Singapore’s NEHR- the Journey to 2011

Dr Sarah Muttitt
Chief Information Officer
Information Systems Division
MOH Holdings, Singapore

American Chamber of Commerce
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Getting ready for the “silver tsunami”

Pressures on Singapore healthcare system set to increase

By 2030 ➢ 1 in 5 Singaporeans will be over 65
By 2050 ➢ Singapore will be among the world’s demographically oldest countries with median age of 54

“A Different Pattern of Healthcare”

- Integrated healthcare delivery system
- Appropriate care from the right site
- Better allocation of resources
- More cost-effective treatment and care in the healthcare continuum
Healthcare landscape of the future

Strategic vision of patients moving seamlessly across the healthcare system, receiving coordinated patient-centric care at the most appropriate settings.

Enabled by the National Electronic Health Record (EHR)
Vision of “One Patient, One Record”

The EHR is an integrated healthcare record centered on each person. It extracts and consolidates in one record, all clinically relevant information from their encounters across the healthcare system throughout his/her life.

Secure “real-time” access to patients’ EHR by authorised clinicians and healthcare providers:

- enable greater coordination and informed decision-making,
- resulting in more accurate diagnosis, better treatment and patient-centric integrated care.
Existing eHealth Systems in Singapore

**Multiple EMR Systems**

**Multiple Lab & Radiology Systems**
- 2 public healthcare clusters
  - NHG and SingHealth hospitals, polyclinics and specialist clinics
- Ministry of Defence (MINDEF)

**Minimal EMR Systems**
- Private GPs (approx 300 out of more than 2,000 have a CMS)
- Community Hospitals
Information Systems Division (ISD)

Provides leadership in setting strategic direction for Singapore’s national health informatics strategy

HIT master planning supports the national agenda for an Electronic Health Record by 2010 by facilitating strategic alignment at various Levels of the Healthcare System
Diverse membership of CAG and taskforces ensure national strategy is representative of broader clinical community interests
Interoperability – Enterprise Architecture

Pragmatic approach adopted to deliver an Enterprise Architecture that is

- **Implementable**
- **Fit-for-purpose** i.e. delivering value for clinicians in the near term
- **Future-Proofed** to support longer term vision for healthcare, analytics and research
Interoperability – Standards

Establishing a suite of standards that are:

- Clinically-Driven
- Easy to Use
- Internationally Recognised

...to ensure clinical data included in the EHR can be:

- Shared and exchanged safely and reliably for the monitoring and care of patients
- Used meaningfully for secondary purposes including production of clinical knowledge

Global Standards Engagements

- HL7 (Health Level Seven)
- IHTSDO (International Health Terminology Standards Development Organization)
- ISO TC215 on Health Informatics
- IHE (Integrating the Health Enterprise)

Standards also provide a platform for long term semantic interoperability and research informatics
Change Management

“"It simply doesn’t make sense that patients in the 21st century are still filling out forms with pens on papers that have to be stored away somewhere."" - US President Barack Obama, American Medical Association Annual Conference, 15 June 2009

Need to manage change as large majority of clinicians learnt their professions in the absence of automation, and continue to practice without it.

<table>
<thead>
<tr>
<th>Concerns</th>
<th>Programmes &amp; Initiatives</th>
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<tbody>
<tr>
<td>Privacy of patient information</td>
<td>Privacy and Security Framework</td>
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<tr>
<td>Impact on efficiency of work</td>
<td>Process redesign &amp; workflow integration</td>
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<tr>
<td>Cost of automation</td>
<td>Subsidies and incentives</td>
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<tr>
<td>Quality of available solutions</td>
<td>Common functional requirements definition</td>
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<td>How to make transition from paper-based to e-documentation</td>
<td>Peer network &amp; transition support services</td>
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NEHR Programme Status Update

**March 2009**
Expression Of Interest

**July 2009 – Sept 2009**
Proof Of Concept

**October 2009**
IAA/DPC papers lodged for approval

**25 June 2010**
Award Contract to Implement NEHR to Accenture led consortium
Overview: NEHR Phase 1 Capability Map

Summary View

- Patient Demographics
- Primary Care Provider / Care Coordinator
- Allergies / Immunizations
- Diagnoses
- Medications
- Events
- Invest.

Screening

- MINDEF

Event Summaries

- Inpatient
- ED
- SOC
- Comm Hosp
- Polyclinic

Basic Visit Information only for ED, SOC and Polyclinic

Reports

- Lab
- Rad Reports
### Overview of Planned NEHR Phase 1 Implementation Footprint

<table>
<thead>
<tr>
<th>Type</th>
<th>Priority 1 Go-Live</th>
<th>Priority 2 Go-Live + 3 months (Cumulative)</th>
<th>Priority 3 Go-Live + 12 months (Cumulative)</th>
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</thead>
<tbody>
<tr>
<td>RH (including Specialist Centres)</td>
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<td>4 to 5</td>
<td>All (including Specialist Centres)</td>
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<td>2</td>
<td>3</td>
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<tr>
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User Volumetrics has taken into account **doctors, pharmacists**, a proportion of **nurses** and a proportion of **allied health** professionals.
The promise of the EHR

Better Clinical Care and Streamlined Workflows

Patient information at the point of care
- Supports clinical decision making and workflows
- Enables providers involved in patient care journey to work as a team
  - Seamless transition of patient into different care settings
  - Better management of chronic illnesses
- Enables greater patient participation and supports self-help

Better Practices and Greater Patient Safety

Shared patient’s clinical records
- Enforces better prescribing practices with peer reviews
- Reduces human errors related to handwritten records
- Takes the guesswork out from the lack of past records
- Prevents duplicate and unnecessary tests; and adverse drug events
Thank You

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