IPS-CSC Forum

17 August 2010

"Enhancing Public Service Through Policy Automation"

Ballroom 3, Orchard Hotel

Institute of Policy Studies

Civil Service College Singapore

IPS-CSC FORUM
17 Aug 2010

Better patient care and safety through automated Business Rules Management System

HO KHAI LENG

IHiS
Integrated Health Information Systems

Agenda

- About us
- Getting the definition out of the way
- Improving Healthcare
- Case Studies
- Learning Points

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About IHIS

- Integrated Health Information Systems (IHIS)
- Wholly owned by MOH Holdings, Singapore
- Provides IT services to all public sector healthcare institutions in Singapore
- Responsible for operations, project planning, execution and integration of healthcare IT solutions
- More than 600 healthcare IT professionals

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About NHG

- National Healthcare Group (NHG), Singapore
- Integrated network of primary healthcare polyclinics, acute care hospitals, national specialty centres, including
  - Tan Tock Seng Hospital
  - Institute of Mental Health
  - National Skin Centre
  - 9 Polyclinics
- 9,000 Staff Strength
- 1,100 acute beds + 1,900 psychiatric beds in service
- 2.5m polyclinic attendances

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About NUHS

- National University Health System (NUHS), Singapore
- Excellence in clinical care, translational clinical research and education
- Comprises
  - National University Hospital
  - National University of Singapore Yong Loo Lin School of Medicine
  - National University of Singapore Faculty of Dentistry
  - National University Cancer Institute, Singapore
  - National University Heart Centre, Singapore
- 7,000 Staff Strength

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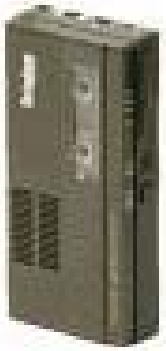
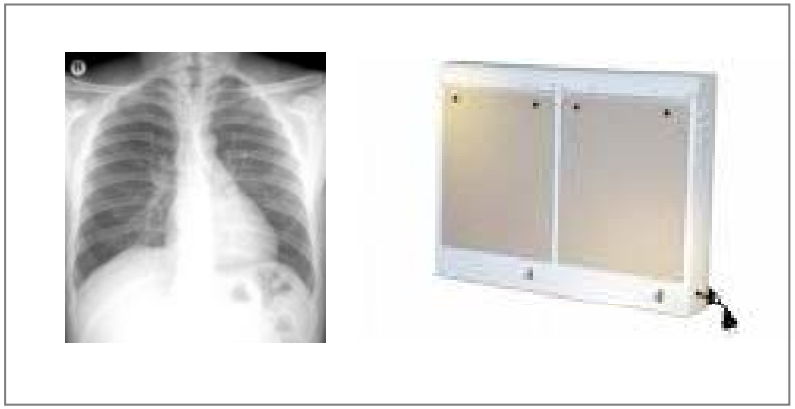
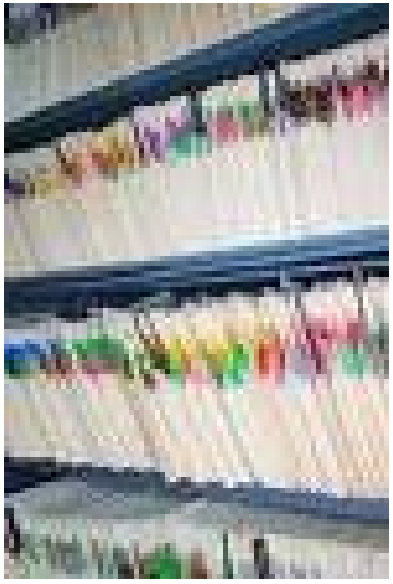
Hospital – Then







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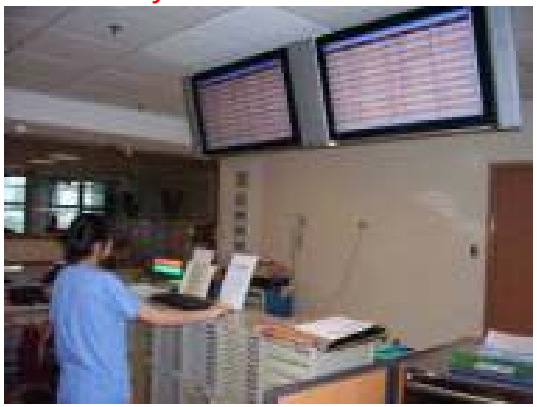
The Digital Hospital

Clinical Systems

Consultation Room

Digital diagnostic imaging



Patient Dashboards

Hand-held Devices

Laboratory automation

Refrigerated Stockyard

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Getting the definition out of the way

Policy Automation

A suite of software products for modeling and deploying business rules within enterprise applications

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Business Rules

Evidence-based Medicine - apply the best available evidence gained from the scientific method to clinical decision making

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Clinical Decision Support Systems

Link health observations with health knowledge to influence health choices by clinicians for improved health care

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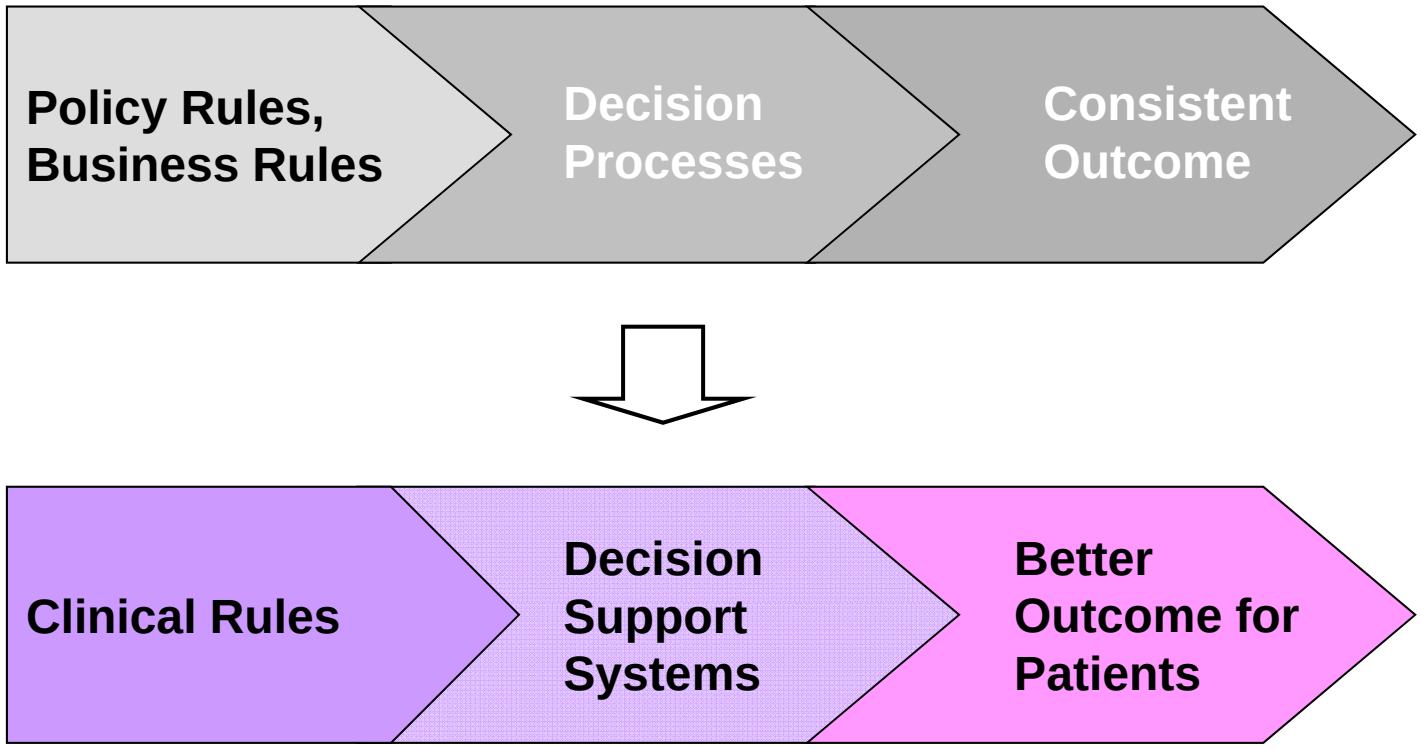
Benefits



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Clinical Decision Support Systems

- Evidence-based Medicine
- Multi-disciplinary, multiple co-morbidities
- Patient-specific
- Outcome focused

- Issues
  - Care is complex
  - Information often not available to those who need it when they need it

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Case Studies

- ARUS-C
  - Anti-microbial Resistance and Utilisation Surveillance, and Control
- ADEAS
  - Adverse Drug Events Alert and Surveillance System
  - Now renamed Clinical Decision Support System (CDSS)

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ARUS-C

- **Background**
  - **Antibiotic resistance poses a huge challenge. It results in increased mortality, increased length of hospitalisation and increased cost**
  - **Inappropriate use of antibiotics has been associated with emergence of resistant traits**

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ARUS-C

- **What it Does**
  - **Develop hospital guidelines for antibiotic use**
  - **Provide electronic decision support for antibiotic prescribing**
  - **Reduce unnecessary and inappropriate antibiotic use**
  - **Track antibiotic use and its effect**
  - **Monitor compliance**

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ARUS-C

TODAY
we set you thinking

Promising results for TTSH's antimicrobial programme

Hospital able to reduce cost by prescribing appropriate antibiotics at the right dosage and duration

05:55 AM Jun 10, 2010

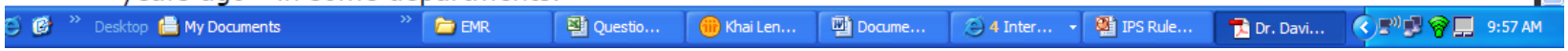
by Alicia Wong

SINGAPORE - Over a year, it has seen patients recover faster and get discharged sooner.

This comes with doctors being able to better prescribe appropriate antibiotics at the right dosage, for the right duration. As a result, some bacteria have also become less resistant to medication.

According to Tan Tock Seng Hospital, it is the first here to have a hospital-wide Antimicrobial Stewardship Programme, which was launched last year and is co-funded by the Health Ministry.

Other hospitals conduct such programmes - which began in the United States over 10 years ago - in some departments.



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ADEAS (CDSS)

- **Background**
  - **Adverse Drug Events Alert and Surveillance System (ADEAS)**
  - **Aims to improve the safe use of medicines through medication error and adverse drug event detection, prevention and surveillance**
  - **Automates the detection process by congregating and cross matching with electronic medication orders, laboratory results and diagnosis codes, patient demographics and medical records using computer algorithms**

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ADEAS (CDSS)

- What it Does
  - Develops hospital guidelines for adverse drug event alert
  - Highlights potential adverse drug events (ADE)
  - Alerts doctors during drug prescribing should there be a potential ADE

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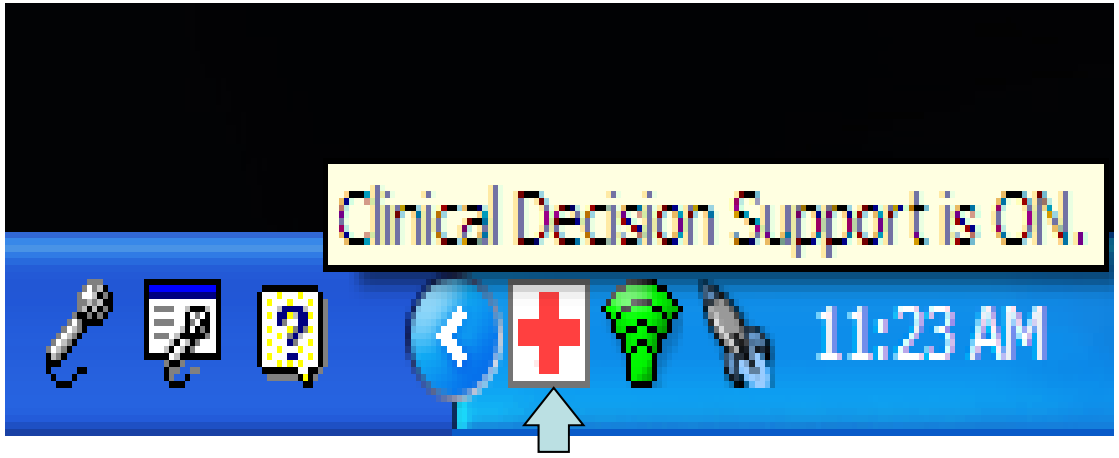
ADEAS (CDSS)

CDSS Desktop Application is similar to an Anti-Virus program that runs silently on the system tray…



… listening to events happening on the electronic Inpatient Medical Record (eIMR)

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Learning Points

- **Governance**
  - Clinical rules – not legislated or published
  - Who oversees the rules
- **Clinical Challenges**
  - Biological systems are complicated
  - Need to consider a patient's symptoms, medical history, family history and genetics, and
  - Need to consider historical and geographical trends of disease occurrence, and published clinical data on medicinal effectiveness
- **Maintenance**
  - Rules are current
  - Rules do not conflict

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Thank you

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