Galician Public Health Care System

Purchasing and Logistics Project

GS1 standards
The Galician Health Service (Sergas) has run Galicia’s health system since 1991.

2,701,042 health system users
14,174,792 Family doctors' consultations
4,079,738 Specialists' consultations
1,060,166 urgencies
236,578 admission
164,737 surgical operation
**Primary Care** : 7 Primary Care Areas

Organization:
- 6 XAP
- 1 Area Sanitaria

Centros:
- 390 Primary Care Units
- 97 Support Units
- 90 Permanent Care Points (PAC)

**Specialized Care** : 15 areas of reference to hospitalization.

Organization:
- 9 Gerencias de hospitales
- 1 Área Sanitaria
- 4 Fundaciones Públicas Sanitarias

Centres (32 hospitals altogether):
- 7 Complex Hospitals
- 3 regional hospitals
- 4 Hospital Foundation.

**Public Health Services**

**Administrative Services**

**Non hospital public foundations** (CTG, FPUSG061, INGO, FEGAS, MEDTEC, FPMGenómica)
34 Centers of management with capacity of contracting, purchase, provisioning …

… their mission: to provide to the professionals of health system of the necessary material resources to carry out the welfare activity

Coordinated by means of projects of corporate area

- Model of Integrated purchase (IntegraCom).
- Common catalogue of products.
- Evolution towards an efficient chain of supplies.
- Common system information model.

Centralizing without reducing autonomy of the centres management.
Corporate and strategic politics(policy) of Systems of Information. “Rede de Saude”

- **Main lines**: EHR, e-administration, analytical information systems, public health, business process optimization, infrastructure and services.
- **Corporate Information System**: Tools and common systems.
- **Corporate Network of Telecommunications**.
- **Common methodology**: Functional Committees.

The “Commom” project facilitates:

- **Homogeneous Information** that facilitates the comparison.
- **Common procedures** that favor the equity in the use of the sanitary system.
- **Global services**: T.I.C. The same service level in every centre.

12,156 Computer equipments and 22,878 system information users.
Galician Public Health Care System

Purchasing and Logistics System
In the year 2000 there begins the corporate project of provisioning management

- Definition of a general model of management.
- Progressive implantation of a common ERP in every centre: Same information model.
- Progressive introduction of the same culture of the management of the provisioning: Formation / Conviction.
- Definition of a common catalogue of products.
- Integrating the efficient supply chain concepts and tools. Use of standards: CDB (EAN) for product’s identification, EDI for communication with suppliers.
Difficulties

- Different cultures and organization in every centre.
- Logistics is not main business.
- A huge variety of products.
- Little implication of suppliers in the application of the standards in our process.
- Physical difficulties:
  - Geographic dispersion (too many points to attend)
  - Complexity of the productive structure of hospitals
  - Different stores conditions.
<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nº de centros (todos los centros de at. primaria y especializada)</td>
<td>20</td>
</tr>
<tr>
<td>Importe de compras (miles de €)</td>
<td>203,299</td>
</tr>
<tr>
<td>Nº de servicios de compras/aprovisionamiento</td>
<td>20</td>
</tr>
<tr>
<td>Nº de almacenes</td>
<td>38</td>
</tr>
<tr>
<td>Recursos humanos de compras y almacén</td>
<td>292</td>
</tr>
<tr>
<td>Nº de proveedores</td>
<td>1,350</td>
</tr>
<tr>
<td>Nº de proveedores con códigos EAN</td>
<td>82</td>
</tr>
<tr>
<td>Nº de proveedores con EDI</td>
<td>58</td>
</tr>
<tr>
<td>Nº de artículos Catálogo Central Productos SERGAS</td>
<td>28,468</td>
</tr>
<tr>
<td>Nº de referencias comerciales Catálogo Central Productos SERGAS</td>
<td>67,753</td>
</tr>
<tr>
<td>Nº de unidades de consumo - clientes internos</td>
<td>3,228</td>
</tr>
<tr>
<td>Nº de pedidos a proveedor</td>
<td>194,538</td>
</tr>
<tr>
<td>Nº líneas de pedido a proveedor</td>
<td>462,556</td>
</tr>
<tr>
<td>Nº líneas albaranes de entrada en almacén</td>
<td>514,328</td>
</tr>
<tr>
<td>Nº líneas de albaranes de salida a unidades de consumo</td>
<td>2,688,426</td>
</tr>
</tbody>
</table>

(*) Excluidos inversiones, productos farmacéuticos, hemoderivados, gases medicinales, energía, comunicaciones y materiales de mantenimiento
Year 2006 the situation of the project is checked. Review guidelines.

- To promote ‘best practices’ in replacement models.

Major availability to the information to all partners involved: intranet, internet, … as a frame for collaboration.

- Continue with standards GS1 as a tool to improve:
  - Ask for suppliers more implication.
  - Try to increase automation level in supply chain,

Focus on internal client (units of consumption): *The purpose of logistics organization is to ensure that each point of consumption is being fed with the right product in the right quantity and quality at the right point in time.*
The Catalogue of Products answers to the need of the Galician Service of Health to know, of homogeneous and comparable form, the economic impact of the technologies(skills) and materials of medical, sanitary use, and of not sanitary use consumed in the welfare activity.

- Consolidation of centralized database of suppliers.
- Consolidation of centralized catalogue of products of Sergas.

| Including | 
|-----------------|-----------------|
| Sanitary products, of in vitro diagnosis, and implants. |
| Not sanitary products: linen, papers, office material, forms and material of cleanliness. |

| Not Including (nowadays) | 
|-----------------|-----------------|
| Pharmaceutical products. |
| Fixed assets (plans of needs). |
| Products of maintenance. |
| External and compound services. |
• Classification: group, subgroup, family. Countable imputation.
• Definition and identification of products. Comercial references. Suppliers.
• Complementary Information: images, technical characteristics, use recommendations, …

• Catalogue’s elaboration: Colaborative work and maintenance procedures.
  • Needs determined by management centres, coordinated by experts group.

• Diffusion across intranet for sanitary and non sanitary professionals.

Adecuation to centers activity: centers determines which products of the catalogue they need. Complete its information with those of management (levels of stock, ubication, …).
SERGAS has adopted standard GS1 128, for development of its logistic system.

Reference database to align Sergas’s catalogue, with the supplier’s catalogue and GTIN identification.

3 levels of identification of products:

- Sergas Catalogue (Language of Sergas)
- Marketing Reference (Language of the supplier)
- Identification GTIN ("Universal language")

---

**Item Code**

**Supplier Reference**

**GTIN-1**

**GTIN-2**

**GTIN-N**
**Objectives:**

- Reduce administrative task.
- Automatize repetitive task.
- Reduce errors, cost, time, …
- Increase safety, quality service to internal clients.

**Codification and symbolization:**

- Standard GS1 application.

**Mobility:**

- Inventory devices, RF
Logistics points where barcodes are allowed

Different organization models covered, corresponding to diverse realities

- **Stocks Pacts**: Level of stocks to maintain or average values of consumption settled down. Warehouse staff check periodically.

- **Plant Management**: Replacement by out of stock. There is a selfcontrol of the unit level; incomings and outgoings are registered and replacement is automatic in out of stock points. Professionals from unit of consumption assume logistics tasks.

- **Movements in Main Stores**: Inventory, Incoming/outgoing.

- **Management of the Warehouse (Depot)**: Traceability of the implant in its movement through the hospital.
It is necessary to identify:

- Articles / Products that move for the center.
- Racks / Locations of the general store or secondary stores (units of consumption). They identify where the products are placed.
- Unit of consumption: identification at the door.
- Product (implants) in warehouse (depot).

2 types of labels

- External label. Supplier label.
- Internal label. Where necessary
● GTIN13 (Non sanitary product)
  ❖ It is used to identify the unit

<table>
<thead>
<tr>
<th>PREFIX</th>
<th>CODE OF COMPANY</th>
<th>CODE OF PRODUCT</th>
<th>C</th>
</tr>
</thead>
</table>

● GS1 128 (Medical Device) For the sanitary products, in which it is necessary to control the trazabilidad and the caducity.
  ❖ Application Identifiers:
    ✗ (01) It precedes the article identification
    ✗ (02) It precedes the contained article identification
    ✗ (37) Quantity
    ✗ (17) It precedes the expiry date (YY/MM/DD)
    ✗ (10) It precedes the batch number
  ✗ Internal IA to compatibility internal and external labels.
    ✗ (91) Internal Sergas code
    ✗ (93) Location code.
    ✗ (96) Internal identification implant.
<table>
<thead>
<tr>
<th>Unit of Consumption</th>
<th>Label</th>
<th>Device</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement by out of stock: inventory at units</td>
<td>Ext.</td>
<td>Int.</td>
</tr>
<tr>
<td>Replacement by out of stock: Outgoing movements.</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Stock level agreement: stocks inventory</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main Store</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory</td>
<td>Ext.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Others</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Implants</td>
<td>Ext.</td>
</tr>
</tbody>
</table>
For the logistic management as important as the flow of goods it is the flow of information.

Different views of the same information (and same system) attending to what every role needs.

Intranet / Internet context.

- It means:
  - Transparency. Generation of confidence relations between partners.
  - Reduction of mistakes. Same language.
  - The Systems of Information give support to the processes and also give the pertinent information for the evaluation and improvement.
Purchasing and Logistics System
Flow of information

- **Análisis de situación.**
- **Toma de decisiones organizativas**
- **Seguimiento de objetivos**
  - Personal Directivo Central y Periférico
  - Control de Gestión, control del proceso

- **Control del proceso**
- **Control de la actividad**
- **Reporting**
  - Personal de Servicios generales (expertos en el proceso)

- **Información de seguimiento del servicio que se le presta.**
- **Participación en el proceso de aprovisionamiento de su unidad.**
  - Profesionales sanitar los o no sanitarios.

- **Información del estado del proceso.**
- **Facilitador de información.**
  - Personas ajenas a la organización.
Professionals of the unit of consumption must know that the materials necessary for the accomplishment of their activity will be available when they need them – Intranet context.

- **Participation:**
  - Requests of material.

- **Professional Information:**
  - Available catalogues
  - Technical Information of products.

- **Follow-up of the received service** (activity and logistic quality):
  - Information of consumptions and costs
  - Fulfillment of the agreements of levels of stocks and services.
An internet access for suppliers to the process, in a sure and restricted context.

- **Detailed Information of the economic processing**:
  - invoices / budgetary documents of payment of suppliers.

- **Logistic and provisioning information**:
  - GLNs
  - Consultation of the warehouse (depot) (March 2008)

It runs from October 2006.

314 companies registered in the system.

- 59% of the suppliers with superior invoicing to 300,000 € are habitual users of the system.
It begins at 2003 with 7 complex hospitals and 1 Public Foundation

Two messages implemented:
- ORDERS:D:96A:UN:EAN008
- DESADV:D:96A:UN:EAN005

Technical implementation:

- Communications: EDI through Internet.
- Estación de Usuario: Solución tipo ‘FRONT-END’:
  - ERP sends or receives information.
  - EDIWIN software: data mapping interfaz and flow controlling information.
- Server EDI Dedicated: SEDEB2B.
2007 - review of situation and architecture

- **12 new centres**: Primary Care, Regional Hospitals and Public Hospital Foundation. → 20 centres → More traffic from Sergas.

- **Quality audit** of GTIN database.

- The only (unique) Sergas’s identification as a corporation.

- Definition of a **procedure** to integrate new suppliers.

GLN: 84352730xxxxx
2007 - review of situation and architecture

- Centralized architecture → Lower maintenance cost.

- On-line integration with ERP for flow controlling information → Simplicity for users.
Business figures

### Amount Order

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Núm. of Suppliers</td>
<td>43</td>
<td>48</td>
<td>53</td>
<td>51</td>
<td>63</td>
</tr>
<tr>
<td>% EDI</td>
<td>12,87</td>
<td>16,30</td>
<td>24,79</td>
<td>28,14</td>
<td>27,72</td>
</tr>
<tr>
<td>%Rfax</td>
<td>21,09</td>
<td>35,91</td>
<td>39,21</td>
<td>38,82</td>
<td>42,03</td>
</tr>
<tr>
<td>%Otros</td>
<td>66,04</td>
<td>47,78</td>
<td>36,00</td>
<td>33,04</td>
<td>30,25</td>
</tr>
</tbody>
</table>

### % Purchase Order Evolution (number of purchase order – 2007)

- % EDI: 25%
- %Rfax: 23%
- %Otros: 52%
Galician Public Health Care System

*Purchasing and Logistics Project*

*Use Cases*
Example 1:
Small hospital. 85 beds. 34 points of consumption. 41,000 outgoing movements. 9,500 incoming movements.

- Main Store - Inventory
  - Shelves – Internal Label.
  - Inventory online by means of RF infrastructure.
• Unit of consumption (GFH).
  
  • **Stock Pacts**: SLA: products, quantities, schedule.
    • Locations– Internal Labels
    • Inventory offline. Automatique translate to ERP.

  • Electronic request for non habitual products.

**Conclusions**

• Low investments.

• Few human resources dedicated to the tasks of inventory. Professional from unit of consumption do not participe in daily task of inventory.

• Disappearance of the administrative activity of record of requests. Eliminates the flow of paper.

• Low level stocks at secondary stores. Frequently inventory.
Example 2:
Complex Hospital. 841 beds. 306 points of consumption.

- Unit of consumption (GFH).

  - Sanitary units:
    - Replacement by out of stock: SLA: products, stock levels,…
    - Products labelled GS1 (both internal and external).
      - Sanitary professionals register every outgoing movement with barcode scanner.
      - Dismish level generates automatic replacement request to main store.

  - Administrative Units: Electronic request.
R.D. 414/1996, 1st of March, Article 25, monitoring systems, part 4, says about traceability:

“ The implants below listed distributed in Spain must be supported by an implant card”

a) Heart and Blood implants
b) Central nervous system implants
c) Nervous and muscular stimulators
d) Spinal column implants
e) Infusion bombs to be implanted
f) Artificial hip
g) Artificial knee
h) Breast implant
i) Implanted lens

The implant card includes:
- Name/ Product model.
- Batch or Serial number
- Manufacturer’s name and address
- Health Centre name
- Implantation date
- Patient identification number

By triplicate
1. **Record of the implant data:**
   - **Data register through symbolized GS1 128:** Ident. product, serial number, expiry date, lot code, ...
   
   - A serial number assigned to a specific unit. Identify the item throughout the supply chain.
   
   - Item not symbolized: Printing internal label.

---

**Purchasing and Logistics System**

**Example 3 – Traceability of implants**

<table>
<thead>
<tr>
<th>Article name</th>
<th>Commercial reference</th>
<th>Provider</th>
<th>GFH.</th>
<th>Loc.</th>
<th>S.N.</th>
<th>B.N.</th>
<th>E.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>XXXX</td>
<td>XXXX</td>
<td>Series n</td>
<td>Batch n</td>
<td>yy/mm/dd</td>
</tr>
</tbody>
</table>

(96) **Depot n**

(96) **00037227**

(96) → Internal number identification
2.- Record of the implant card.

- Information of the intervention (patient, professional)
  -> Integration with HIS.
- Implanted products: captured by a barcode scanner.
- Deduction of implanted element from provider depot.

3.- Notification.

- Issue of the implant card: 3 copies (patient, clinical history, supplier).
- Reposition and invoicing proposal that later is ratified, sending to supplier by: email, fax, or ORDERS message (EDI).
- Then implant card is send by mail (no edi message integrated)

4.- Reposition.

- DESADV message from supplier, if its possible.
‘Oficina Virtual do Provedor’

- On-line information for supplier with inventory of bonded goods. Mainly implants.

- Not included personal information (LOPD).
Galician Public Health Care System

Purchasing and Logistics Project

Conclusions
Three tools to reach more efficient models of management and of service for internal clients:

- Access to information of purchase and logistic process.
- Automation of logistic tasks.
- Standard GS1 to identify and report products movements.

Difficulties:

- Few symbolization of products. Few suppliers as EDI trading partners.
- The most ideal models are still an “exception”.

A long time consolidation is needed. Tools and information systems are necessary but not enough.
• **Continuity**: with promoting the use of available tools in order to get better quality levels.

**Evolution**: New tools in order to improve the logistics project (and solve some difficulties):

- Pilot models RFID in the management of warehouses (deposits) of implants. (kick off – Feb.08) → In order to improve identification and trazability.
- Catalogue maintenance through ‘Oficina Virtual do Provedor’ (2008), or similar → In order to eliminate administrative task, and improve alignment with supplier’s catalogues.
- Integrate new messages: pricat (for implantation card), if it’s possible. → In order to acquire a complete automatization of implant circuit.

• **Review** of the requirements bases of the ERP to adapt to any area of purchase: pharmacy, maintenance, services, ...