The Global Language of Business

The surge for data and information

Panel Session
Wednesday, 18 October 2:00 - 3:30

GS1 Healthcare Conference, Chicago

Panelists

David Brooks, Director of Engineering, Strategic Project Management, Medtronic

Charlie Kim, President and CEO, 121nexus

Feargal McGroarty, National Haemophilia System Project Manager, St. James's Hospital

Tatjana Pathare, Artworks and Regulations Specialist within the Serialisation Project, F. Hoffmann La Roche

Stefan Artlich, Director, Senior Project Manager Track & Trace, Bayer

My Covidien/Medtronic Journey

- My Covidien/Medtronic journey – how I began thinking about this?
  - Get use of the investment – labels and data
  - Some success, some failure – which has led to new ideas…
  - Applications – Manufacturing, Supply Chain, Customer Care, and more

Physical Scan → Picture of Product Label → Analysis of Data → Corrective Action → Label Compliance

Outline for the Session

- Manufacturer and Supply Chain, Providers and Patient/Technology perspectives, experiences and goals
- Bringing this topic to the right forum to showcase the experts in the industry, and to get some feedback and ideas from the community
- We want your engagement! Q&A will be at the end of the session, so be prepared and start thinking of your questions!

Science For A Better Life

The Surge for Data and Information – A Manufacturer's View

Chicago 18 October 2017 / Dr. Stefan Artlich

Our Mission
Bayer: Science For A Better Life

Our Business Areas

Pharmaceuticals

- Prescription drugs

Consumer Health

- Over-the-counter medicines, dietary supplements, dermatology products, foot care and sunscreen

Crop Science

- Innovative crop protection and seeds
- Animal Health

The Surge for Data and Information

A Manufacturer's Challenges

GS1 is de-factor standard for coding in pharmaceutical supply chain

- Sales item: GS1 DataMatrix code with four data elements applied to secondary packaging (or primary packaging where no secondary packaging exists
- Trade item (e.g. shipper box): Again, GS1 DataMatrix code with four data elements
- Logistics objects (e.g. pallets): GS1-128 linear barcode

Challenges

- Shipper box can be both trade item and logistics object – How can we avoid application of two codes?
- Incomplete shipper box is traded as well – How can we enable product authentication without SSCC forwarding?
- Authorities requesting addt'l information (AI (240), AI (71x)) or usage of different data carriers (e.g. 2D Composite Component, QR code)
- Authorities requesting coding according to non-GS1 standards or proprietary schemes
- Extensive reporting requirements regarding non-logistics data (e.g. EU-FMD master data reqs.)
- Fine-granular Track&Trace provisions
- Expectations on implementation of single-dose coding

The Surge for Data and Information

A Manufacturer's Opportunities

Enable improvement in quality of care / patient safety

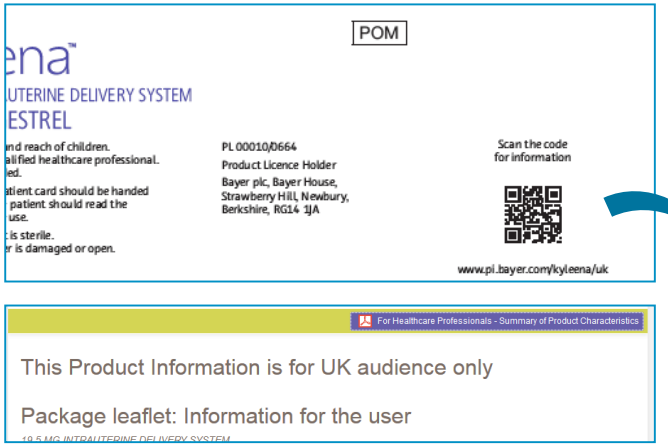
- Reduction of medication errors
- Adherence to prescription scheme
- Addt'l information routes to patients and Healthcare professionals

Ensure reliable market supply

- Prevent stock-out situations through inventory visibility and improved production planning

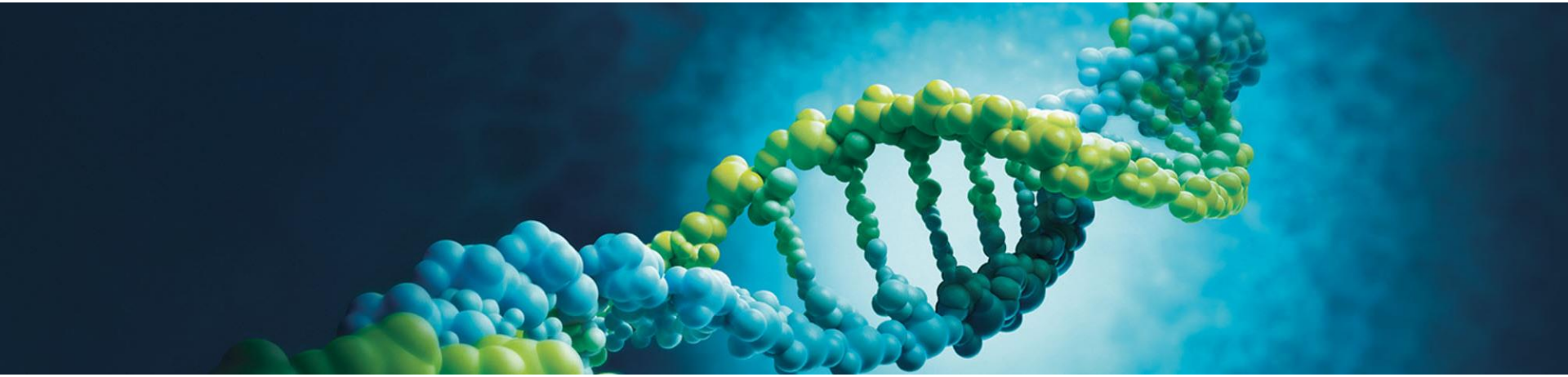
Redefine 'Batch' as set of items with identical quality properties

- Sub-batch recalls through tracking of individual items



Let's join forces and implement what is reachable today – The Better is the Enemy of the Good !

Science For A Better Life



Thank you!

The Global Language of Business

The Surge for Data and Information

GSI Healthcare Conference

Tatjana Pathare, F.Hoffmann-La-Roche Ltd

Chicago, October 18, 2017

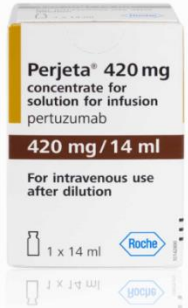
About Roche

A pioneer in Healthcare

- Founded in 1896 by Fritz Hoffmann-La Roche
- 1897 onwards Roche starts to expands worldwide
- 1968 Roche enters Diagnostics Market

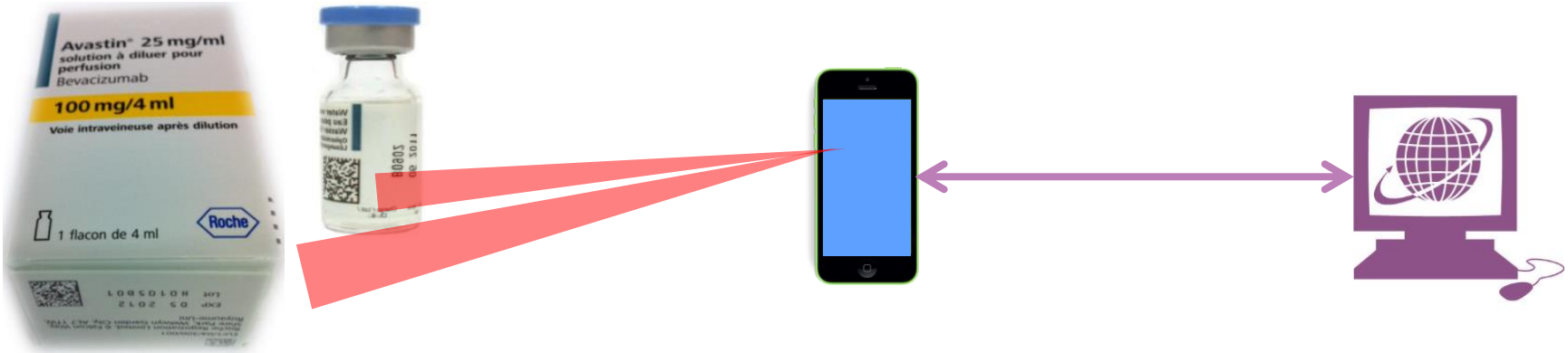
TODAY – ROCHE CREATES INNOVATIVE MEDICINES AND DIAGNOSTIC TEST THAT HELP MILLIONS OF PATIENTS GLOBALLY

- Largest Biotech Company
- Frontrunner in Personalised Healthcare
- Global leader in Cancer Treatments



MY DREAM

ACCESS TO INFORMATION THAT IS IMPORTANT FOR ME, WHEREVER I AM, USING **ONE** SINGLE STANDARD SOLUTION



MY DREAM

- Use of the **exisiting** 2D Data Matrix code  containing the GTIN, Expiry Date and Lot number (optional - Serial number)
- To enable access to patient information (including videos, illustrations etc)
- To support dynamic information
- at the same time getting real time information of
  - a recall of the medicinal product
  - Whether product is a counterfeit
  - Adverse event recording

In other words support dynamic information

OUR AIM IS TO FOLLOW **ONE** SINGLE STANDARD SOLUTION

In order to help move to one standard solution we are creating an ISO (International Standards) document

TITLE

'REQUIREMENTS FOR ACCESSING DIGITAL MEDICINAL PRODUCTS INFORMATION BY USING THE EXISTING DATA CARRIER'

- *New item proposal (**building on GS1 standards**) will be presented at the ISO 215 meeting in November 2017*
- *If approved - should be published in December 2019*

Why an ISO?

AIM:

- TO DO IT CORRECTLY together with the Regulators, Manufacturers and Developers

SCOPE:

- Certified and Secured App, thus ensuring that the end user gets a trustworthy information
- Create Apps which are software that meet requirements as a medical device
- Apps that are agile
- Leveraging (synergy) with IDMP (ISO 11615)

HOW CAN I CONTRIBUTE?

Join the mirror committee in your country to be actively involved in ISO TC 215

USA = ANSI

UK = BSI

Germany = DIN

etc

RESULT:

ONE SINGLE STANDARD SOLUTION

Another Contact Information if you wish to join ISO 215

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The surge for data and information

Feargal Mc Groarty St. James's Hospital,

Dublin, IRELAND

Agenda

- How does GS1 fit in the surge for data?
- How do we get the data?
- How is the data used in Healthcare?
- The Irish Haemophilia solution using small data for BIG results….
- Conclusion

ST. JAMES'S HOSPITAL

GS1 – Supply chain data…Right?

Item master data can help with

- **Patient level costing -** cost information that more accurately reflects a patient's treatment and is produced consistently across all licensed healthcare providers. Understanding the cost of patient care will help providers to improve the efficiency of their services.

ST. JAMES'S HOSPITAL

Cost is an important factor in evaluating how effectively and efficiently care to patients is delivered. Having accurate, consistent, patient-level cost information helps to:

- make the best possible use of resources
- evaluate clinical practice
- compare different ways of working

How do we get there?

- Item Master (Source of Truth)
- Data transfer (standards)
- Data capture (can systems accept the data?)
- Data reporting (combining clinical and supply chain)
- Precision Medicine/Population Health

How can data help in clinical decision making?

Qualitative Analysis

- Multiple realities that are continually changing with individual interpretation
- Personal Judgement
- Inductive reasoning used to make decisions

Quantitative Analysis

- Systematic review of treatments and outcomes
- Evidence based treatment plans
- Reduced errors

The Clinical setting

How can big data be used?

- Clinical Decision Support Systems
- Electronic Health Records
- Personal Health Records
- Remote Consultations
- Personalized Medicine
- Chronic disease management
- Preventative applications


I'm worried that Healthcare has become too impersonal Doc?
Nonsense! Just relax...and lie back on the Barcode Scanner...

National Haemophilia Lighthouse Project

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

ST. JAMES'S HOSPITAL
DUBLIN . IRELAND

Ospidéal Mhuire na Leanaí, Cromghlinn
Our Lady's Children's Hospital, Crumlin

CUH
Ospidéal Ollscoile Chorcaí
Cork University Hospital

St. John's Hospital

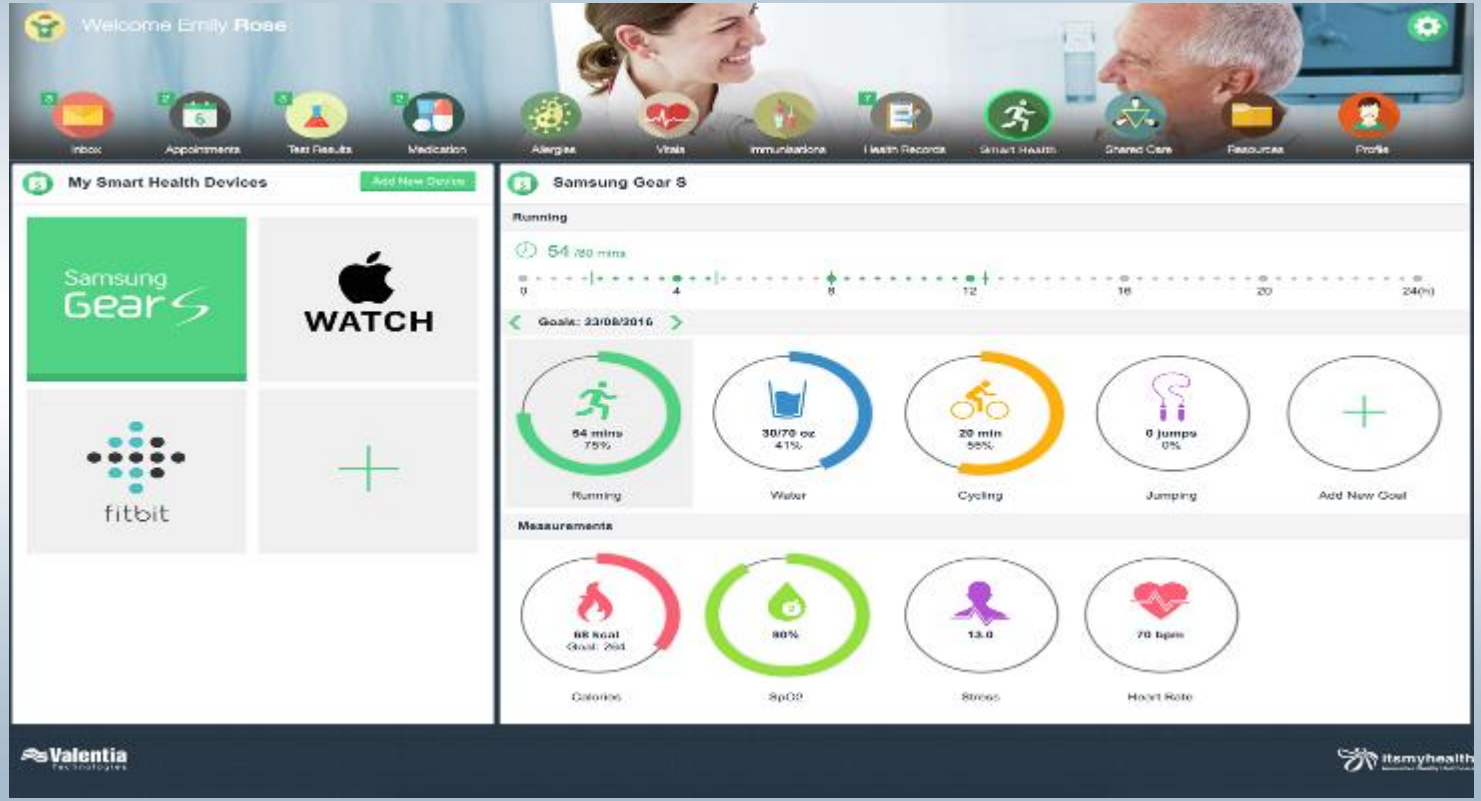
Galway University Hospitals

Valentia Technologies

Patient Portal

- Information ownership rather than access
- Dynamic and granular consent under direct control of the patient
- Ability to aggregate and consolidate health and social care related data from different sources in a single longitudinal record
- Collaboration and self-management tools for professionals, carers and patients
- PIL on the use of medications etc

Haemophilia Patient Portal



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A little knowledge can be a dangerous thing……

Beyond the Hospital walls…..

One example where data can improve patient safety and drive down the cost of Healthcare delivery

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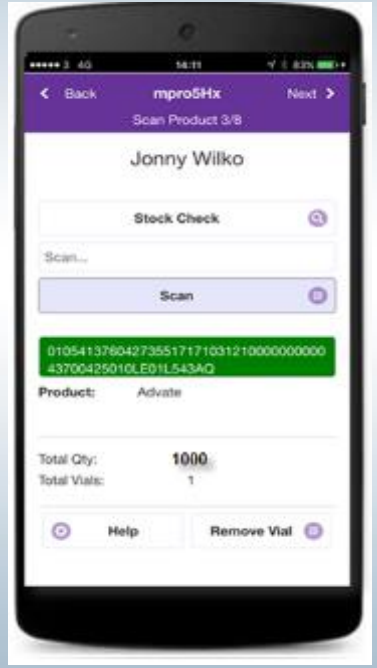
Smartphones with scanning App

Barcode on Vial box is scanned to check

- Product detail (prescription)
- Expiry date
- Recall status
- **Shorter dated stock**



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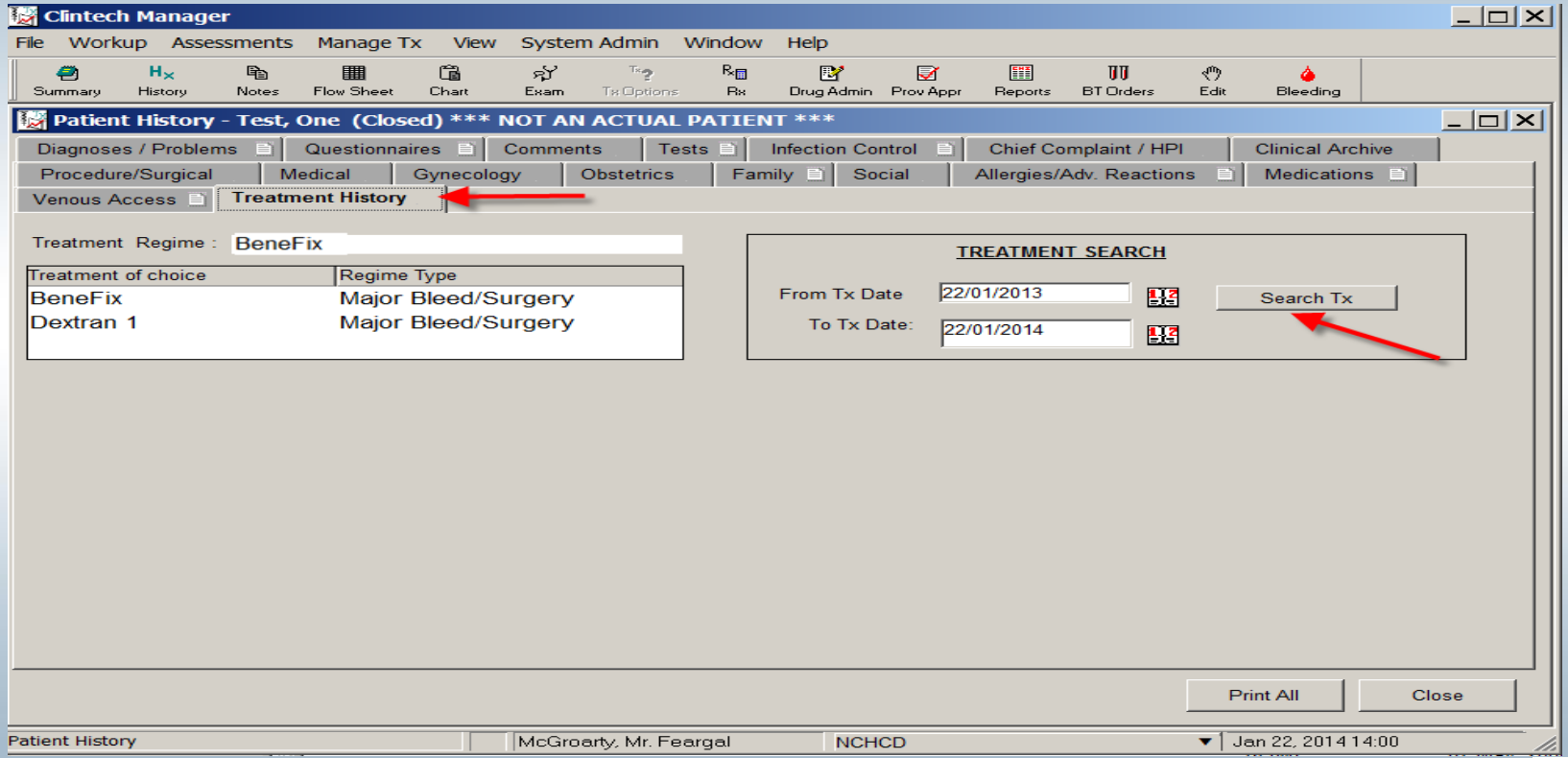
Integrated care



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Indented and unintended outcomes using real-time data from the smartphone App

(launched June 2010)

- **Real-time** recall alert
- **Real-time** Stock level check
- Timeliness of infusion
- Prescription compliance (2000iu instead of recommended 1750iu)
- Automatic compliance (no manual record keeping)
- Compliance was initially > 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)

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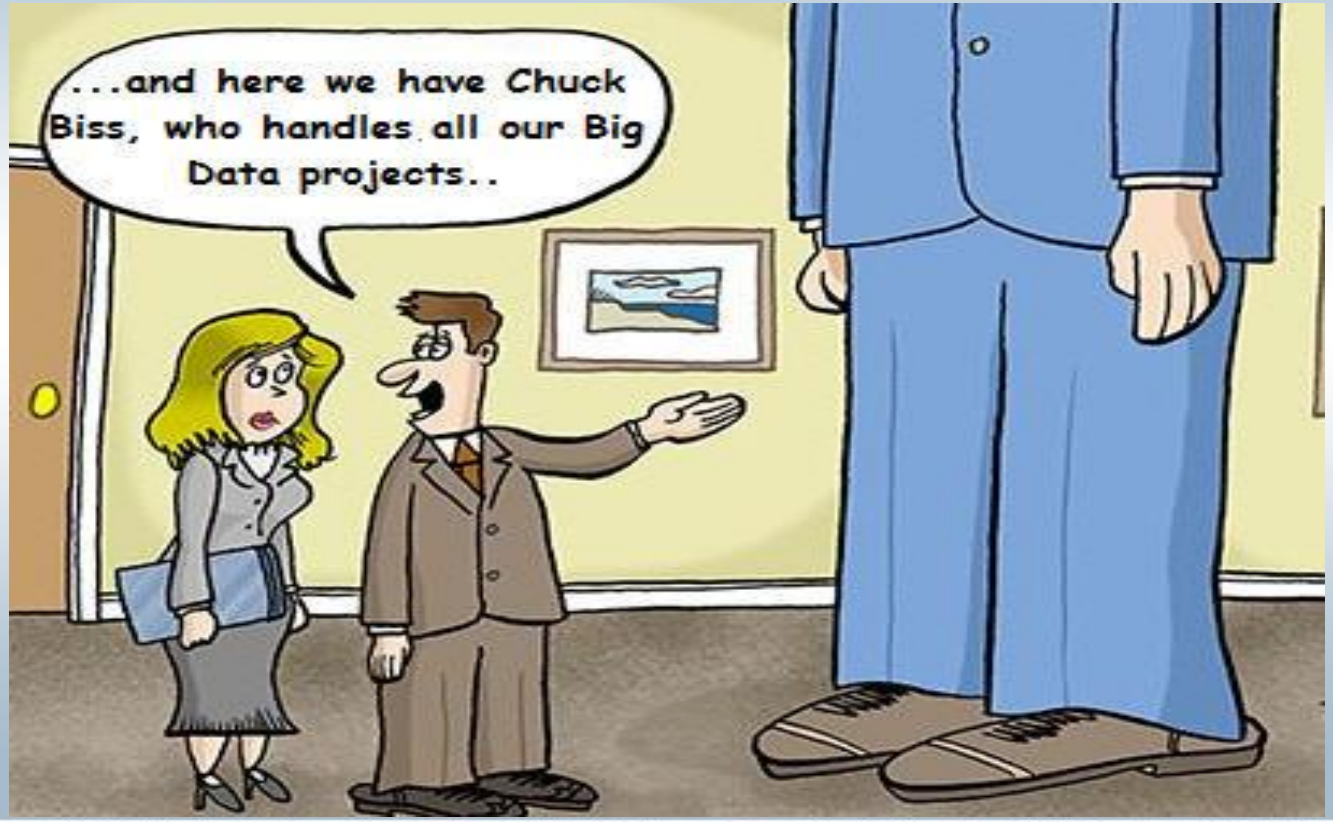
In Summary

- Efficient use of data can help drive down the cost of healthcare delivery
- But beyond that it allows us to analyse population health data which in turn
- Helps informed clinical decisions
- Improved outcomes

GS1 is well placed…….



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The Surge for Data and Information Technology & Patient View

Charlie Kim

GS1 Global Healthcare Conference, Chicago

October 18, 2017

Background

121nexus: Cloud Technology Resting on Backbone of GS1 and UDI

Transform the way products and people interact. Guided by basic human values, our technology will drive collaboration, health, safety, and growth.

Charlie Kim: Father, Patient Advocate, Tech CEO

- Challenge: safety & use (med device and pharma)
  - Three (3) Class I recalls
- Challenge: communication & collaboration (provider and homecare)
  - Four (4) hospital systems in two (2) states
  - Twenty (20) healthcare professionals

Healthcare Information Revolution

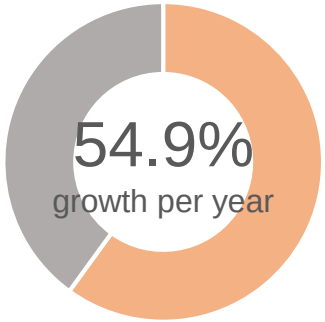
Consumer / Patient-centric Demand will Drive Change

- Patients demanding cost effective healthcare options
- Mobile Health (mHealth) benefits patients and providers

2013

mHealth value

$2.4 Billion



2022

mHealth forecasted value

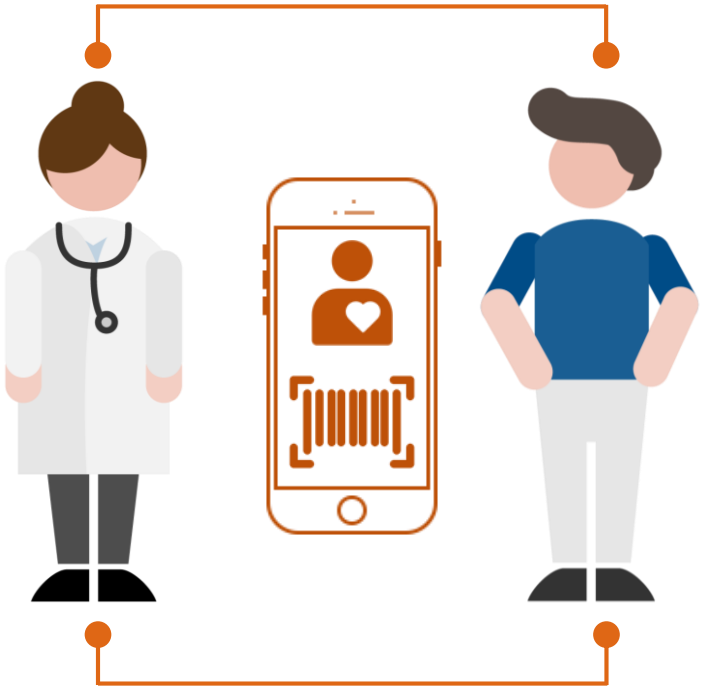
$100.4 Billion

$370.0 Billion

mHealth forecasted healthcare savings effect

Deloitte – 2014, Markets & Markets – 2016

Product First - Deliver Confidence & Clarity



Patient mHealth use by importance

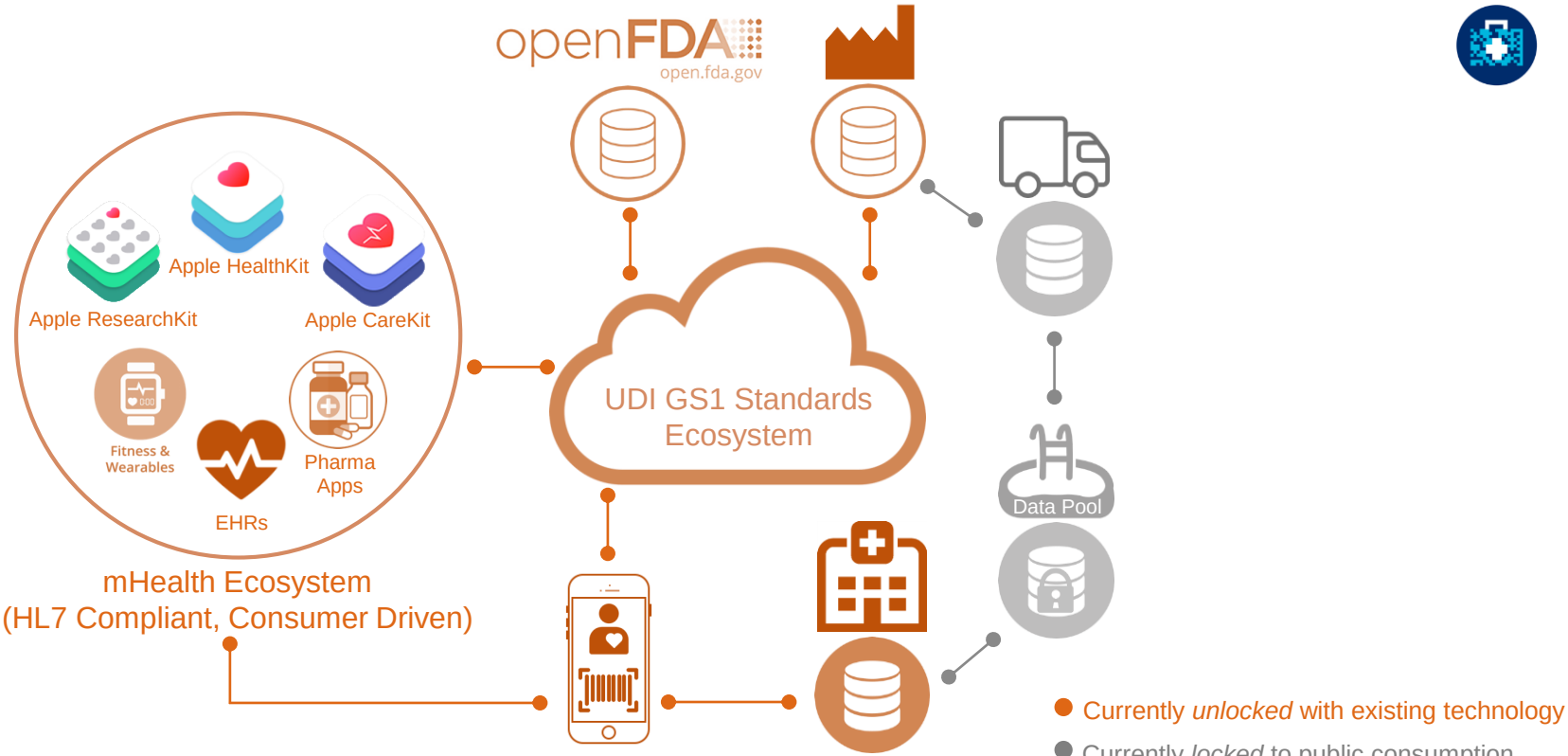
1. Product, medical information (23%)
2. HCP communication (17%)
3. HCP collaboration (16%)

Provider mHealth use by importance

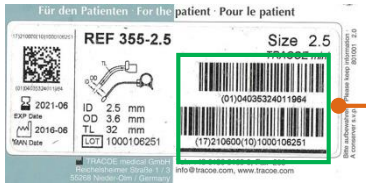
1. Promote patient independence
2. Minimize avoidable service use
3. Improve outcomes

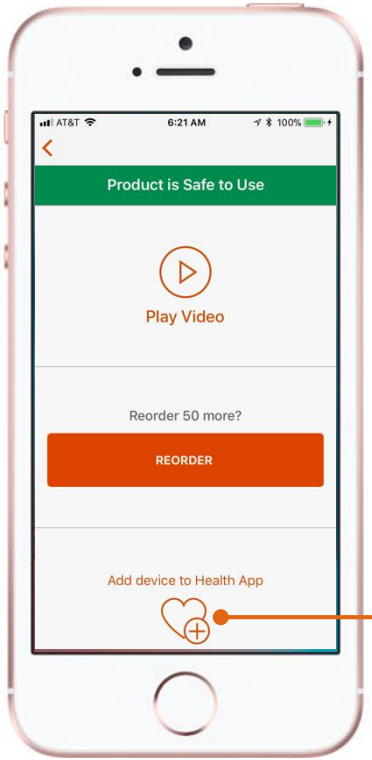
Deloitte 2014

Technology and Pathways Exist Today

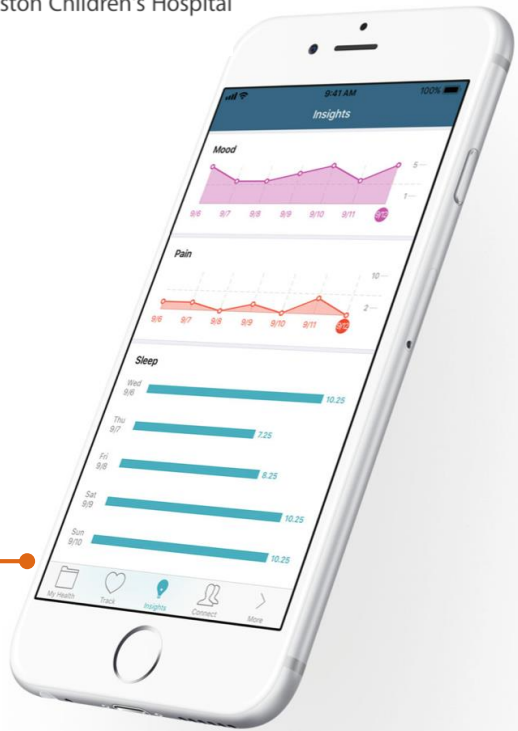


Provider Patient Mobile Flow Example





Caremap app
Duke and Boston Children's Hospital



Q&A and Panel Discussion

- Thought leadership – who else is thinking about this? And who is ready to next steps? Who already has?

- How can we use technology from our daily lives in what we do in Healthcare?

- Call to action – pilot opportunities?
  - Provider/Patient – use in clinical setting for application and usage
  - Manufacturer/Supply Chain – use of manufacturer data for consumption in supply chain and/or by the provider/patient