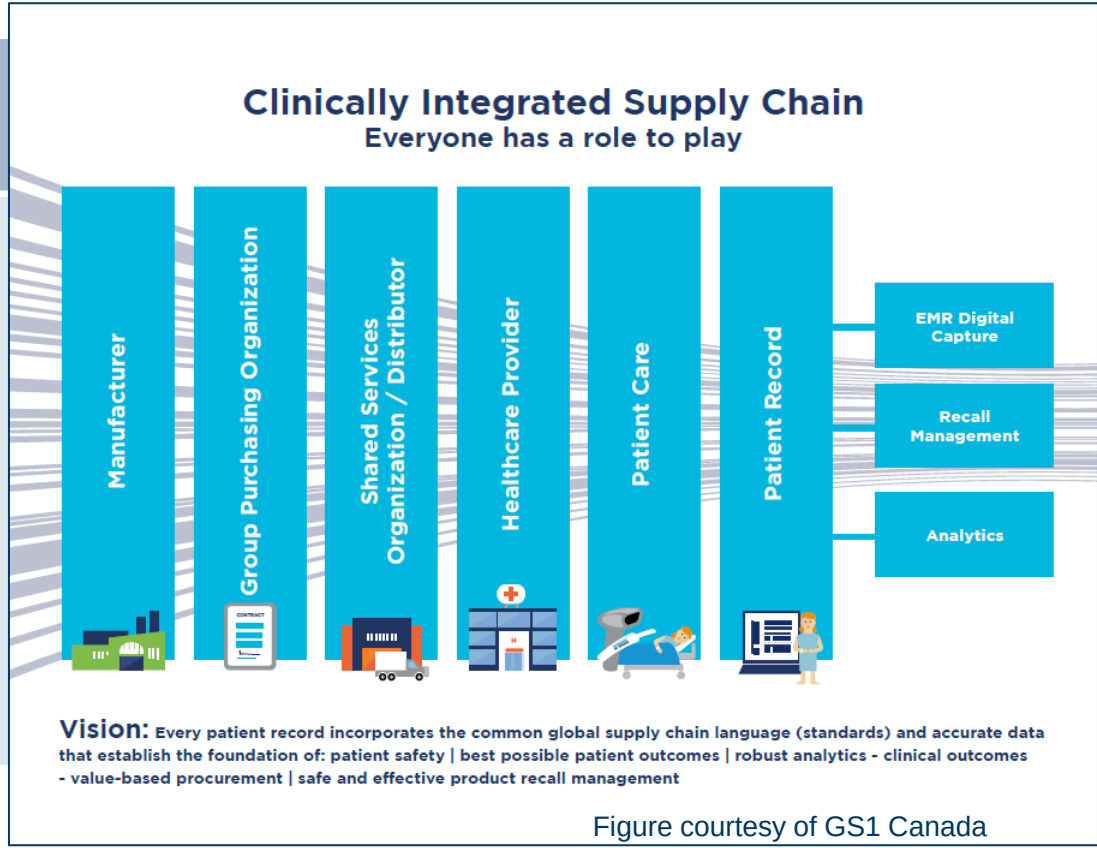

Figure courtesy of GS1 Canada

Wissen schafft Gesundheit

UKSH: Status (1)

- AIDC rolled out in majority of intervention areas
  - starting with ORs [because of IT functions], then cardiology & radiology
  - Few technical problems
  - Data transmission from CWS to BI was established before, now more and better data for controlling and cost allocation
  - Successful enhancement: Internal sterilization products are labelled according to GS1 standards and identified by their GTINs + attributes
- Challenge ICUs: Promised IT functionality not (yet) available

UKSH: Status (2)

- Data flow from CWS to ERP system (material management) still under construction
  - The interface required specialized IT solution providers – when bad luck hit them we felt the consequences
  - Detail: Consignment stock
    UKSH: We don‘t like classic vendor managed inventory [VMI], we want to be responsible for warehousing, to own the data, and to enable vendors to see their property in our systems
    - There would be a nice GS1 standard for that: EPCIS
    - Vendors would then be welcome to manage replenishment based on our data

UKSH: Status (3)

- 😊 The project was trail blazer,
  it set standards for subsequent projects like case cart
- 😕 We are missing Track and Trace for internal logistics
  as well as logistics specialists embedded the clinical units
  - the C-suite didn‘t see and promote these aspects of the big picture
- 😕 Inconsistent commitment from some sectoral organisations

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SCAN4SAFETY

Implementations elsewhere

- Scan4Safety (NHS England)
  - https://healthcare.gs1uk.org/scan4safety/gs1_uk_a_scan_of_the_benefits_report.pdf
  - 6 Demonstrator Sites: Projects and audits funded with 12Mio£
  - Different focuses at the different Demonstrator Sites

A scan of the benefits: the Scan4Safety evidence report

Improving patient safety and saving money using point-of-care scanning in the NHS

Scan4Safety

- “All of the safety improvements were free, because we’d already paid for the Scan4Safety team [through better organisation of stock]. All of this good work on safety was being done on the back of the bread and butter savings which you get straight off the top.”
  - Nick Thomas,
    deputy chief executive and director of planning and site services,
    University Hospitals Plymouth NHS Trust

Bottom line: Consider practical needs and strategy

- Start at one place, think about the other places early
  - Pay attention to the details at hand *(and that really means details)*
  - Develop a strategic view and don't lose sight of it
  - Early thoughts and plans are never perfect, but revising them is better than having none
  - Keep an open mind for potential future developments

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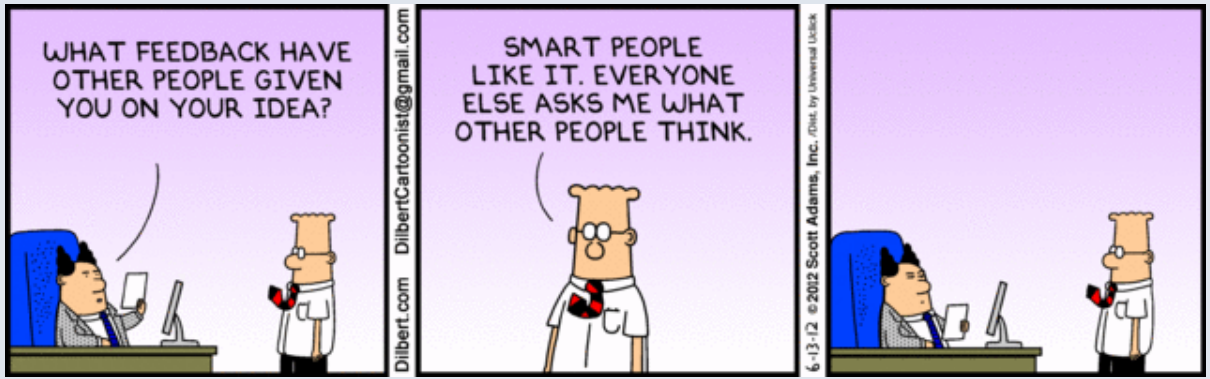
UKSH: Beyond AIDC at the point of care

- Our experience with AIDC using barcodes on purchased devices enabled us to leverage GS1 standards in other areas
  - Labelling sterilisation department products with GS1 DataMatrices containing UKSH GTINs
  - Patient wristbands with GSRN-R
    - Scanning gives access to patient related data in clinical workplace
  - Employee badge with GSRN-P
  - Locations and various parts of the organisation identified by GLNs
  - ***((If you want to know the meaning of all those acronyms join GS1!))***

Standards

- They help to deal with complexity
  → **a plea to the entire industry:**
  support standards
  apply them, make use of them, help develop them

Thank you for your attention – feedback?



Questions

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