Use of GS1 standards to improve patient safety in the home

Feargal Mc Groarty, Project Manager National Coagulation Centre, St James’s Hospital, Ireland
March 16th, 2017
Welcome and thank you for attending!

- Welcome to our March 2017 webinar. Thank you to our guest speaker – Mr. Feargal Mc Groarty, Project Manager, National Centre for Hereditary Coagulation Disorders, St James’s Hospital, Ireland

- Some housekeeping for today:
  - All attendees will be on mute
  - If you have questions during the presentation, please type them into the questions area and these will be monitored and 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
The GS1 Healthcare Provider Advisory Council (HPAC)

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

A forum for sharing and discussion

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

Identification of projects and case studies

- 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

A source of expertise and advice
HPAC 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 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](http://www.gs1.org/healthcare/hpac)

GS1 Healthcare also holds two global conferences per year. The next conference in Berlin from April 4 – 6, 2017. There will be significant Healthcare Provider participation on the agenda.
Use of GS1 standards to improve patient safety in the home

Feargal Mc Groarty, Project Manager,
National Centre for Hereditary Coagulation Disorders, St James’s Hospital, Ireland
Agenda

- Why we did it! (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).
- Very expensive medication.
- Approximately 200 patients with severe form.
- 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.
The solutions

GS1 Barcoding

National Electronic Patient Record

Home/Hospital track and trace

Validated Cold Chain Delivery Service
Medication delivery – Where we were
Heparin Contamination Deaths Counted

by admin | Apr 9, 2008 | Drugs, Editor's Picks, FDA, Poisoning, Prevention, Recalls |

The US Food and Drug Administration (FDA) has just released some important statistics that reveal the number of heparin-related deaths before and after the recent recall of heparin and heparin-related products manufactured and/or distributed by Baxter International Inc. and Scientific Protein Laboratories LLC (SPL), both headquartered in Wisconsin. SPL gets its active ingredient from its own plant in China and distributes its heparin products to Baxter.

Recent tests of the product suggest a contaminant similar to heparin, but lacking the anti-clotting action of the drug, as the cause of reported adverse effects. The raw ingredients for making heparin come through an unregulated supply chain in China. The contaminant is known to cause allergic reactions and hypotension (low blood pressure) in some patients, with adverse reactions severe enough to cause death in some cases.

For the period of January 1, 2007, through March 31, 2008, there were:
How did we hear about GS1

In 2003 we were approached by GS1 Ireland regarding how the application of GS1 standards used in retail 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)
- **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

(01) 20887511007364
(17) 150331
(10) A1B2C3D4E5
(21) 123456789
Capture
Solution for tracking and tracing products within the Hospital

Bar coded medication is delivered to the Hospital by TCP

Hospital (GLN)

Stock Fridge (GLN)

Prepare product (GTIN)

Patient receives CFC

Check Product V Patient and issue

Issue Fridges (GLN)
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Solution for tracking and tracing medication to the home
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
- Shorter dated stock
Scanning Process

Jonny Wilko

- Prophylaxis
- Immune Tolerance Therapy
- On-demand bleed

Enter bleed site details:

Bleed Site 1:

- (Select Bleed Site 1)
- (Select Left or Right)
- (Select Severity)
- (Cause of Bleed)
- (Select Pain)

Done

Jonny Wilko

Please proceed with infusion.

High Risk Bleed
Please contact your treatment centre

OK
Scanning Process

Jonny Wilko

Please proceed with infusion.

Thank you for using the home treatment system.

Another
Finish

Uploading On-demand
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<th>Treatment Date</th>
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<th>Bleed Site Details</th>
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</table>

Total: 16500 units, 12 vials
Share
Haemophilia Project Timeline

- **2003**: Cold Chain distribution service for medication commenced
- **2004**: Haemophilia EPR implemented
- **2006**: Datamatrix barcodes
  - Start of migration from linear to GS1 2D (Datamatrix) barcodes on medication
- **2007**: Smartphone App
  - First 20 patients commence scanning with smartphone App
- **2008**: GS1 Barcodes
  - Barcodes (linear) implementation on medication and embedded in Cold Chain delivery service
- **2010**: Hospital tracking
  - Hospital track and trace of haemophilia medication using barcode scanning implemented
- **2014**: Patient data integration
  - Patient home treatment data from App fully integrated with EPR

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*St. James's Hospital*

*Dublin, Ireland*
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 Providers of what “GS1 compliance” means
- The hospital was required to pay for 3rd party system modifications
- Constant vigilance is required to keep recording compliance up, even with those using the App

Why has this template not been adopted across the Irish Health Service?

- Lack of strong clinical sponsorship/leadership
- Lack of funding
- Lack of awareness of GS1 (HC professionals and Solution Providers)
- Cost of system modifications (solution providers)
- Priorities
How can you begin implementation?
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
- Try to incorporate GS1 into existing systems (Blood T&T)
- 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)
Thank you for listening!

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