GS1 Healthcare around the world

Update

GS1 Member Organisations
Local user groups can best work with key partners on local level

- Reach out to and engage key partners on local level for adoption and implementation of global standards
- Contribute and influence global standards
- Work with local regulatory bodies and associations

The power to engage local stakeholders
Local Healthcare User Groups Today

GS1 Healthcare

- France
- Canada
- Austria
- Russia
- Spain
- US
- Australia
- Switzerland
- UK
- Germany
- Malta
- Slovakia
- New Zealand
- Serbia & Montenegro
- Macedonia

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GS1 Healthcare Australasia (Australia and New Zealand)

Gary Hartley, General Manager, GS1 New Zealand (In Person)
Tania Snioch, Senior Advisor, GS1 Australia (In Spirit)
Pharmaceuticals • Australia – GTIN Allocation for use of NPC with Health Jurisdictions • Traceability - none

Medical devices • Australia – GTIN Allocation for use of NPC with Health Jurisdictions • Traceability - none

Pharmaceuticals • New Zealand – Proprietary coding system (Pharmac) • Traceability - none

Medical devices • New Zealand - none • Traceability - none
<table>
<thead>
<tr>
<th>Established</th>
<th>October 2006</th>
</tr>
</thead>
</table>
| **Priorities**    | • Provide Australian and New Zealand input into the work of the global HUG  
                     • Address and document Australian and New Zealand specific Healthcare issues and bring these to the attention of GS1 Healthcare for incorporation into this group's work plan  
                     • Drive implementation of the GS1 standards in the Australian and New Zealand Healthcare sectors. |
| **Work Teams**    | • Leadership  
                     • Complete group |
| **Strategic Partnerships and Collaboration** | • Medical Industry Association of Australia  
                                                      • Medical Industry Association of NZ  
                                                      • Standards Australia |
Participants (as at 13th June 2008)

Manufacturers
3M Australia Pty Ltd
Abbott Australasia Pty Ltd
Aventis Pharma
B. Braun Australia Pty Ltd
Baxter Healthcare
BD (Becton Dickinson)
Biomet Australia
Boehringer Ingelheim Pty Limited
Bosco Medical Australia
CSL Bioplasma
Dade Behring ANZ
Douglas Pharmaceuticals (NZ)
Draeger Medical
GSK Australasia
Kimberly-Clark
Merck Sharp & Dohme
Novartis
Pfizer Pty Ltd
Rem Systems
Resmed
Smiths Medical
St. Jude Medical Australia Pty Ltd
Sydney IVF
Terumo Corporation
Welch Allyn Australia Pty Limited
Wyeth Australia Pty Ltd

Distributors/Wholesalers
Aaxis Pacific
Australian Pharmaceutical Industries (API)
Central Hospital Supplies
CH2 [HUG Australasia Chair]

Hospital/Pharmacy
National Pharmacies
The Alfred Hospital
Southern Health

Associations
GS1 Australia
GS1 New Zealand
Standards Australia
Researched Medicines Industry
Medical Industry Association of Australia
Medical Industry Association of NZ
Australia Post

Governmental Bodies
Department of Health (South Australia)
Health Corporate Network - WA Health
Health Technology - NSW Health
National Blood Authority
NEHTA
Health Support - NSW Health
Queensland Health
Taranaki District Health Board
Accomplishments

- 8 physical meetings to date
- Membership continues to grow
- Survey of membership – aspirations and current status
- Identification of education needs
- Education program in place – to be repeated 3x pa
  - 6 sessions, 1 hour webinar
    - What’s happening in Healthcare?
    - GS1 numbering for Healthcare
    - GS1 bar codes for Healthcare
    - National Product Catalogue Overview
    - eMessaging for Healthcare
    - EPC/RFID for Healthcare

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Next steps

- Repeat education series – October/November
- Next meetings –
  - **July 21st 2008** (Kimberly-Clark) (AIDC focus) incl:
    - Brigham and Woman’s - Tom Cooley
    - Prof Alan Merry – University of Auckland
- **November 26th 2008** (Pfizer)
- Commence case study and implementation drive
Pharmaceuticals

• Pharmaceuticals which are sold in pharmacies (not Rx only) have to have a PZN.
• PZN is embedded in EAN13: 90 + 8888 + PZN + checkdigit

Medical devices

• Instruments (used in surgery) have to be traced (MPG §91-93)
<table>
<thead>
<tr>
<th>Established</th>
<th>June, 2007</th>
</tr>
</thead>
</table>
| **Priorities** | • Motivation of as many participants as possible  
• Changing marking pharmaceuticals from PZN embedded in EAN-13 to GTIN + Lot + Exp. Date (GS1 DataMatrix?)  
• Marking medical devices (different international requirements) |
| **Work Teams** | • Appl. Stand. + carrier (established March 08) – Main focus on PZN in EAN13 |
| **Strategic Partnerships and Collaboration** | • Austrian Federal Ministry of Health  
• Pharmig (Association of pharmaceutical manufacturers)  
• ARGE Pharmazeutika (Association of pharmaceutical wholesalers) |
Participants

• Manufacturers
  • Baxter
  • Ebewe Pharma
  • MedEL
  • Boehringer Ingelheim
  • GSK
  • Croma Pharma

• Hospital/Pharmacy
  • Vinzenz Gruppe (7 hospitals)
  • AUVA (12 hospitals)
  • Wiener KAV (24 hospitals)

• Associations
  • Pharmig
  • Austromed
  • ARGE Pharmazeutika
  • Austrian Chamber of Pharmacists
  • Austrian Chamber of Medical Doctors
  • University of applied sciences, Krems

• Distributors/wholesalers
  • Herba Chemosan
  • Richter Pharma

• Governmental bodies
  • Austrian Federal Ministry of Health, Women and Youth
  • AGES

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Accomplishments

• Set up awareness of importance of global standards in healthcare

• Setting off project with hospital association re. marking containers/trays for sterilisation processes following GS1 Standards

• Members of the HUG Austria are already »making acquisitions« of prospective members
Next steps

- Working on a study regarding taking the PZN out of the EAN-13 – benefits and costs
- Biggest Austrian hospital association requested for marking instruments/containers/trays in sterilisation (24 hospitals) + logistics in the hospital pharmacy
- Coming closer with pharmaceutical manufacturers
- Motivating participants in healthcare – especially politics activity
- GS1 standards should be recommended in law for traceability and marking
- Enforcing role of GS1 Healthcare Austria as platform No.1 for traceability in healthcare
- Training courses for healthcare sector
- Supporting projects with hospitals (patient ID, staff ID, sterilisation)
Proud to present

GS1 Healthcare Conference
Vienna / Austria
March 17 – 19, 2009

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Pharmaceuticals/medical devices

Product ID

• No regulatory requirements exist for bar codes on pharmaceuticals or medical/surgical devices

• Regulatory issues regarding voluntary bar coding may arise if suppliers need to change their labels to accommodate a bar code

• Regulatory concerns are based on the labelling and packaging requirements outlined in the Food and Drug Regulations (FDR). Bar code content, specification and/or symbology are not concerns as long as the product label its human readable language adhere to existing labelling and GMP requirements

Traceability

• Bill C51 (April 2008)- GS1 Canada Applauds the Federal Government for Prioritizing Food, Product and Consumer Safety
June 18, 2008 Canadian Press: The CNA is calling for the health-care system to speed up the introduction of electronic health records.

"We're so far behind in a system that costs Canadian citizens billions of dollars - we need to have that infrastructure. For nurses it means being able to have the right information at the right time at their fingertips as they're caring for patients," states Marlene Smadu, President, Canadian Nurses’ Association.

Estimate shortages of 25% by 2015.
## GS1 Healthcare Canada

<table>
<thead>
<tr>
<th>Established</th>
<th>December 2007; Official Launch - June 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priorities</td>
<td>- <em>Healthcare eSupply Chain Standards Proposal – OntarioBuys (Ministry of Finance)</em></td>
</tr>
<tr>
<td></td>
<td>- Community management</td>
</tr>
<tr>
<td></td>
<td>- Standards development</td>
</tr>
<tr>
<td></td>
<td>- Education &amp; communication</td>
</tr>
<tr>
<td></td>
<td>- Implementation support</td>
</tr>
<tr>
<td>Work Teams</td>
<td>- Healthcare Board</td>
</tr>
<tr>
<td></td>
<td>- Healthcare Technical Standards Work Group</td>
</tr>
<tr>
<td></td>
<td>- Pharmacy Board</td>
</tr>
<tr>
<td></td>
<td>- Pharmacy Technical Standards Work Group</td>
</tr>
<tr>
<td>Strategic Partnerships &amp; Collaboration</td>
<td>- CareNET Services Inc. (430+ hospitals)</td>
</tr>
<tr>
<td></td>
<td>- Federal &amp; provincial governments</td>
</tr>
<tr>
<td></td>
<td>- Industry associations</td>
</tr>
<tr>
<td></td>
<td>- Patient safety agencies</td>
</tr>
</tbody>
</table>
Associations Align to Advance Patient Safety and Healthcare Supply Chain Efficiencies

**Toronto, ON, May 26, 2008** – Members of CareNET Services Inc. (CareNET) voted on Friday in favour of aligning with GS1 Canada. Together, the organizations will dedicate collective focus on making Canada’s healthcare system safer and more efficient through the development and implementation of global supply chain standards.

CareNET represents 54% of Canadian hospitals, leading suppliers, GPOs and Solution Providers
• Manufacturers/Distributors
  • 3M Canada
  • Baxter Canada
  • Canadian Hospital Specialties
  • Cardinal Health – Alaris Products
  • HealthPro Procurement
  • Hospira Healthcare Corp
  • Johnson & Johnson Medical Products
  • Medical Mart
  • Source Medical
  • Trudell Medical
  • Tyco Healthcare

• Hospital
  • Chatham-Kent Health Alliance
  • Hamilton Health Sciences
  • Healthcare Materials Management Services
  • Health Sciences Centre
  • Humber River Regional Hospital
  • Interior Health Authority
  • Medbuy Corporation
  • Sault Area Hospital
  • Shared Services West
Healthcare Technical Work Group

- **Manufacturers**
  - Baxter Corp.
  - Cook (Canada) Inc.
  - Cardinal Health – Alaris Products
  - Johnson & Johnson Medical Products
  - Medical Mart
  - Nestlé Canada Inc.

- **Hospital**
  - Capital District Health
  - Capital Health
  - Centre Hospitalier Universitaire de Québec
  - Grey Bruce Health Services
  - Hamilton Health Sciences Corporation
  - Healthcare Materials Management Services
  - Interior Health Authority
  - Plexxus

- **Distributors/GPOs/Solution Providers**
  - McKesson Provider Technologies
  - Emergis – A Telus Company
  - GHX Canada
  - HealthPro Procurement
  - Logibec Groupe Informatique Ltée
  - Medbuy Corporation
  - Medical Information Technology
  - Ormed Information Systems Ltd.
Healthcare Pharmacy Board

• Manufacturers
  • Apotex
  • Sanofi Pasteur

• Distributors/wholesalers
  • McKesson Canada
  • GAMMA Wholesale Drugs (London Drugs)

• Hospital/Pharmacy
  • Katz Group Canada Ltd.
  • London Health Sciences -- Canadian Society of Hospital Pharmacists
  • METRO Inc.
  • Shoppers Drug Mart Corporation

• Associations
  • Canadian Association of Chain Drug Stores (CACDS)
  • Canadian Association for Pharmacy Distribution Management (CAPDM)
Pharmacy Task Group

• Manufacturers
  • Apotex
  • AstraZeneca Canada Inc.
  • Bayer Inc.
  • Merck Frosst Canada Ltd.
  • Novopharm
  • Pfizer Consumer Healthcare
  • Sandoz Canada
  • Sanofi-Aventis
  • Schering Canada
  • Wyeth Consumer Healthcare

• Hospital/Pharmacy
  • Le Groupe Jean Coutu
  • London Drugs
  • Metro Inc.
  • Proxim
  • Purdue Pharmacy
  • Shoppers Drug Mart
  • Sobeys Pharmacy/Lawton Drugs

• Distributors/wholesalers
  • McKesson Canada
  • McMahon Drug Wholesaler

• Associations
  • Canadian Association of Chain Drug Stores (CACDS)
  • Canadian Association for Pharmacy Distribution Management (CAPDM)
  • Rx&D
ECCnet Registry: Canada’s national product registry

Over 370,000 unduplicated products loaded
  • Identified by the Global Trade Item Number (GTIN Bar Code)
Over 13,000 prescription (Rx) products
  • Approximately 50 Rx Vendors
Over 10,000 over-the-counter (OTC) products
Over 450 behind-the-counter (BTC) products
Over 55,000 foodservice products
Over 2,500 suppliers participating

Next – Medical Devices
GS1 Canada won the 2008 Voluntary Inter-industry Commerce Solutions (VICS) Award for Supply Chain Excellence for enhancing ECCnet Registry with the addition of over 30 new Rx-related attributes

- Efficient: Allows trading partners to exchange accurate, up-to-date product data
- Sustainable: Eliminates paper processes
Next Steps

- Community management
  - Engage national stakeholders

- Standards development
  - Product identification standards

- Communications outreach
  - Multiple resources to keep stakeholders informed & engaged

- Implementation support
  - Education modules
  - Implementation guidelines
GS1 Healthcare France update

Valérie Marchand
1.01.2011
All lots sold on the French market must have a Datamatrix using GS1-128 AI’s and including:

01) Authorized market code in a GS1 structure (CIP 13) + Lot nb + expiry date

We are working on a document with CIP in order to help suppliers to manage the transition period with some identified issues:

• When pharmacies will be able to read Datamatrix?
• Do suppliers have to maintain a linear barcode?
• When do they have to migrate all the products?
• ….
ACL, association of MD suppliers maintain a database for MD and send the data to the pharmacies. They need to manage different codes: GTIN, ACL 13 and ACL 7, as the reimbursement organisms don’t integrate 13 digits.

Reason why we agreed to “re-sign” the agreement.

The agreement stipulates that companies can choose to identify their product with a «global GTIN» or an ACL code in a GS1 structure «ACL 13»

| 3401 | X | ACL | C |

The Social Security still use 7 digits to register the products and ensure the reimbursement. ACL allocates ACL13 and ACL7 to suppliers choosing GTIN solution (they need to be ACL member)
<table>
<thead>
<tr>
<th>Established</th>
<th>May 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Priorities</strong></td>
<td></td>
</tr>
<tr>
<td>• Data Sync</td>
<td></td>
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<tr>
<td>• Traceability in the hospitals</td>
<td></td>
</tr>
<tr>
<td>• A global Classification</td>
<td></td>
</tr>
<tr>
<td>• Answer the regulations: drugs, instruments, acts pricing</td>
<td></td>
</tr>
<tr>
<td><strong>Work Teams</strong></td>
<td></td>
</tr>
<tr>
<td>• Healthcare user group</td>
<td></td>
</tr>
<tr>
<td>• CologH (hospital logisticians)</td>
<td></td>
</tr>
<tr>
<td>• Work with suppliers to describe their products</td>
<td></td>
</tr>
<tr>
<td><strong>Strategic Partnerships and Collaboration</strong></td>
<td></td>
</tr>
<tr>
<td>• Cladimed for classification</td>
<td></td>
</tr>
<tr>
<td>• Europharmat (MD traceability)</td>
<td></td>
</tr>
<tr>
<td>• CIP/ACL</td>
<td></td>
</tr>
<tr>
<td>• GCS UNIHA (51 hospitals)</td>
<td></td>
</tr>
</tbody>
</table>
Participants

Manufacturers
- 3M France
- AGA MEDICAL
- AIR LIQUIDE SANTE FRANCE
- AMGEN
- B BRAUN MEDICAL
- SAS BAXTER BIOSCIENCES
- BOSTON SCIENTIFICS FRANCE SA
- COLOPLAST MANUFACTURING
- FRANCE COOK FRANCE
- EVOLUTIS SAS
- HEMODIA SAS
- HOSPIRA SAS
- KCI MEDICAL
- KYPHON EUROPE
- L.F.B. LABORATOIRE FRANCAIS
- LABORATOIRE GAMIDA
- LANDANGER
- LILLE HEALTHCARE SAS
- Merial SAS
- NOVO NORDISK PHARMACEUTIQUE
- S.A.S ORTHOMED
- SA PETERS SURGICAL
- PFIZER FRANCE
- SANOFI AVENTIS FRANCE
- SMITH & NEPHEW SAS
- SOPHYSA
- STRYKER FRANCE
- TERUMO EUROPE

Hospitals
- CH BICHAT CLAUDE BERNARD
- CH EUROPEEN GEORGES POMPIDOU
- CH SAINT LOUIS HOSPICES CIVILS DE LYON
- GCS UNI.H.A (52 hospitals)
- CH ARMAND TROUSSEAU
- CH PONTOISE
- CHRU LILLE
- CHRU STRASBOURG
- CHU AMIENS
- CHU DIJON
- CHU NANTES
- CHU NICE
- CHU ROUEN
- CACH NANTERRE
- AP – HP NSI/SIR
- H AP - HM

Associations
- GMSIH
- SYNDICAT INTER HOSPITALIER DE BEAUVAIS
- EUROPHARMAT
- CIP/ACL

Governmental bodies
- Ministère de la santé

Distributors/wholesalers
- AEXXDIS
- DEPOLABO - PHARMA LOGISTIQUE
- GEODIS
- CERP ROUEN / CERP FRANCE
AURE@: To involve suppliers and hospitals on the e-procurement platform leaded by 17 university hospitals.

We tried to explain on both side why do they need to use it, and what kind of benefit they could expect.

GCS UNIHA at GS1 France board
Healthcare GS1 user guide line:

- To help new healthcare members, give them an overview of GS1 standards
- which GS1 standards are used for the healthcare sector,
- where could they find more technical information.

Mostly to be downloaded to be updated when needed.
• GTIN allocation rules in French

• And still translate all the GS1 Healthcare news letters, press release, etc.
Audit of MD stock in a clinic in France:

- 200 beds
- 171 suppliers
- 91 barcodes read
- 849 references (idem in Dijon)

Status:

- 50% of the suppliers print a GS1 barcode (some of them can’t be read for different reasons, size, quality, wrong codification, etc.)
- This represent 80% of the references

- We have listed all the suppliers registered in this clinic and the type of data printed in their barcodes
Landanger, French surgical instruments suppliers is able to print quite 100% of his production using a new technology and print a “mini Datamatrix” (on needle for ex.) with GTIN and serial number.

Also offers the possibility to print the existing park of instruments with a special service in order to be sure that the print doesn’t affect the instrument.
Next steps

- What data do we need to manage to answer the different traceability requirements
- Start a pilot for healthcare waste management process
- Help suppliers to fill the e-procurement catalog
- Set up a group and a pilot on anti-counterfeiting using both solution: RFID and Datamatrix with secured information
Pharmaceuticals

- Regulatory requirement for bar coding: unique bar code must be on the packaging
- Pharmaceutical associations & Health Insurance agreed to use PZN in code 39

Medical devices

- No regulatory requirements
- Many manufacturers use EAN13 and EAN128 to identify the products
Use of GS1 bar codes in German healthcare industry*

*Survey of hospital communication center, 2003
<table>
<thead>
<tr>
<th>Established</th>
<th>12. June 2007</th>
</tr>
</thead>
</table>
| Priorities           | • Allocate the needs and requirements of the german healthcare  
                       • Give information transfer from the german group to GS1 Healthcare and back  
                       • Translate results of the GS1 Healthcare and disseminate into the german market  
                       • Spread the results in best practice examples and application recommendation  
                       • Starting pilot projects and enhance the implementation |
| Work Teams           | • Expert team: product database in healthcare |
| Strategic Partnerships and Collaboration | Associations from wholesaler and manufacturer  
• VFA – Verband forschender Arzneimittelhersteller e. V.  
• BPI – Bundesverband der pharmazeutischen Industrie  
• PHAGRO Bundesverband des pharmazeutischen Großhandels e.V.  
• BVMed – Bundesverband Medizintechnologie e.V. |
Accomplishments

• memorandum of understanding has been agreed by major lobbying groups like

• want to use GS1 Standards for product identification of pharmaceuticals
Next steps

• implement DataMatrix including expiry date, batch and serial number
• however prefix solution has to be embedded within GTIN structure including the national drug code (PZN)

=> solution suggestion by GS1 Germany:
  – pharmaceutical EAN for pharmaceuticals for the time being, no change for medical devices
  – long term solution will use GTIN
Pharmaceuticals

• Healthcare Ministry regulation (since 1997) requiring that all pharmaceuticals sold in Russia must be identified with a GTIN. GTINs are used as unique identifiers in the Russian Healthcare Ministry database of pharmaceuticals
• Traceability requirements - none

Medical devices

• No regulatory requirements
• Traceability requirements - none
<table>
<thead>
<tr>
<th>Established</th>
<th>Jan. 16, 2008</th>
</tr>
</thead>
</table>
| Priorities  | • Patient safety by preventing and reducing errors by data capture, better (reliable) documentation, adoption of global standards, with the primary focus on automatic identification  
• More efficiency in the internal supply chains |
| Work Teams  | • GOST R / Technical Committee 355 « Automatic Identification » Subcommittee 8 « GS1 Healthcare Russia » |
| Strategic Partnerships and Collaboration | • Not yet – under discussion |
Participants

• Manufacturers
  • Alsi Pharma Ltd
  • Akhtamar Ltd
  • Diagnostic Systems Ltd

Distributors/wholesalers

• Service providers
  • Service Plus Ltd (Moscow)
  • DataKrat Ltd (Ekaterinburg)
  • SA2 WorldSync Russia (formerly SINFOS Russia)

• Hospital/Pharmacy
  • Hematology Center at the Russian Academy of Medical Sciences
  • Moscow City Blood Transfusion Center
  • Ufa City Blood Transfusion Center

• Associations
  • GS1 Russia
  • Automatic Identification and Mobility (AIM) Russia
  • International Foundation for Automatic Identification (IFAI)

• Governmental bodies
  • Russian Federal Research Center for the Examination of Medical Products
Accomplishments

- Preliminary consultations with interested parties from industry and regulatory bodies
- GS1 Standards in Healthcare & GS1 Healthcare User Group - Russian editions of brochures will be available in hard copies in July
Next steps

• Speed up outreach and engagement of hospitals
• Contact and involve local regulatory bodies and trade associations so that they are aware of global activities and developments
Pharmaceuticals

Law on Medicinal Products and Medical Devices:

• Article 75 (Marketing of Medicinal Products)

The holder of the wholesale authorization for medicinal products and the manufacturer, shall keep records on the type and quantity of imported or exported medicinal products, records on sold medicinal products (per package type) in the Republic of Serbia as well as records on medicinal products imported for research and therapy.

Records referred to in Para. 1 of this Article shall contain:

1) The name of the medicine, the classification and identification (ATC, ATC-vet and EAN (GTIN) code, the form, strength and packaging of the medicine)
… Pharmaceuticals

• Article 88 (Labeling of Medicinal Products and Patient Information Leaflet)

The marketed medicinal product must include at least the following data on its outer package:

…

7) The expiry date of the medicinal product

…

12) Number of the batch and EAN (GTIN) code

…

Regulation for medicinal products (marking the basic outer package), 2008, obliged the use of GTIN - EAN (ISO/IEC 15420)
Medical devices

Low on Medicinal Products and Medical Devices:

Article 129

(Labeling of Medical Devices and Patient Information Leaflet)

Every medical device with a marketing authorization … shall include at least:

…

5) Expiry date (indicated on both packages, individual and batch packaging) ;

6) Batch number;

…

11) Current identification code ( EAN (GTIN) code)
<table>
<thead>
<tr>
<th>Established</th>
<th>24 October 2006</th>
</tr>
</thead>
</table>
| Priorities  | - to strengthen legal regulation  
- to gather representatives of participants in healthcare chain to agree what are the common requirements to reach the patient safety  
- to help users (education, participation in projects, etc.)  
- marketing activities,… |
| Work Teams  | • No separate teams |
| Strategic Partnerships and Collaboration | Members of the Team |
Participants

- Manufacturers
  - Hemofarm
  ...

- Distributors/wholesalers
  - Apoteka Beograd
  - Velefarm
  ...

- Hospital/Pharmacy
  - Zutic Clinic

- Associations
  - Association of Medicines Manufacturers

- Governmental bodies
  - Ministry of Health
  - Medicines and Medical Devices Agency
  - Fund for Healthcare Insurance
Accomplishments
(use in one hospital)

1. Patients - GLN
2. Services - GTIN
3. Medicines - GTIN
Accomplishments

Medicines and Medical Devices Agency of Serbia published The National Register of Medicinal Products (2008) in which medicines are identified with GTINs.
Accomplishments

Procedure for adoption the ISO standard for Data Matrix as national standard (ISO/IEC 16022) is in progress. It is translated on Serbian language.

We intervened for rapid adoption by Serbian Institute for Standardization.
Our big pharmacy institution, Apoteka Beograd, together with Serbian Fund for Health Insurance and one healthcare center started the pilot project of coding the data of medical prescription in DataMatrix format using AIs.

It also use electronic messages for invoice and despatch advice. GLNs are used for identification of business partners.
<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Name</td>
<td>Milutin Marinkovic</td>
</tr>
<tr>
<td>ID Number</td>
<td>1311961714027</td>
</tr>
<tr>
<td>Address</td>
<td>PEKA PAVLOVICA 84</td>
</tr>
<tr>
<td>Prescription Information</td>
<td>NORVASC 5 mg</td>
</tr>
<tr>
<td>Date of Prescription</td>
<td>20080529</td>
</tr>
<tr>
<td>Date of Validation</td>
<td>20080529</td>
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| Number of Copies | 1)
| Total Number of Items | 2)
| Total Price | 3)
| Date of Dispensing | 4)
| Date of Dispensing | 5)
| Date of Dispensing | 6)
| Date of Dispensing | 7)
| Date of Dispensing | 8)
| Date of Dispensing | 9)
| Date of Dispensing | 10)
| Date of Dispensing | 11)
| Date of Dispensing | 12)
| Date of Dispensing | 13)
| Date of Dispensing | 14)
| Date of Dispensing | 15)
| Date of Dispensing | 16)
| Date of Dispensing | 17)
| Date of Dispensing | 18)
| Date of Dispensing | 19)
Next steps

Plan is to gather big manufacturers and convince them to use Data Matrix on primary containers with GTIN, batch number and expiry date

... and, also to mark logistic units.

Initiatives toward Ministry of Health for creating regulations for marking logistic units and unit doses.

Actions toward some hospitals for using GS1 standards. Continual educational and marketing activities.
Pharmaceuticals

• Regulatory requirements for bar coding - law 140/98 - EAN code (either EAN 8 or EAN 13) must be on the packaging

• Law is in force since 1998 - enforced by distributors and pharmacists

Medical devices

• No law connected to labeling with barcodes
• New amendment of the law states the same conditions as for the drugs (not voted on yet)
<table>
<thead>
<tr>
<th>Established</th>
<th>29. 4. 2008</th>
</tr>
</thead>
</table>
| Priorities        | • Better control of the labeling barcodes  
                     • GS1 system for medical devices |
| Work Teams        | • Medical devices  
                     • Pharmaceuticals |
| Strategic Partnerships and Collaboration | • Ministry of healthcare  
                     • Slovak association for standardization of pharmaceutical information |
Participants

• Manufacturers
  • Zentiva
  • Pfizer
  • Chirana
  • Boehringer Ingelheim Pharma
  • Ozone Laboratories Slovakia
  • Johnson & Johnson s.r.o.
  • Roche Slovensko, s.r.o

• Hospital/Pharmacy

• Associations
  • Chamber of pharmacists
  • SK-Med (EUCOMED)
  • Chamber of healthcare professionals

• Governmental bodies
  • Ministry of healthcare
Accomplishments

• Amendment of the law concerning labeling of the medical devices with the barcode
Next steps

• Implementation of GS1 standards into the official eHealth strategy

• Better control of the assigned numbers by the Slovak drug administration
GS1 Healthcare [Switzerland]

[Christian Hay]
Pharmaceuticals

- registration # has to be printed in human readable form
- GMP/GDP/GSP
- weak politic pressure

Medical devices

- no legal requirement for barcoding
- CE mark or equivalent mandatory
- Reimbursement price is a problem
- no special traceability requirement, except for implants

© 2008 GS1
## GS1 Healthcare Switzerland

<table>
<thead>
<tr>
<th>Established</th>
<th>9 December 2005</th>
</tr>
</thead>
</table>
| **Priorities**    | • Secure information link with Global Healthcare  
                     • Dynamise GS1 activities in Swiss HC |
| **Work Teams**    | • Communication  
                     • Delivery process enhancement  
                     • Safe medication (bed side scanning) |
| **Strategic Partnerships and Collaboration** | • Swissmedic  
                     • Refdata Foundation |
Participants (only GS1-CH members)

• Manufacturers
  • [Actelion]
  • [Alloga]
  • [AstraZeneca]
  • [Basilea Pharmaceuticals]
  • [CSL Behring]
  • [Globopharm]
  • [Janssen-Cilag]
  • [JnJ Medical]
  • [Novartis]
  • [Pfizer]
  • [Plus Ortho / S&N]
  • [Salzmann-Medico]
  • [Sanofi-Aventis]
  • [Teva]
  • [UCB]
  • [Ypsomed]

• Distributors/wholesalers
  • [Amedis (Phoenix)]
  • [Galexis (Alliance-Unichem)]
  • [Voigt]

• Hospital/Pharmacy
  • [Aarau]
  • [Geneva]
  • [Thun]
  • [Bern]

• Associations
  • [GSASA (Hospital Pharmacists)]
  • [Patient Safety Foundation]

• Governmental bodies
  • [Swissmedic]
Accomplishments

- SmartLog project – reports to be validated
- Patient safety in Bedside Scanning process: first barcoded single dose arrive on the market
Next steps

- Enhance information and promote bedside scanning
- Enhancement of distribution process: work with authorities on pandemie vaccination
Pharmaceuticals
• Strong Recommendation by Purchasing and Supply Agency for GS1 bar coding, product ID number in 2004

• National Procurement eEnablement Strategy launched June 2007

• National Procurement eEnablement Delivery Group

Medical devices
• Terms of Trading for NHS Supply Chain for bar coding, product ID number

• Member of National Procurement eEnablement Delivery Group

• NICE guidance IP196 and HSC 2000/32 on Traceability of instruments (Appendix 8, Volume 2, Schedule 6)
### Established

<table>
<thead>
<tr>
<th>Established</th>
<th>September 2007</th>
</tr>
</thead>
</table>

### Priorities

- Increased use of GTINs within Hospital Supply Chain (especially devices)

### Work Teams

- GDS and aligning the use of catalogues in the NHS and the NHS CfH Dictionary of Medicines and Devices.
- Implementation of GLNs by the NHS to identify locations

### Strategic Partnerships and Collaboration

- Government Agencies
- Industry Associations
- Manufacturers/Suppliers
- Healthcare Providers
Main Participants

Rachel Hodson    Head of eProcurement PasA
Dr. Helen Lovell    Quality Strategy Team DH
Chris Ranger    Head of Safer Practice NPSA
Neil Lawrence    AIDC Project Manager NHS Connecting for Health
Mike Kreuzer    Director Technical & Regulatory ABHI
John Ferguson    Commercial Affairs Manager ABPI
Mike Stubbs    Director Bunzl
Bryan Semple    IT Solutions Director NHS Supply Chain
Jonathon Kay    Professor of Health Informatics City University
Graham Medwell    Information Manager Leeds Teaching Hospitals
Jenny Gough    Packaging Manager Molnlycke Healthcare
Alan Hounsell    Section Leader Smiths Medical International
Judie Finesilver    eBusiness Pharmacist PaSA
Accomplishments

- 110 hospitals joined GS1 UK
- Working with DH on cross agency strategy
- Working with NPSA on patient identification
- Working with DH National Decontamination Team
- Working with Pharmacy National Advisory Board
- Holding joint Hospital and Supplier event in September 2008 event
Next steps

- Ann Keen MP, parliamentary under secretary for health services, has provided further support to the initiative by recommending the use of GS1 codes throughout the healthcare system, both for manufactured products and for coding systems used within healthcare settings. Speaking at the recent Patient Safety Congress in London she said, “We want to support the use of technology where this can lead to service improvement and are actively encouraging the uptake of coding in healthcare. We believe that this can help staff do what they want to do – deliver the right treatment, to the right patient, at the right time. We know it works – patient safety is improved and, therefore, we have recommended the use of GS1 codes.”
Next steps

- Extension of GS1 activity in Home Countries
- Discussions with Independent Healthcare Providers
GS1 Healthcare US

Dennis Harrison
President, GS1 Healthcare US
Pharmaceuticals
- Bar codes (GTINS) on all pharmaceuticals – April, 2006
- 95% of manufacturers use GS1 system
- FDA: RFID allowed on solid dose medications

- Traceability:
  - Florida – As of July, 2006 – Non ADR’s must pass Pedigree
  - FDA – As of December 2006 – All non authorized distributors (ADR) must pass Pedigree
  - 17 states require Pedigree
  - FDA must choose or develop unique identifier by April, 2010
  - California – 2011 – All participants must pass Pedigree – all items serialized

Medical devices
- No current regulations
- 85% of manufacturers use GS1 system
- FDA must choose or develop unique identifier by April, 2010

- Traceability: Limited activity
# GS1 Healthcare US

<table>
<thead>
<tr>
<th>Established</th>
<th>1/01/08</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work Teams</strong></td>
<td></td>
</tr>
<tr>
<td>• Product Identification (GTIN)</td>
<td></td>
</tr>
<tr>
<td>• Location Identification (GLN)</td>
<td></td>
</tr>
<tr>
<td>• GDSN Implementation</td>
<td></td>
</tr>
<tr>
<td>• Traceability Adoption</td>
<td></td>
</tr>
<tr>
<td>• Application &amp; Implementation</td>
<td></td>
</tr>
<tr>
<td>• Communication Advisory Team</td>
<td></td>
</tr>
<tr>
<td>• Weekly Teleconferences</td>
<td></td>
</tr>
<tr>
<td>• Quarterly Face to Face Meetings</td>
<td></td>
</tr>
<tr>
<td><strong>Strategic Partnerships and Collaboration</strong></td>
<td></td>
</tr>
<tr>
<td>• CHeS - Coalition for Healthcare eStandards</td>
<td></td>
</tr>
<tr>
<td>• HSCSC - Healthcare Supply Chain Standards Coalition</td>
<td></td>
</tr>
<tr>
<td>• SMI - Strategic Marketplace Initiative</td>
<td></td>
</tr>
<tr>
<td>• AHRMM – Assoc. for Healthcare Resource and Materials Mgmt.</td>
<td></td>
</tr>
<tr>
<td>• HIGPA - Health Industry Group Purchasing Association</td>
<td></td>
</tr>
</tbody>
</table>
GS1 HC US
“Ad hoc” Leadership Team

• AHRMM – Deborah L. Sprindzunas
• Amerinet – Mary Beth Lang
• Becton Dickenson – Dennis Black
• Johnson & Johnson – Michael Rose
• Mayo – Joe Dudas
• McKesson – Ron Bone
• Novation – Dennis Byer
• SMI – Dennis Orthman
• Univ. Kentucky Medical Center – Jean Sargent
• Walgreens – Steve Addante
Participants

Manufacturers
3M
Abbott Labs
Alcon Labs
Amgen
Amphastar Pharmaceuticals
Apopex
Baxter
BD
Becton Dickinson
Bristol-Myers Squibb
Covidien
Genzyme Corporation
GlaxoSmithKline
Hospira
Johnson & Johnson
Kyowa Pharmaceutical, Inc.
Medimmune Inc.
Medline
Medtronic
Merck
P&G
Pfizer
Purdue Pharma
Sage Products
Sage Pharmaceuticals USA
Upsher-Smith Laboratories, Inc.

Solution Providers
AAkar Technology Inc
Accenture
Acsis Inc.
Aegate Ltd
Authentix Ltd
Axway
Booz Allen Hamilton
Deloitte Consulting, LLP
Domino Amjet
Edge Dynamics
Elge Inc.
GHX
Globe Ranger
IBM
Infosys
Inmar/MedTurn
Lawson Software
Maxiom Consulting Group, Inc.
Medical Imaging & Technology Alliance
RFXcel Corporation
SAP Labs, LLC
Sensitech
Supplyscape
Unisys North America
VCG & Associates
Associations
ASHP - American Society of Health System Pharmacists
AHA - American Hospital Association
AHRMM - Assoc. for Healthcare Resource & Materials Mgmt.
CheS - Coalition for Healthcare eStandards
GPhA - Generic Pharmaceutical Association
HDMA - Healthcare Distribution Management Assoc.
HIDA - Health Industry Distributors Association
HSCSC - Healthcare Supply Chain Standards Coalition
NACDS - National Association of Chain Drug Stores
National Coalition of Pharmaceutical Distributors
NCPDP - National Council for Prescription Drug Programs
SMI - Strategic Marketplace Initiative
VCG & Associates
Verisign

Government Agencies
DoD - Department of Defense
FDA - US Food and Drug Administration
US Army

Third Party Logistics
MedTurn

GPOs
Amerinet
Medassets
Novation
Premier

Distributors
AmerisourceBergen Corporation
Cardinal Health
McKesson US Pharmaceutical
Owens & Minor
US Oncology

Retailers
CVS Caremark
Target
Walgreens
Wal-Mart

Hospitals
Ascension Health
Geisinger Health System
Intermountain Healthcare
Mayo Clinic
Norton Healthcare
Novant Health
Ridgeview Medical Center
Sentara
Sisters of Mercy (ROI)
University Healthcare System Augusta (UHCS)
University of Kentucky Medical Center
Veterans Administration Hospital
Accomplishments

- Formed GS1 Healthcare US – Vision, Mission, Charter
- Held first Workgroup Forum – 3/11-3/12/08
- Second Workgroup Forum – 7/23-7/24/08 in San Antonio, Texas
- Completed Workgroup plans
- Completed Phase 2 of the Minnesota GLN Pilot
- Submitted 27 page and 43 page responses to the FDA regarding Unique Identifiers and Drug Traceability.
- Continuing to meet monthly with the California Board of Pharmacy (date moved from 2009 to 2011).
- Created a marketing campaign
  - “Are You Ready?”
- Building Patient Safety
### GS1 Healthcare US 2008 Strategic Plan: Global Data Synchronization Network® (GDSN®) Workgroup

**Mission:** Accelerate the adoption of GDSN standards in U.S. Healthcare and ensure data accuracy.

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Initiatives</th>
<th>Deliverables</th>
<th>Due Date: Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Formalize Global Data Synchronization Network (GDSN) workgroup.</strong></td>
<td>- Develop &amp; approve mission for the workgroup.</td>
<td>- Publish mission.</td>
<td>Q1 2008: Complete</td>
</tr>
<tr>
<td></td>
<td>- Develop &amp; approve workgroup plan.</td>
<td>- Publish workgroup plan.</td>
<td>Q2 2008: Complete</td>
</tr>
<tr>
<td></td>
<td>- Complete integration of GS1 Healthcare US GDSN and HSCSC data sync workgroups.</td>
<td>- Integrate meetings.</td>
<td>Q1 2008: Complete</td>
</tr>
<tr>
<td>2. <strong>Define requirements for implementation of GDSN standards.</strong></td>
<td>- Define U.S. requirements for the GDSN global standard.</td>
<td>- Deliver requirements to GS1 Healthcare.</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>- Develop attribute requirements/recommendations.</td>
<td>- Publish attribute list.</td>
<td>Q2 2008: Complete</td>
</tr>
</tbody>
</table>
| 3. **Create communication tools and provide information necessary for stakeholders in U.S. healthcare to understand how to trade using the GDSN.** | - Develop GDSN Tool Kit to include:  
  - GDSN Package Measurement Requirements.  
  - GTIN Healthcare Allocation Rules.  
  - U.S. Market Attributes for Healthcare.  
  - Cost elements  
  - Healthcare industry communication templates for all early adopter participants (Mayo, Ascension Health).  
  - Review and promote GS1 Healthcare US webinars about standards in healthcare and GDSN. | - Publish Provider Tool Kit. | Q2 2008                |
|                                                                            | - Conduct webinars.                                                                          |                                                                           |                        |
| 4. **Coordinate GDSN promotional activities with specific healthcare associations.** | - Review and promote communications developed by GS1 US in collaboration with multiple healthcare organizations, including AHRMM, AHE, HSCSC, HIDA, SMI, HDMA, HFMA & ADVAMED. | - Publish summary of communications.                                       | Ongoing                |
|                                                                            | - Review and promote case studies and/or summaries of key findings about the following GDSN pilots:  
  - Dept. of Defense  
  - Global Pilot | - Publish summary and key findings.                                                        | Q2 2008                |
| 5. **Connect with global activities.**                                     | - Monitor, review & comment on global information from GS1 Healthcare.                       | - Report feedback to GS1 Healthcare US.                                    | Ongoing                |
|                                                                            | - Demonstrate global interoperability of the GDSN by connecting DoD participants to trading partners outside the U.S. (e.g. Australia). | - Write summary of success.                                                | Q2 2008                |
Accomplishments

- Formed GS1 Healthcare US – Vision, Mission, Charter
- Held first Workgroup Forum – 3/11-3/12/08
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- Continuing to meet monthly with the California Board of Pharmacy (date moved from 2009 to 2011).
- Created a marketing campaign
  – “Are You Ready?”
- Building Patient Safety
Next Steps

- Continue to build GS1 Healthcare US membership
- Continue working the Workgroup plans
- Embrace hospitals
- Complete tool kits
- Grow the GLN Registry for Healthcare
- Create a Healthcare video
- Continue to move DoD GDSN participants into production
- Participate in the Global GDSN pilot
- Develop a hospital implementation team (consulting)
- Continue working with the California Board of Pharmacy
GS1 Healthcare US Community wants -
Less Talk, More Action!

GS1 Healthcare US Is All About
Implementation!
Back-up
Healthcare in New Zealand

Population | 4,267,442* & 40 mil Sheep
Healthcare system | Combination of Public and Private
Healthcare expenditure (per capita) | NZ$3728.00 (MoH 2006) NZ$ = €0.49c
Healthcare expenditure (% of GDP) | 9.45% (MoH 2008)

Key Government Strategies

- The New Zealand Public Health and Disability Act 2000 established the New Zealand Health Strategy and the New Zealand Disability Strategy as the key policy documents for the health and disability sectors. Under these overarching strategies are population-based strategies and service-based strategies.

- Population-based strategies include the Health of Older People Strategy, He Korowai Oranga – Māori Health Strategy and the Pacific Health and Disability Action Plan, while service-based strategies include the Primary Health Care Strategy and the New Zealand Palliative Care Strategy.

* 13th June 2008
Healthcare in Australia

<table>
<thead>
<tr>
<th>Population</th>
<th>21.2 million (as at Jan 2008)(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare system</td>
<td>Combination of public and private</td>
</tr>
<tr>
<td>Healthcare expenditure (per capita)</td>
<td>$78,598 million AUD (as at 2003-4)(^2)</td>
</tr>
<tr>
<td></td>
<td>$3,707 AUD per capita (^2)</td>
</tr>
<tr>
<td></td>
<td>1 Australian dollar = 0.60 Euros</td>
</tr>
<tr>
<td>Healthcare expenditure (% of GDP)</td>
<td>9.6 (as at 2004)(^3)</td>
</tr>
</tbody>
</table>

Main challenges in healthcare re. patient safety and efficiency:

- Ensuring accurate master data
- Supply chain efficiency – accuracy in communication and physical delivery
- Ensuring the correct drug, in the correct dose, is supplied to the patient
-Aligning medicines and device terminology throughout Australia

\(^1\) Australian Bureau of Statistics
\(^2\) Australia’s Health, 2006
\(^3\) World Health Organisation
### Healthcare in Austria (based on OECD figures)

<table>
<thead>
<tr>
<th>Population</th>
<th>8,340,924</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healthcare system</strong></td>
<td></td>
</tr>
<tr>
<td>• Social health insurance scheme is compulsory – covering 99% of popul.</td>
<td></td>
</tr>
<tr>
<td>• Access for every citizen to medical + social services on the basis of legal compulsory insurance</td>
<td></td>
</tr>
<tr>
<td>• Social security system composed of legal health insurance, accident and pension insurance</td>
<td></td>
</tr>
<tr>
<td>• Financed by social insurance entities + various territorial bodies</td>
<td></td>
</tr>
<tr>
<td>Healthcare expenditure (per capita)</td>
<td>$3,500,-</td>
</tr>
<tr>
<td>Healthcare expenditure (% of GDP)</td>
<td>10.3%</td>
</tr>
<tr>
<td></td>
<td>2/3 of this sum was paid for by the Austrian “Sozialversicherung”</td>
</tr>
</tbody>
</table>
Priorities wrt patient safety:

• Increasing awareness for global marking in healthcare – especially politics
• Motivating stakeholders for active participation
• Counterfeiting and online trading – currently most discussed issues in Austria
Healthcare in France

<table>
<thead>
<tr>
<th>Population</th>
<th>63,573,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare system</td>
<td>Public &amp; private</td>
</tr>
<tr>
<td>Healthcare expenditure (per capita)</td>
<td>€ 3, 318</td>
</tr>
<tr>
<td>Healthcare expenditure (% of GDP)</td>
<td>11%</td>
</tr>
</tbody>
</table>
# Healthcare in Germany

## Population

<table>
<thead>
<tr>
<th>Population</th>
<th>82,689,000</th>
</tr>
</thead>
</table>

## Healthcare system

<table>
<thead>
<tr>
<th>Healthcare system</th>
<th>combination of public and private</th>
</tr>
</thead>
</table>

## Healthcare expenditure (per capita)

<table>
<thead>
<tr>
<th>Healthcare expenditure (per capita)</th>
<th>3171,3 $</th>
</tr>
</thead>
</table>

## Healthcare expenditure (% of GDP)

<table>
<thead>
<tr>
<th>Healthcare expenditure (% of GDP)</th>
<th>10,6 %</th>
</tr>
</thead>
</table>

## Main challenges in healthcare re. patient safety and efficiency:

- Improve patient safety
- Save money and improve supply chain efficiency
- Auto-ID
- Traceability effectively
- Catalogues
- Classification
- EDI
- Patient record
<table>
<thead>
<tr>
<th>Population</th>
<th>148 mn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare system</td>
<td>Public hospitals – ca. 10,000, private hospitals – ca. 500</td>
</tr>
<tr>
<td>Healthcare expenditure (per capita)</td>
<td>US$ 186.5</td>
</tr>
<tr>
<td>Healthcare expenditure (% of GDP)</td>
<td>4-5%</td>
</tr>
<tr>
<td>Population</td>
<td>7,5 milions</td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Healthcare system</td>
<td>Dominant is Public system but</td>
</tr>
<tr>
<td></td>
<td>Private is also in rise</td>
</tr>
<tr>
<td>Healthcare expenditure (per capita)</td>
<td>230 EUR</td>
</tr>
<tr>
<td>Healthcare expenditure (% of GDP)</td>
<td>NA</td>
</tr>
</tbody>
</table>
Healthcare in Slovakia

<table>
<thead>
<tr>
<th>Population</th>
<th>5 milion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare system</td>
<td>Public and private</td>
</tr>
<tr>
<td>Healthcare expenditure (per capita)</td>
<td>300 US$ 1.5 billion $</td>
</tr>
<tr>
<td>Healthcare expenditure (% of GDP)</td>
<td>11%</td>
</tr>
</tbody>
</table>

Priorities wrt patient safety:
- Implementation of eHealth strategy - electronic patient record, interconnected database for hospitals, pharmacies, distributors
## Healthcare in Switzerland

<table>
<thead>
<tr>
<th>Population</th>
<th>7’252’000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare system</td>
<td>Combination public-private¹</td>
</tr>
<tr>
<td>Healthcare expenditure (per capita)</td>
<td>4011 US $</td>
</tr>
<tr>
<td>Healthcare expenditure (% of GDP)</td>
<td>11.5</td>
</tr>
</tbody>
</table>

### Priorities regarding patient safety:

- **Foundation for patient safety** ▶ learning with errors, enhancing error reporting systems, etc.
- **Increased awareness about bedside scanning** ▶ high risk drugs start to be labelled at unit level (injections, blisters)

---

¹ On June 2nd, 2008, a federal votation rejected that hospital should be funded exclusively by health insurances. Public hospitals are today funded by cantons for the investments and by the insurers for the care delivered to the patients (DRGs for in-patients and fees for service for out-patients)
Healthcare in UK

<table>
<thead>
<tr>
<th>Population</th>
<th>60,776,238 (2007 estimate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare system</td>
<td>Free at the point of need</td>
</tr>
<tr>
<td>Healthcare expenditure per capita</td>
<td>£1500</td>
</tr>
<tr>
<td>Healthcare expenditure (% of GDP)</td>
<td>8.2%</td>
</tr>
</tbody>
</table>

- Main challenges in healthcare are patient safety and efficiency:
  - Medication errors – Coding/Scanning & Positive Patient Identification
  - Iatrophic infection : human vCJD – Marking and Traceability
  - Supply chain inefficiencies – Product marking & Data Synchronisation