Use of GS1 standards to improve patient safety in the home

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Agenda

• What did we do (issue)
• How did we hear about GS1
• What role did GS1 Play
• Where is GS1 used in our system(s)
• How did we undertake implementation
• Outcomes – What worked/didn’t, what we would do differently
• Advice for others
What is Haemophilia?

- Haemophilia is a hereditary bleeding disorder caused by a deficiency of a clotting factor (protein).
- Characterised by excessive bleeding even after minor injury.
- Incidence is between 1:5,000 and 1:10,000 Males.
- The treatment of haemophilia involves the replacement of the clotting factor (previously prepared from pooled blood) using a concentrated preparation “Clotting Factor Concentrate” (CFC).
- Patients self medicate in the home (Prophylaxis).
Issue
What triggered the initiative?

Catastrophic Event

- Infection of patients with Hepatitis C and HIV due to contaminated blood products. Infected products remained in the supply chain after recall leading to subsequent infection
- Over 100 patients died
- Lindsey Tribunal
Main Recommendations

• Improve communication between treatment centres
• The blood products supplied to persons with haemophilia should be of the highest standard and of the safest nature that are available
Medication delivery – Where we were
How did we hear about GS1

In 2003 we were approached by GS1 Ireland regarding how the GS1 standards could assist in the medication delivery process

- Unique identification (barcode) of patient - PMGSRN
- Unique identification (barcode) of medication - Serialised GTIN (+Lot + Expiry)
- Unique identification (barcode) of locations (Hospital/Home/Pharmacy/Transport) - GLN
Where does GS1 Fit?

- Manufacturer
- Cold Chain Supplier
- Medication
- GS1 Barcodes
- Patient
- Hospital
- Patient Home
Where is GS1 in our systems?

**Manufacturer**

GS1 standard barcode on medication (serialised GTIN)

**Medication**

All medication has GS1 barcode either labelled at source or overlabelled

**Cold Chain Supplier**

Rewrote their WMS to accept GS1 identifiers and produce GS1 barcode for medication where necessary

**Hospital**

EPR modified to produce GS1 identifiers (PMGSRN,GLN)
T&T system built to track medication through Hospital

**Patient Home**

Each patient home identified with a GS1 GLN

**Patient**

Mobile Phone (cellphone) App used to scan GS1 barcode and record medication compliance
What role did GS1 play?

• Reviewed our processes and indicated where GS1 standards could add value

• Educated medication suppliers and system solution providers about why and how to implement GS1 standards

• Provided on going advice throughout the implementation and beyond

• Worked with solution providers to embed GS1 identifier capture and generation in their systems
Once in place, how do we use GS1 standards?
Identify

Product Name (GTIN)
Expiry Date
Batch/lot Number
Serial Number
Capture
Smartphones with scanning App
Log-in

Secure Login by

• Username/Password
  or

• Scanning unique GS1 ID on Card
Scan Product

Barcode on Vial box is scanned to check

• Product detail (prescription)
• Expiry date
• Recall status
Process Complete

Process concludes, system synchronises data wirelessly to web application.
### Home Scan System

**Bleed Report**

**23/06/2010** - **23/06/2010**

**Surname:** Test  
**DOB:** 01/01/1940

**First Name:** Seven  
**WEIGHT:**

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**TOTAL:** 16500 12
Haemophilia Project Timeline

**Cold Chain distribution service** for medication commenced

**Datamatrix barcodes**
- Start of migration from linear to GS1 2D (Datamatrix) barcodes on medication

**Smartphone App**
- First 20 patients commence scanning with smartphone App

**GS1 Barcodes**
- Barcodes (linear) implementation on medication and embedded in Cold Chain delivery service

**Hospital tracking**
- Hospital track and trace of haemophilia medication using barcode scanning implemented

**Patient data integration**
- Patient home treatment data from App fully integrated with EPR

Haemophilia EPR implemented
Immediate outcomes post implementation of Smartphone App (launched June 2010)

- Real-time recall alert
- Timeliness of infusion
- Prescription compliance (2000iu instead of recommended 1750iu)
- Automatic compliance (no manual record keeping)
- Compliance > 90% (for those with phone App)
- Real-time Alerts for specific bleeds
- Patient empowerment
- Significant savings (over €70,000 within first 3 months with only 20 users)
Where we are
What worked, what didn’t?

• Still over labelling for some medications
• Still lack of understanding by solution suppliers of what “GS1 compliance” means
• The hospital was required to pay for 3rd party system modifications
• Even with the documented outcomes and learnings, the template has not been adopted by other disease groups such as Orphan Drugs and Vaccines

Why?

• Lack of strong clinical sponsorship/leadership
• Lack of funding
• Lack of awareness of GS1
• Cost of system modifications (solution providers)
• Priorities
Advice....

• Use GS1 as a resource
• When going to tender for any system, build GS1 standards into the requirement specifications
• Add your GS1 MO to your system tender team
• Look at GS1 reference books for examples of implementations
• Find a strong clinical advocate
• Use the FMD, UDI and US DSCSA legislation as a business case
• Quick wins are always good!
Acknowledgements

All staff in National Centre for Hereditary Coagulation Disorders, in particular…..

• **Dr. Barry White** (Clinical Director)

• **Evelyn Singleton** (National Co-ordinator for CFC)

• **Rachel Bird** (National Haemophilia system data manager)

• **Vincent Callan** (Director of Facilities Management)
Remember, GS1 standards are just a tool........
Thank you for listening!