Hong Kong Hospital Authority Targets World Class eHealth: 
The role of ERP Systems in Efficient Hospital Supply Chains

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A journey to enhance patient care through collaborative risk management
Agenda

- Overview of Healthcare Services in Hong Kong Special Administrative Region
- Supply Chain Systems Development in Hospital Authority
- Traceability Capacity in Hospital Authority
Overview of Healthcare Services in Hong Kong Special Administrative Region
Health Expenditure as % of GDP

Health Expenditure in:
- 2004: HK$68Bn
- 2010: HK$72Bn

Source: OECD Health Data 2009, Health Facts of HK, Hong Kong’s Domestic Health Accounts
Public Healthcare Expenditure
(as a share of HKSAR government’s total expenditure)

Public Recurrent Expenditure by Policy Area Group
(source: HK Year Book 2009)

| 1 | Education (21.7%) |
| 2 | Social Welfare (16.8%) |
| 3 | Health (15%) |
| 4 | Support (12.1%) |
| 5 | Security (11.4%) |
| 6 | Infrastructure (6.4%) |
| 7 | Economic (4.6%) |
| 8 | Housing (4.3%) |
| 9 | Environment and food (4.2%) |
| 10 | Community and external affairs (3.4%) |

Source: HKSAR eHR Office, 2009
Landscape of Healthcare Services

Public Services
(Expenditure: HK$36.9Bn)

- Extended Care (100%)
- Secondary & Tertiary Care (~90%)
- Primary Care (~25%)

Private Services
(Expenditure: HK$34.7Bn)

- Secondary & Tertiary Care (~10%)
- Primary Care (~75%)

Source: Hong Kong’s Domestic Health Accounts 2006/07, Health Facts of Hong Kong, Development and Financing of Hong Kong’s Future Health Care 2007
Landscape of Healthcare Services

**Public Services**
(Expenditure: HK$36.9Bn)

- **Hospital Authority**
  - 41 public hospitals
  - ~27,750 hosp beds (incl. 750 in prison)

- **Dept of Health**
  - 48 Specialist clinics
  - 74 General clinics
  - 14 Chinese medicine clinics

**Private Services**
(Expenditure: HK$34.7Bn)

- 13 private hospitals
- ~3,500 hosp beds
- ~6,600 General practitioners
- ~8,000 Chinese medicine practitioners

Source: Hong Kong’s Domestic Health Accounts 2006/07, Health Facts of Hong Kong, Development and Financing of Hong Kong’s Future Health Care 2007
Changing Landscape

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4 Public-Private-Partnership Projects

- Healthcare Financing
- eHealth Record
- Filmless HA Project

Source: Hong Kong’s Domestic Health Accounts 2006/07, Health Facts of Hong Kong, Development and Financing of Hong Kong’s Future Health Care 2007
Locations of The 4 New Hospitals

- Tung Chung
- Wong Chuk Hang
- Tai Po
- Tseung Kwan O
Changing Landscape

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Dept of Health
- Hospital Authority

3 Public-Private-Partnership Projects

Healthcare Financing
- eHealth Record
- Filmless HA Project

Source: Hong Kong’s Domestic Health Accounts 2006/07, Health Facts of Hong Kong, Development and Financing of Hong Kong’s Future Health Care 2007
Healthcare Financing
(as at October 2010)

2nd Stage Public Consultation of Voluntary Health Protection Scheme (HPS)
- Standardise and regulate voluntary private health insurance
- Formulate HPS core requirements to address shortcomings of existing private health insurance
- Consider subsidizing $50Bn to HPS subscribers

Source: Food & Health Bureau, HKSAR
Changing Landscape

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4 Public-Private-Partnership Projects

Healthcare Financing
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Source: Hong Kong’s Domestic Health Accounts 2006/07, Health Facts of Hong Kong, Development and Financing of Hong Kong’s Future Health Care 2007
eHealth Record Vision in HK

Source: HKSAR eHR Office, 2009
eHealth Record Development Targets
(till 2013/14)

- Filmless project in Hospital Authority
- Radiological image sharing with private hospitals
- Pilot use of SmartID for patient authentication
- Laboratory results sharing
- Clinical Management System (CMS) adaptation basic modules and on-ramp
- Medical records sharing in Doctor Portal through CMSIII system

Source: HKSAR eHR Office, 2009
What is “eHealth”?  

\[ e\text{Health} = \]

- Electronic Health Record?  
- Telemedicine?  
- Consumer Health Informatics?  
- Mobile Health?

Supply Chain Systems Development in Hospital Authority
What have been achieved through ERP...

Connectivity with the Market???

- Enhanced internal and external communications
- Strengthened spend analysis
- Better product safety and recall management
- Improved supplier quality

Efficiency

- Automated process control
- Fortified data accuracy and security
Development of ERPs in Hospital Authority

- Product Classification & Codification Harmonization
- Technology Protocol Standardization
- ERP Implementation
- Medical Consumables and Equipment + Non-Medical items
- Assets Management
- Drugs
ERPS Implementation (since 2008)

Enhanced Decision Support

Past Focus

- Reactive
- Confrontational
- Fragmented
- Labour intensive

New Focus

- Strategic
- Embedded
- Integrated
- Streamlined & Automated

Decision Support
- Role Transformation
  - Process Re-engineering

Control

Reporting

Transaction Processing

Integrated “Procure-to-Pay” Process
We need Business Intelligence Development!!
ERPS Implementation (since 2008)

Enhanced Decision Support

Past Focus

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Confrontational
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Decision Support
Control
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Transaction Processing

Integrated “Procure-to-Pay” Process

Strategic
Integrated
Streamlined & Automated

Role Transformation
Process Re-engineering
HA-Centric
Product Codification & Classification (PCC) Model

International / Local Standards Compliance
- Support UNSPSC
- Support GS1 & HIBC
- Adopt UMDN & GMDN

Supplier Engagement
- Support data sharing
- Support item data maintenance by supplier
- Support electronic communication with supplier
  ➔ Data sharing

Operation Management
- Facilitate data analysis and e-Procurement development
- Enhance inventory management and data alignment
- Standardize and streamline business processes

Risk Management
- Facilitate response and management of product recalls
  ➔ Support integration with clinical systems and eHR

Product Codification & Classification is Central to All Integration
Traceability Capacity in Hospital Authority
What do we expect ... ?

Doctor,
where does this come from ?
Tell me please !!
Our Current Focus…

- Enhanced internal and external communications
- Strengthened spend analysis

Traceability

- Better product safety and recall management
- Improved supplier quality

Efficiency

- Automated process control
- Fortified data accuracy and security

Security
## Where we are...

### Classification –
**United Nations Standard Products and Services Code (UNSPSC)**

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Medical Devices / Consumables</th>
<th>Non-Medical Devices / Consumables</th>
</tr>
</thead>
</table>
| International Non-proprietary Name (INN) | Primary - Universal Medical Device Nomenclature (UMDN)  
Secondary – Global Medical Device Nomenclature (GMDN) | AUSLANG/In-house |

### Item Nomenclature

| Item: 3,300 | INN: 1,300 (100%) |

### Item Nomenclature

| Item: 58,248 | UMDN/GMDN: 606 (40%)  
Auslang/In-house: 1,621 |

### Item Codification

| GS1 : 21,787 (52%)  
HIBC : 20,411 (48%)  
Total : 42,198 |
Where we are…

Classification – United Nations Standard Products and Services Code (UNSPSC)

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Item Nomenclature

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??Any smarter way??

??Sustainable??

??Jobs can be shared among us??
Traceability Compliance and Sustainability Excellence

GTIN and Serial Number to identify a precise product

Our Next Target

GTIN with Lot Number and Expiration Date to identify product

Achieved

52.3% Achieved

GTIN to identify product and package

Achieved
Products Tracked and Traced
(From 1 October 2009 to 30 September 2010)

Product Categories:
- Percutaneous Transluminal Coronary Angioplasty (PTCA)
- Orthopaedics and Traumatology (O&T) Implants

No. of Procedures: 12,592
No. of Products tracked: 84,343
Total Expenditure: HK$266Mn

Are we safe?
Half baked?
Our Next Steps…

• Establishment of policy over policies on Product Tracking and Tracing

• Traceability on patients in the event of product recall
Current Difficulties…

- Swift technology development
- Clinical & non-clinical interfaces
- Lack of globalized legislative functions
- Non-standardization of nomenclature
- Catalogue Management

Key areas: Efficiency, Traceability, Security
How do we track and trace in a product recall?
A Recall of Hip Replacement System

- Field Safety Notices/Alerts from MHRA (UK), MDCO (HK), Supplier
- Direct alerts to clinicians concerned by Supplier
- Voluntary recall by Manufacturer (5 months later) WHY???
- 8 hospitals; <30 patients affected in Hong Kong
- Product and Patient tracking (2 weeks)
A Recall of Hip Replacement System

- Product and Patient tracking (2 weeks)
  - Sales record (supplier and ERPS, ~1 week)
    - production code
    - item description
    - hospitals/location
    - delivery date
    - quantity
    - PO/invoice no., surgery date/no.
  - Procedure record (PTNT System and OT Information System, ~1 week)
    - patient name
    - surgery code
    - history
Lessons Learnt...

- Timely update from regulatory bodies
- Complete sales history from distributor/supplier
- Clear identification of items (i.e. model no./description)
- Data obtained from different sources and systems
- Cross verification of data
- A project with multiple stakeholders and information sources

- Regulatory Bodies
- Manufacturer
- Distributor/Supplier
- Hospital Authority
  - Procurement
  - Quality & Safety
  - Clinicians
  - OT Staff
Ideal World…

Integrated Systems
Can anyone help??

[Image of a cartoon with two frogs in a pot, one frog is thinking, and another character spraying water with a fire hose.]

[Logo of GS1 Healthcare in the top left corner.]
Should we...
Should I follow him?

How far can I hit??
Real Collaboration...

Ask not what your country (partner) can do for you, ask what you can do for your country (partner)

John F. Kennedy
Can we...