

HA IT Services and eHR Office present

# Radiological Image Sharing Seminar

Tuesday 4<sup>th</sup> October 2011

Lecture Theatre, CHP

**醫健通**  
**ehealth**

香港特別行政區政府 HKSAR GOVT

食物及衛生局 電子健康記錄統籌處  
eHealth Record Office, Food and Health Bureau

# Electronic Health Record (eHR) Sharing Programme



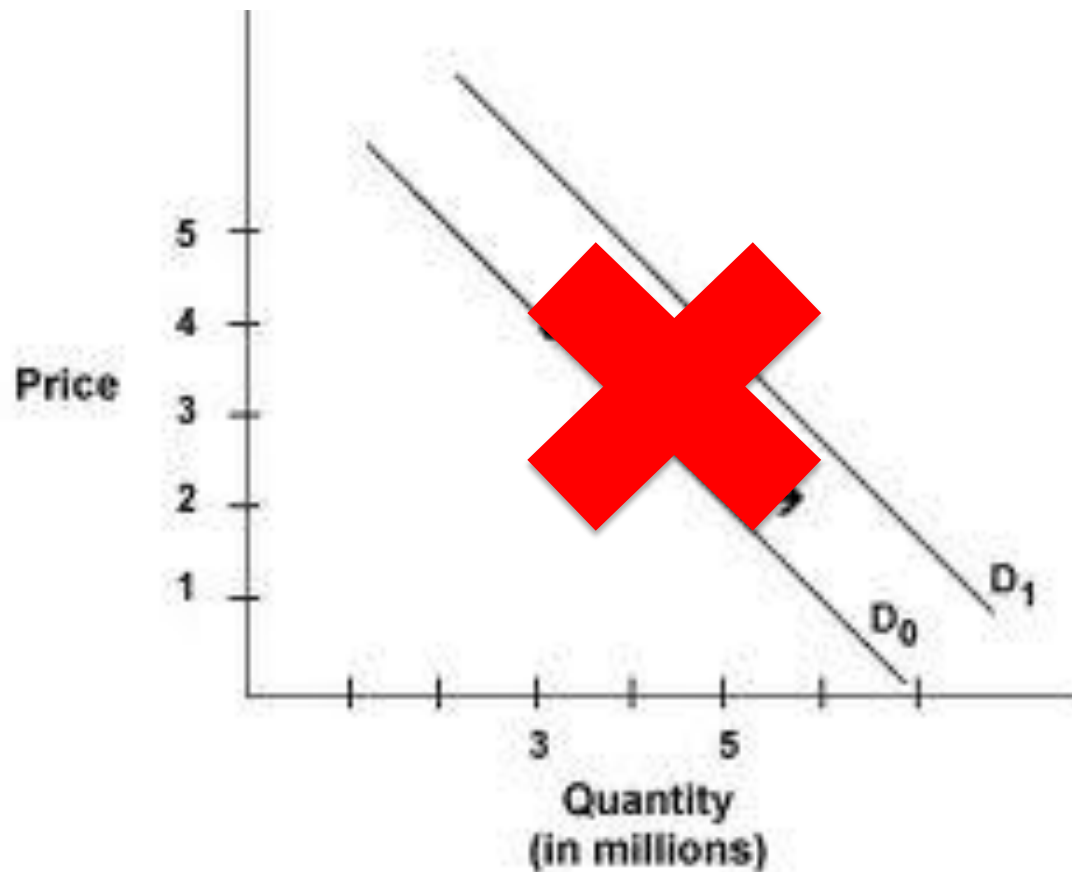
香港特別行政區政府 HKSAR GOVT

食物及衛生局 電子健康記錄統籌處  
eHealth Record Office, Food and Health Bureau

[www.ehealth.gov.hk](http://www.ehealth.gov.hk)

# This presentation

- Dr Jonathan Poon
- Health Informatician
- Subject Officer for this Pilot Project
- Topic:
  - Background & Business Case
  - Current progress of Radiology Image Sharing Pilot
  - Details on Enrolment

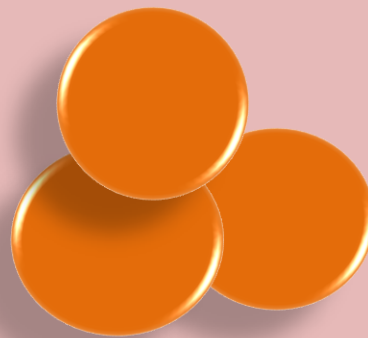


**Asymmetry of Information**

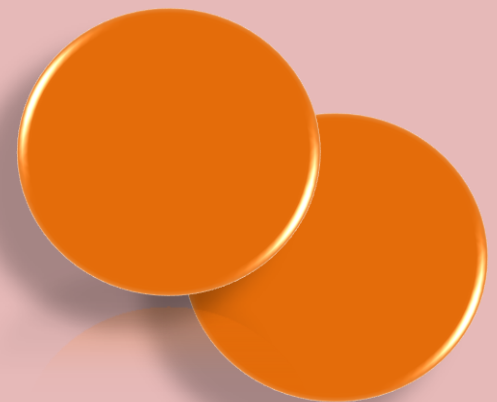
# Public



# Private



Clinics



Hospitals

# Public

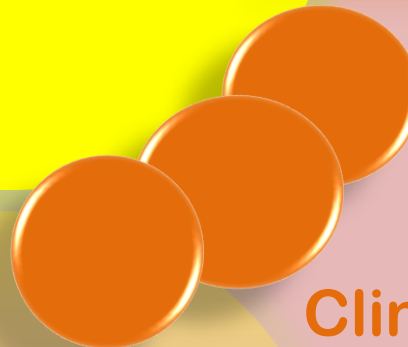
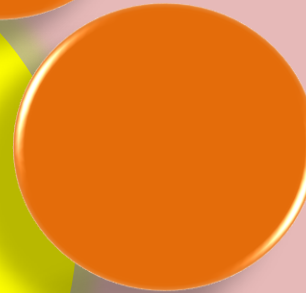
# Private



e-HR  
Sharing System



Hospitals



Clinics

# Governance

- Secretary for Food and Health
- Food and Health Bureau
- eHR Office
- HA appointed as Technical Agent

- Much more than an IT Project
- Legal issues
  - Ownership of Patient Data
  - Copyright of Medical Records
- Privacy issues
  - Access and of patient records
- Security issues
  - Safeguarding from intrusion
  - Data integrity
- Institutional issues
  - Governance

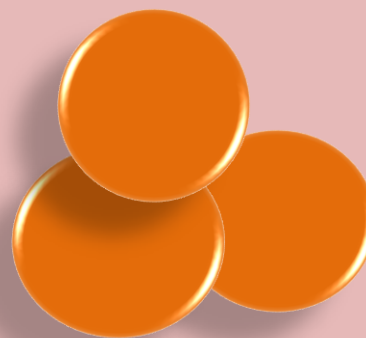


# Public

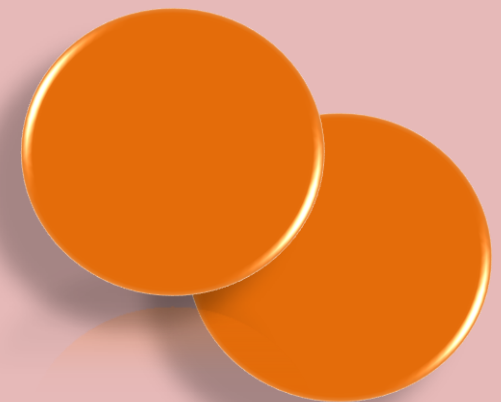
# Private



In-patient D/C Summary  
Allergy Data  
Demographic Data  
Lab Result  
Radiology Reports  
Procedure Record  
Prescribed Drug Record  
Dispensed Drug Record



Clinics



Hospitals

# Pilot Projects

## ***Public Private Interface – Electronic Patient Record Sharing Pilot (Launched in Apr 2006 )***

- Participating private healthcare providers (HCP) to view their patients' medical records kept at the Hospital Authority (HA) (i.e. “one-way viewing”)
- Pilot project to test the feasibility and acceptability of eHR sharing
- Enrollment figures as at 1<sup>st</sup> August 2011:
  - more than 159,000 patients
  - more than 2,293 healthcare professionals
  - All 13 private hospitals
  - More than 290 centres from 43 private or non-government organisations providing healthcare services

# Public



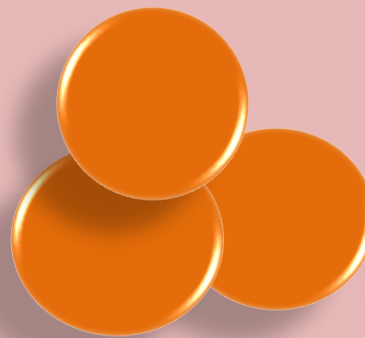
醫院管理局  
HOSPITAL  
AUTHORITY

HA

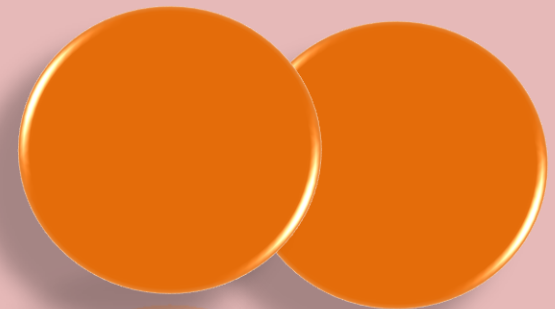
DH

# Private

Discharge Notes  
Consultation Notes  
Allergy Data  
Radiology Result  
Lab Result  
Procedure Record  
Drug Record



Clinics



Hospitals

***CMS on-ramp***  
***CMS Adaptation***

# Public

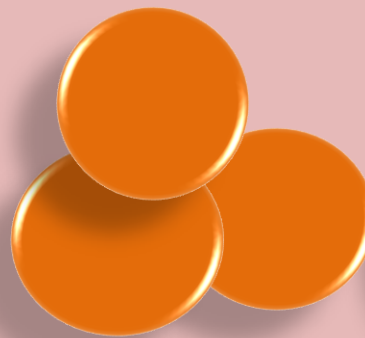


醫院管理局  
HOSPITAL  
AUTHORITY

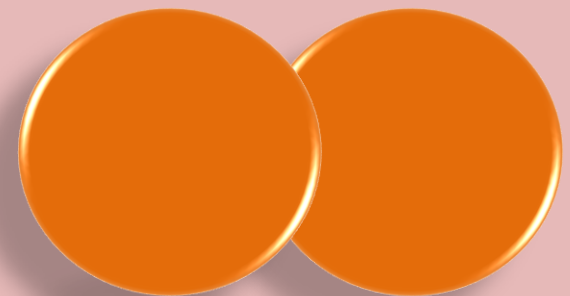


# Private

Discharge Notes  
Consultation Notes  
Allergy Data  
Radiology Result  
Lab Result  
Procedure Record  
Drug Record



Clinics



Hospitals

# Pilot Projects

## *Other Public Private Partnership*

- Participating HCPs are allowed to upload their patients' clinical information, and view the patients' medical records kept at HA (i.e. "two-way sharing")

<b><i>Radiological Image Sharing Pilot Project</i></b>	<b><i>Cataract Surgeries Programme</i></b>	<b><i>Tin Shui Wai Primary Care Partnership Project</i></b>	<b><i>Shared Care Programme</i></b>	<b><i>Haemodialysis Public-Private Partnership Programme</i></b>	<b><i>Patient Empowerment Programme</i></b>
<b>Jan 2009</b>	Feb 2009	Jun 2008	Mar 2010	Mar 2010	March 2010
A total of 10,741 studies have been captured and shared in the HA electronic-Patient Record (as of 1 <sup>st</sup> Apr 2011).	14,250 patients and 95 private doctors (as at Mar 2011)	1,597 patients and 10 private doctors (as at Mar 2011)	103 patients and 62 private doctors (as at Mar 2011)	71 patients and five community haemodialysis service providers (as at Mar 2011)	8,221 patients (as at Mar 2011)

A grayscale photograph of a person sitting on a wooden pier or beach chair. Their legs are extended, and their feet are in the shallow water. A pair of flip-flops is on the pier near their feet. The background shows the ocean with gentle waves.

# Radiological Image Sharing Pilot Project

Business Case



[http://ha.home/visitor/](#)

File Edit View Favorites Tools Help

Favorites
 Suggested Sites
 Bank
 Bible and Hymns Gp
 camp site
 Chinese font
 Medical
 PBRC
 Presentation skill
 Cebu Pacific Air - It's time e...
 Free Hotmail
 七天天氣預報

HA Intranet - ha.home

ha.home
 Search
 Go
 Advanced Search
 Mon, August 16, 2010

Our Internet
 Home
 Download
 Staff Corner
 Online Services
 ESD
 VNC
 Webmail
 HASLink
 eLC
 eKG
 IDCTC
 Sitemap
 Help

Thematic View
 Functional View

Corporate Information
 Business Support Services
 Capital Planning
 Finance
 Group Internal Audit
 Human Resources
 Information Technology
 Medical Services Development
 Professional Services
 Public Affairs
 Quality and Safety
 Statistics & Research
 Clusters & Hospitals
 Public-Private Interface
 Sharing of Private Practitioners' Information / Private Healthcare Services
 PPI Initiatives
 Suggestion Box
 What's New
 Useful Links
 Strategy & Service Planning

1 / 2
 115%
 Find

## List of Private Hospitals and Centres Providing US Scan

### 設有超聲波掃描的私營醫院及中心一覽表

Approximate Price Range in Private Hosiptals 私營醫院大約收費 (\$HK) : 440 - 3692

Approximate Price Range in Private Centres 私營中心大約收費 (\$HK) : 318 - 3696

(List in Alphabetical Order)

#### Hong Kong 港島

Private Hospital 私營醫院	Address 地址	Telephone No. 電話號碼	Fax No. 傳真號碼	Approximate Price Range 大約收費(\$HK)

#### Private Centre 私營中心

Private Centre 私營中心	Address 地址	Telephone No. 電話號碼	Fax No. 傳真號碼	Approximate Price Range 大約收費(\$HK)

#### Kowloon 九龍

Private Hospital 私營醫院	Address 地址	Telephone No. 電話號碼	Fax No. 傳真號碼	Approximate Price Range 大約收費(\$HK)

#### Private Centre 私營中心

Private Centre 私營中心	Address 地址	Telephone No. 電話號碼	Fax No. 傳真號碼	Approximate Price Range 大約收費(\$HK)

#### New Territories 新界

Private Hospital 私營醫院	Address 地址	Telephone No. 電話號碼	Fax No. 傳真號碼	Approximate Price Range 大約收費(\$HK)

#### Private Centre 私營中心

Private Centre 私營中心	Address 地址	Telephone No. 電話號碼	Fax No. 傳真號碼	Approximate Price Range 大約收費(\$HK)

- 51587125 hits -

Local intranet
 100%



# Select “Private” Discipline under RADIOLOGY

The screenshot shows a software window titled "Add Ix" with a teal header bar. The window is divided into several sections:

- Header Bar:** Contains the title "Add Ix" and a close button (X).
- Left Panel:** Features a yellow button labeled "By Discipline". Below it, a "Discipline" dropdown menu is open, displaying a list of medical disciplines. The "Private" option under the "RADIOLOGY" section is highlighted in blue. The list includes: All, ---ALLIED HEALTH---, Dietetic, MSW, OT (General), OT (Psychiatric), Physiotherapy, Prosthetic&Orthotic, Speech Therapy, ---CONSULTATION---, Consultation, ---Endoscopy---, Endoscopy, ---LAB---, A Histopathology, B Blood Bank, C Biochemistry, H Haematology, M Microbiology, ---RADIOLOGY---, Angiography&Vas IR, Breast Imaging, CT Scan, Fluoro/Contrast XRay, MRI, Non-Vascular IR, Nuclear Medicine, Plain X-Ray, Private, and Ultrasound Scan.
- Top Right:** Includes a search bar labeled "Ix" and a "Search" button.
- Right Panel:** Contains two empty boxes labeled "New Ix" and "Urgent".
- Bottom Bar:** Includes a "Folder View" checkbox, navigation arrows, and buttons for "Add Ix", "Edit", and "Delete".
- Footer Bar:** Contains radio buttons for "By Department", "By User", and "By Discipline" (which is selected). It also includes buttons for "Save and Print Label/Job Sheet", "Save and Print Reminder", "Save", and "Cancel".

# Select Modality

Add Ix

By Discipline

Discipline: Private (Non-HA)

Ix

Search

Ix	Site/Item (allow for free text input)	Contrast	Service providers list
<input type="checkbox"/> CT Scan		<input type="radio"/> Yes <input type="radio"/> No	CT Scan
<input type="checkbox"/> MRI		<input type="radio"/> Yes <input type="radio"/> No	MRI
<input type="checkbox"/> PET-CT Scan		<input type="radio"/> Yes <input type="radio"/> No	PET-CT Scan
<input type="checkbox"/> Ultrasound Scan			Ultrasound Scan
<input type="checkbox"/> Plain X-Ray			Plain X-Ray
<input type="checkbox"/> Breast Imaging			Breast Imaging
<input type="checkbox"/> Fluoro/Contrast X-Ray		<input type="radio"/> Yes	Fluoro/Contrast X-Ray
<input type="checkbox"/> Nuclear Medicine			
<input type="checkbox"/> Angiography&Vas IR		<input type="radio"/> Yes <input type="radio"/> No	
<input type="checkbox"/> General IR			

Pay Code : EP1

☐ Folder View

◀ ▶

Add Ix

Edit

Delete

☒ By Department ☐ By User ☒ By Discipline

Save and Print Label/Job Sheet

Save and Print Reminder

Save

Cancel

New Ix

Urgent

# Enter required fields

Clinical Information	
1) Clinical Information :	<div></div>
<hr/>	
Patient Information	
1) LMP :	<div></div>
2) Pregnancy :	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown
3) History of Allergies :	<input checked="" type="radio"/> Yes <input type="radio"/> No <div>Alert</div>
4) History of Asthma :	<input type="radio"/> Yes <input type="radio"/> No
5) Steroid premedication prescribed :	<input type="radio"/> Yes <input type="radio"/> No
6) History of Reaction to Contrast Media :	<input type="radio"/> Yes <input type="radio"/> No
7) Patient on Metformin :	<input type="radio"/> Yes <input type="radio"/> No
8) Latest Serum Creatinine :	<div></div> <div>Retrieve latest result from ePR</div>
9) Previous operation relevant to this scan :	<div></div>
<hr/>	
Request Information	
1) Priority :	<input type="radio"/> Urgent <input checked="" type="radio"/> Routine
2) Private Hospital or Centre :	<div></div>

Reset All

Save

Cancel

# Standard referral form for private radiology

## Virtual Hospital REQUEST INFORMATION SHEET



**Name :** WONG, GUAVA (黃石榴)

**HKID :** M047521(7)

**DOB :** 23/02/1983

**Age :** 25y **Spec :** MED

**Episode No:** HN05000193(T)



**Sex :** F **Requested Loc :** VH//5A

**Request Number:** VH OR080001268U

**Request Date :** 19/06/2008

**Requested By :** @CMSIT (CMS IT VH1) 2300 0000 (Medical Officer)

**Remark :** 1.Private Hospital/Centre: Hong Kong Sanatorium & Hospital 養和醫院  
Address: Department of Diagnostic and Interventional Radiology 診斷及介入放射部,  
1/F., Li Shu Pui Block, No.2 Village Road, Happy Valley, HK 香港跑馬地山村道二號  
Tel. No.: 28358900  
Fax No.: 28927530  
2.病人同意選擇在以上私家診斷中心接受掃描檢查及同意支付所需費用  
Patient agrees to have the CT examination done in the above private hospital / centre  
and pay for the charges

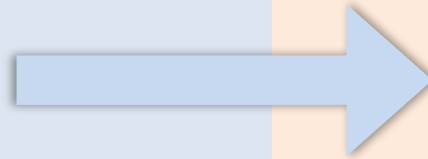
**Drug Allergy:** (1)PANADOL [PARACETAMOL]

**Request Group :** Private Radiology

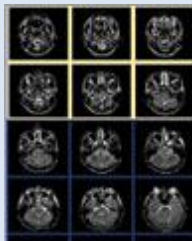
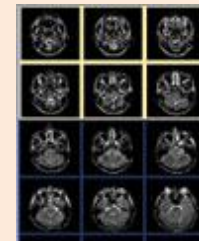
**Clinical Information :**

cbd 1cm on USG

# HA



# Private Radiology




# Displaying radiology images from the Private Radiology Facility

Centricity Enterprise Web V3.0 - Microsoft Internet Explorer

**Patient, 50331254**  
ID: 50331254

**CHEST**  
28/1/08 12:17:43 1 series

Series 1 image



**Radiology Examination** copy find all images


Episode No.	Exam. Date	Modality	Exam. Name	Organization
	04/06/2008 17:44	ABDOMEN	MR-ABDOMEN (PLAIN + CONTRAST)	Private

**(Testing Site - KHNQMIDSV03)[Images on ePR are for reference only and NOT for diagnostic purpose]**

Patient, 50331254 (50331254) 28/1/08 12:17:43 (1 of 1 images)

Se:1001  
Im:1001

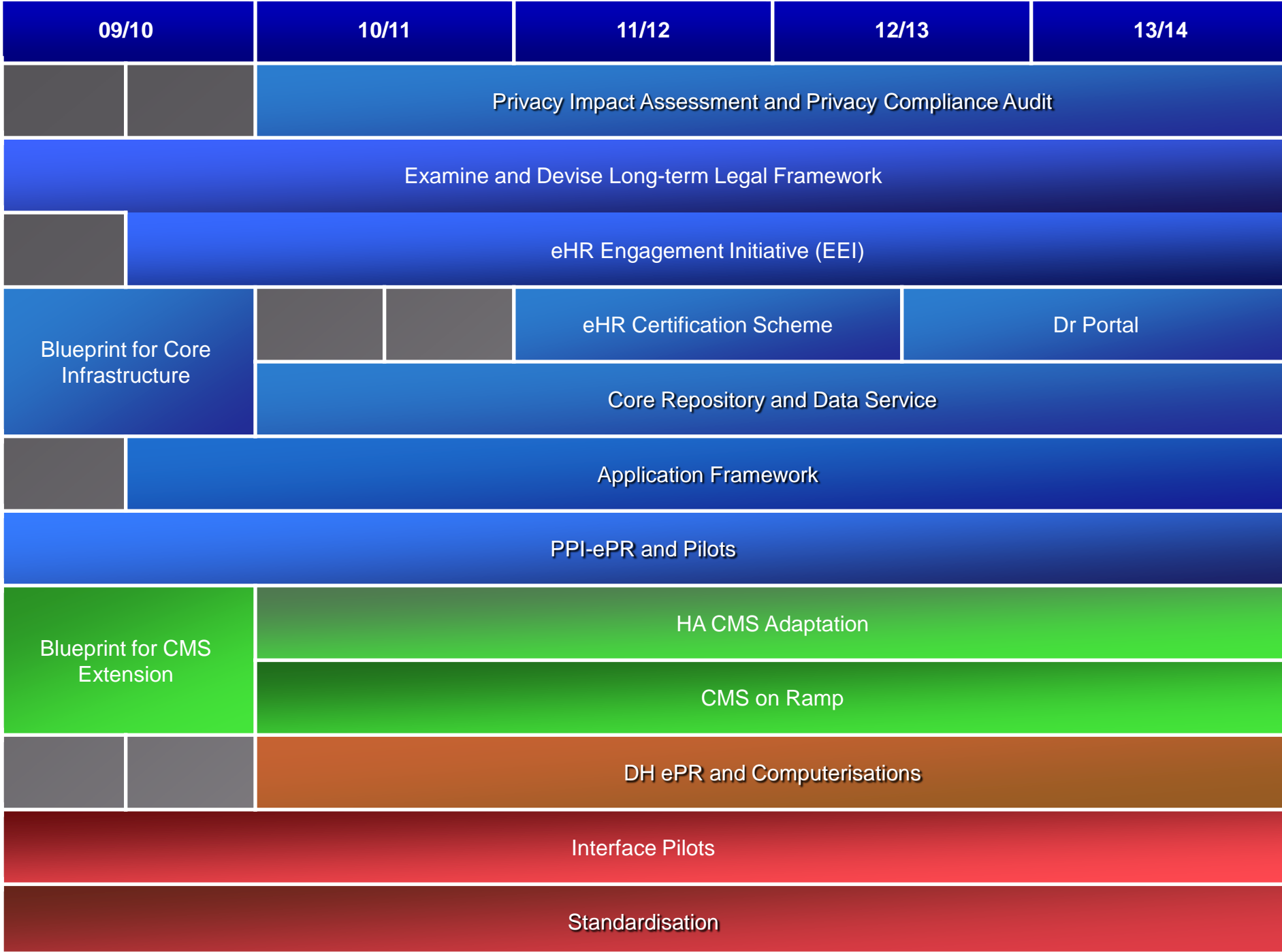
Original Image



Patient, 50331254  
Study Date: 28/1/08  
Study Time: 12:17:43  
MRN: 50331254

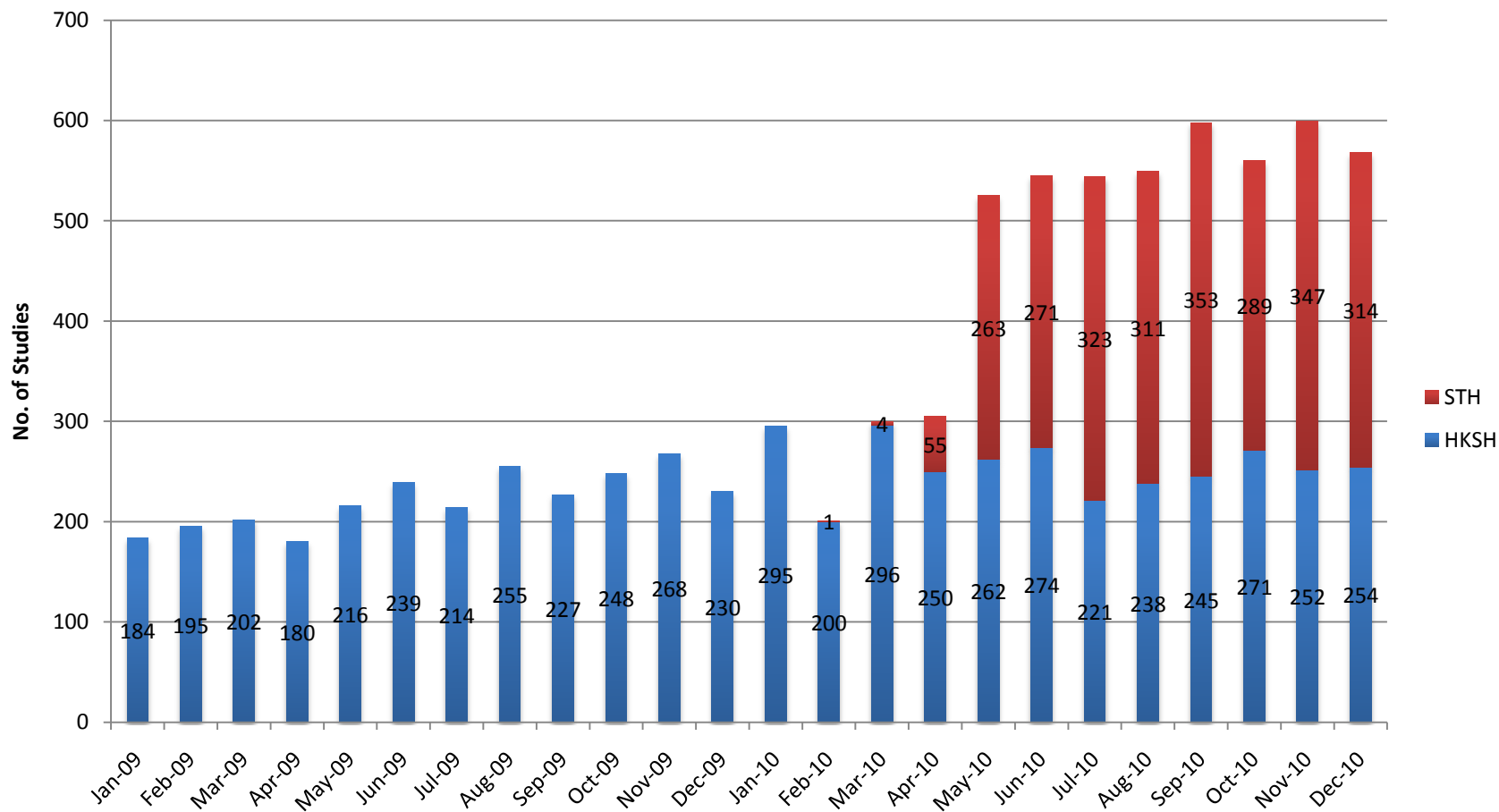
# Radiological Image Sharing Pilot

- Explore the existing technologies used in Private sector Radiology in the region.
- Promote standardisation of image distribution and healthcare document distribution.
- Promote enhanced network connectivity of Private Radiology facilities
- Promote adoption of digital imaging modalities in Private sector Radiology
- Facilitate access of Public sector patients to Private sector Radiology services





## Number of Studies transferred from Private Facilities to ePR, 2009-10



Private Facility	(Projected) Start Date
St Paul's Hospital	Live Run in February 2011
HK Health Check	Live Run in January 2011
Department of Diagnostic Radiology, University of Hong Kong	Live Run in August 2011
Union Hospital	Live Run in August 2011
Quality Healthcare Medical Services	Nov 2011
Bio Medical Imaging Centre	Nov 2011
Evangel Hospital	Feb 2012
Baptist Hospital	Feb 2012
iRad Medical Diagnostic Centre	Apr 2012
Hercules Medical Diagnostic and Laboratory Group	Apr 2012

# Utilization

- 6 Private Radiology facilities now participating in Radiological Image Sharing Pilot
- ~12,000 studies have been captured and shared in the HA electronic-Patient Record (as of 1<sup>st</sup> Sept 2011).
- 13 Private hospitals and about 70 Private centres to be enrolled in total.

# TECHNICAL ISSUES

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What is needed

Matching Keys

Standards for Messaging, Images,  
Compression

# What is Needed?

Memorandum of Understanding (MOU)

Patient's consent

Patient and Image Identification

2D Barcode Reading

Standards

- Messaging

- Network

- Imaging

# Patient Identification & 2D Barcode

HKID

Name in English

Date of birth

Sex

Accession number (for image identification)

- Closed Loop

# Proposed Technical Solution

## Standards

- Radiology images in DICOM III
  - Requires DICOM workstations at Private facility for sending images
- HL7 2.x messaging standard for Report in .pdf

# Image Distribution

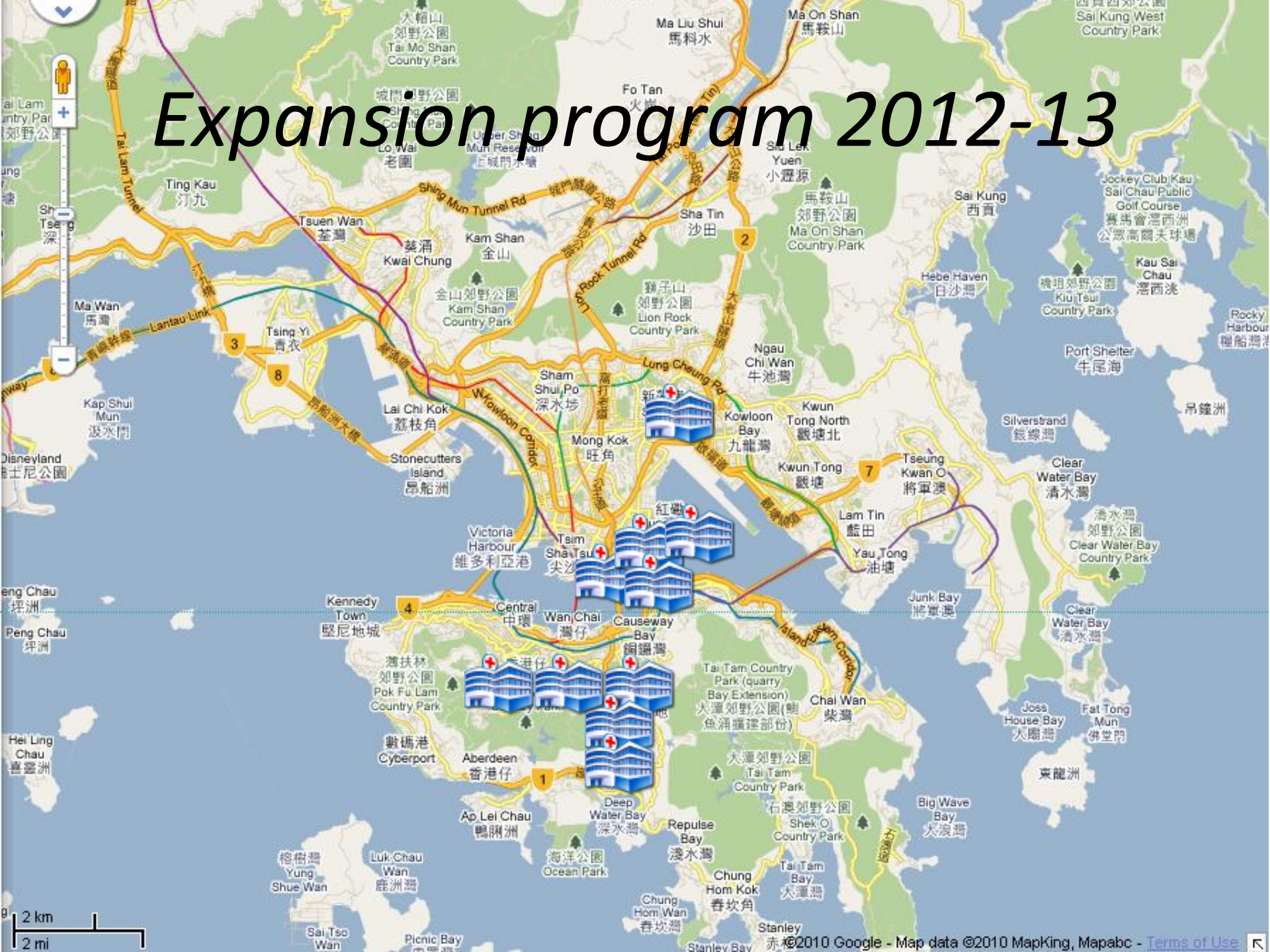
- Lossy Compression
- Limit of images per study: 1500



# *Enrolment in the Radiological Image Sharing Pilot Project*



# Expansion program 2012-13



# How to Apply

- Fill in Technical Assessment Form
  - Fulfil basic criteria for shortlisting
- Undergo Further Technical and Non-technical assessment
- Participate as 1 of 8 facilities to be Interfaced in 2012-13
- Sign MOU
- Go through Testing Phase to Production

**THANK YOU FOR YOUR  
PARTICIPATION**