Healthcare Transformation of Private Hospital (St. Paul’s) in Hong Kong

Speaker: Mr. Samuel Cheung
General Manager
Agenda

- Background
- Our Marathon
- HIS Transformation
- Implementation
- Sharing & Challenges
- Road Ahead
Background (1/3)

- Hong Kong Healthcare Reform and Healthcare Finance Reform demands e-Patient Data follows Patients across service providers and allows data exchange.

- Service Providers include community physicians, aged homes, community allied health, private and public Hospitals, fund providers, banks and Government Authorities (System Thinking).
While protecting patient privacy, the Healthcare Standards demand **controlled** data **Transparency** for quality assurance.

Strategic Focus on Patient Safety demand **live integrated patient data** at **Point of Care** for timely clinical decision, risk management and audit purposes.
Background (3/3)

- High Quality of Patient Services demand more **process automation** and reengineering, **friendly user interfaces** to manage complex clinical data and to encourage compliance.

- Optimization of financial efficiency
- In Consultation of experts from Hospital Authority & users to identify needs, standards & trends
Clinical Governance

Patients

Customers

Internal Customers

Partners

Corporate Governance
Point of Care
Services to customers
Data to users

Full Picture
Integrated
Interfaced

Web-based
Openness
Live Data
Bed-Side Terminal

Auto ID - Barcode Process integration

Hospital Informatics
Our Marathon

2009 Move in Phase 1 SPH (Block A –20 FL)
2009 New Tele-communication System
2009–2012 New Web-solution
2014 Phase 2 SPH (Block B– 20 FL)

2009–2011 New Facilities & Centres
MIS Operation Theatre, ICU, Urology Rehabilitation, Pathology, Cardiac OPD, O&G, Radiology, Endoscopy Health Promotion

Additional net gain of over 500 new staffs
Enhancement of functional integration
Our Marathon

To cope with the requirements from Patients and Healthcare Industries expansion in the past 3 years and coming years:

SPH decides to get ready for the future

In 2009, We have started to implement an Open & web-enabled fully integrated and interfaced system in THREE phases Five Years Program till 2013

In 2011, we are at Foundation Stage with Phase 1–Go-Live in Dec 2010
Our Metaphor of HIS Transformation

The Nervous System is network of Specialized cells that communicate Information about an organism's Surroundings and itself. It processes this Information and causes reactions in other Part of the body.

We think Healthcare Compliance, System and Integration.

The Hospital Informatics and System is Network of OU (operating units) that Communicate live information about the patient and hospital data. It integrates these data and helps professionals to make operation and clinical decisions interdisciplinary towards patients and organization.
HIS Transformation (1/2)

- Change from Small operation to Enterprise operation
- Implement “Patient Centric” and “Point of Care” operation models
- Adopting Clinical “Best Practice”
- Integrated inter-departmental operations
- Improve efficiency for both clinical operations, hospital administrative and back-office operations.
HIS Transformation (2/2)

- Optimize the operation efficiency such as “time-to-discharge” cycle
- Build Foundation System that able to exchange data with Hospital Authority (HA), and Business Partners
- In compliance to standards – HL7, ICD10, DICOM3, etc.
Implementation


Project Preparation

Define Project Objectives
Determine Implementation Strategy
Formulate Project Organization
Define Preliminary Project Plan
Determine Hardware Requirements

SHIPA

Patient Management (PAM)
Patient Billing (PAB)
Clinical Process (CP)
ePrescription / Dispensing / eMar
RIS-PACS
Financial (CO/FI/AR/AP)
Material Management (MM)

SHIPB

OT Scheduling
Health Archive
Clinical Checking
Enterprise Asset Management (EAM)

SHIPC

Nursing
Pathways
Cardiology / Gestro
Occupancy Management
Business Intelligent (BI)
Laboratory Information System

Evaluation & Improvement

Auto-ID
UI +
Partners

St. Paul's Hospital
Implementation

SPH - HIS
Hospital Information System

HL-7 and Billing Interface

Patient Queuing System
Bedside Terminal System
Kitchen Meal Ordering system
Cashier Desk Terminal System
Self-Service Payment Kiosk

RIS interface
Bar Code Interface
Messaging and Device Interface
Staff/Doctor Interface
Human Resource Management System HRMS

RIS and PACS
Bar Code Devices Input

Nursing Call System
PABX Telephone System
Fax Server / E-mailing System
Door Access Card Systems
Desktop Security Management System
Internet/Data Security system

Drug Database FDB
SNOMED-CT
ICT-10 Diagnosis code

Lobby Information Display System

Back Office Administration Systems

St. Paul’s Hospital
<table>
<thead>
<tr>
<th>Present</th>
<th>Next Step</th>
<th>Future</th>
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<tbody>
<tr>
<td><strong>Inpatient &amp; Outpatient Pharmacy</strong></td>
<td><strong>Decision Support with Clinical Checking (Integration with FDB)</strong></td>
<td><strong>Point of Care mobile solution with Smart UI</strong></td>
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<td>- Centralized Pharmacy drug dispensing, Pick List &amp; Drug label printing</td>
<td>- (i.e. Drug-drug-interaction module (DDIM); Drug-Allergy-Module (DAM); Drug-Disease-Contradiction Module (DDCM); Duplicate Therapy/Duplicate Ingredient Module and more...)</td>
<td>- Unit Dose Packaging &amp; Distribution System</td>
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<td>- OP drug administration right patient checks with bar-coding</td>
<td>- Harmonize Stat Medication process for Drug administration &amp; documentation</td>
<td>- Further extend drug administration 5 rights checking with the latest technologies</td>
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<td>- Material Management Integration</td>
<td>-</td>
<td>- Introduce value-added functions/enhancements for process optimization</td>
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<td>- Billing Integration, Billing based on Dispensing</td>
<td>-</td>
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<td>- e-MAR</td>
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<tr>
<td>- CPOE (computer physician order entry)</td>
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Functions In-use

- Centralized Pharmacy drug dispensing, Pick List & Drug label printing
- OP drug administration right patient checks with bar-coding
- Material Management Integration
- Billing Integration, Billing based on Dispensing
- e-MAR
- CPOE (computer physician order entry)

Functions Available

- Decision Support with Clinical Checking (Integration with FDB)
- Harmonize Stat Medication process for Drug administration & documentation

St. Paul’s Hospital
## Implementation – Clinical Process Change

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
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<tr>
<td><strong>Paper Medical Forms &amp; Record</strong></td>
<td><strong>Seamless Integration &amp; real time information flow</strong></td>
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<tr>
<td>- Preregistration</td>
<td>- Integrate whole clinical process accross modules</td>
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<td>- Appointment</td>
<td>- Coordinates clinical process among service points</td>
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<td>- Service request</td>
<td>- Enhance Patient Care &amp; Patient Safety</td>
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<tr>
<td>- Medical documentation</td>
<td>- Electronic patient record</td>
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<tr>
<td>- Silo departmental HIS solution</td>
<td>- Electronic preregistration, appointment, service ordering</td>
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<tr>
<td>- Inventory</td>
<td>- Electronic documentation on diagnosis, risk factor, service status, material consumed, progress documentation &amp; form</td>
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<tr>
<td>- Billing</td>
<td>- Enhance efficiency</td>
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<tr>
<td>- Medication</td>
<td>- Integrated clinical work station to complete whole patient related clinical process</td>
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<td>- Ward documentation work station supports clinical tasks management according to treatment context</td>
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Implementation—*Clinical Process Change*

**Previous Process**
- Paper process
- In-house department solution

1. Preregistration & Service Request
2. Appointment scheduling
3. Nursing & Ward Round
4. Medication
5. Patient record
6. Clinical Documentation
7. Discharge Process
   - Integrated CWP & DWS

**System Process**
- Electronic Clinical Order
- Planning Grid
- Patient centric appointment slip
- Clinical Work Station
- DWS
- e-Prescription
- e-Mar
- Patient Organizer
- Clinical Overview
- Diagnosis, risk factor, performed serv.
- Progress Note & PMD
- Integrated CWP function
- DWS

**St. Paul's Hospital**
Bed-Side Terminal
Sharing & Challenges

Change Management
1. Workflow Reengineering
2. Workflow Standardization
3. Workflow Documentation

Training Strategy
1. Expectation– short term vs. long term
2. Expectation– Features vs. Benefits
3. 50% of manpower are new staff
4. Strategic & Critical attention (Coaching)
Sharing & Challenges

Change Resistance
1. Hidden Cost & Damages
2. Lost Confidence & Sustainability
3. Persistent Communication & Education

Integration is the KEY challenges
1. Process Relationship at multi-layers
2. Data Migration, Data integrity
3. Challenges in system diagnosis
Sharing & Challenges

Risk Management
1. System Level: Planned Downtime & unplanned
2. Anticipate Risks and regular risk assessment
3. Operation Level: Clinical & Operation Risk

Project Management
1. Top Management Persistent Commitment
2. Quality Team of Consultants, CIO & team & Clinical team with Experience of large Scale System Implementation
3. Critical Planning on Monitoring & Communication methodology
Sharing & Challenges

Over 100 Hospital Professionals & Consultants (Project Teams) work extensive long hours over 18 months to come to where we are! Patience & Contribution of over 900 users… We Salute to all of them!

We are learning together…
Road Ahead

A. Fix & Correction
B. Fine Tuning
C. Enhancement
D. Automation
E. Mobility
F. Integration with external partners
Thank You