

Malaysian Health Information Exchange (MyHIX)

Simposium Maklumat Geospacial Kebangsaan

NGIS ke 5

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Basic facts about healthcare provision

- Healthcare provision by teams
- Patients move across facilities/services
- Providers depend on information
 - Inaccurate/incomplete information is dangerous!
- Providers are autonomous
- Medical Records are confidential

Telemedicine

MSC Flagship

- Telemedicine Blueprint – 1997

“Telemedicine should be considered to have the broadest possible scope. It encompasses any health, health-support or governance service that can be provided via a multimedia network and a range of network-based or network-linked information and multimedia tools and technologies used by people and health professionals to access, manage and deliver healthcare.”

Telemedicine

MSC Flagship

“The future healthcare system will be supported and strengthened by telemedicine....

Through the seamless and ubiquitous availability of information and other services, telemedicine will dramatically reshape the delivery of healthcare. Information and other services will become more virtual, more distributed and more integrated, resulting in better, more timely and more efficient healthcare delivery.”

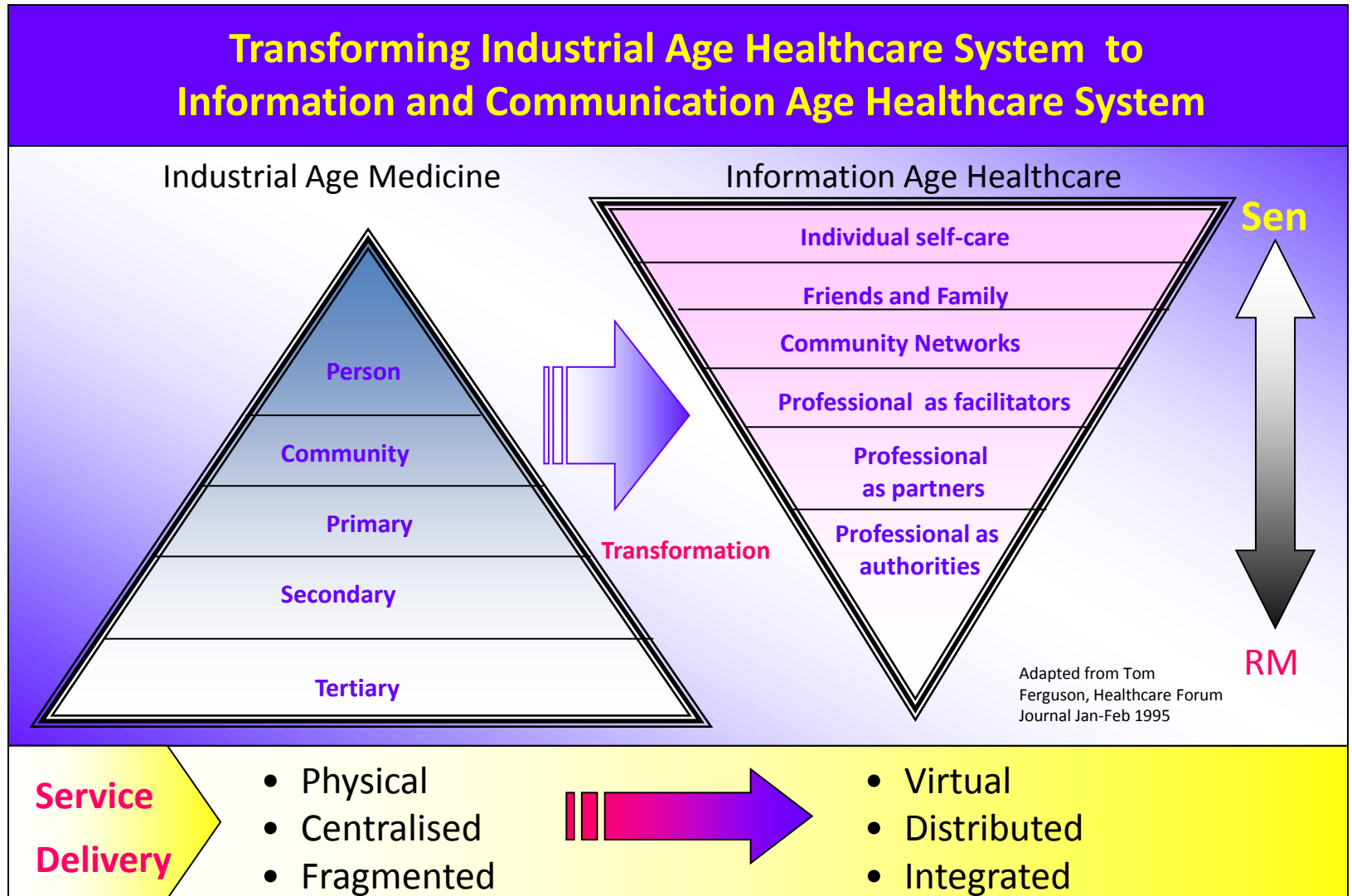
Telemedicine

MSC Flagship

Goals of the transformation:

1. Wellness focus
2. Person focus
3. Informed person
4. Self help
5. Care provided at Home or Close to Home
6. Seamless, Continuous Care
7. Services Tailored to Individual or Group Need
8. Effective, Efficient and Affordable Services

TRANSFORMING THE HEALTHCARE SYSTEM



MALAYSIA HEALTH ICT FRAMEWORK

CONSUMER LAYER

Patient: MyHealthOnline Portal

Professionals: CPD Portal (Continuous Professional Development)

COLLABORATIVE LAYER

Lifetime Health Record

Lifetime Health Plan

Data Warehouse

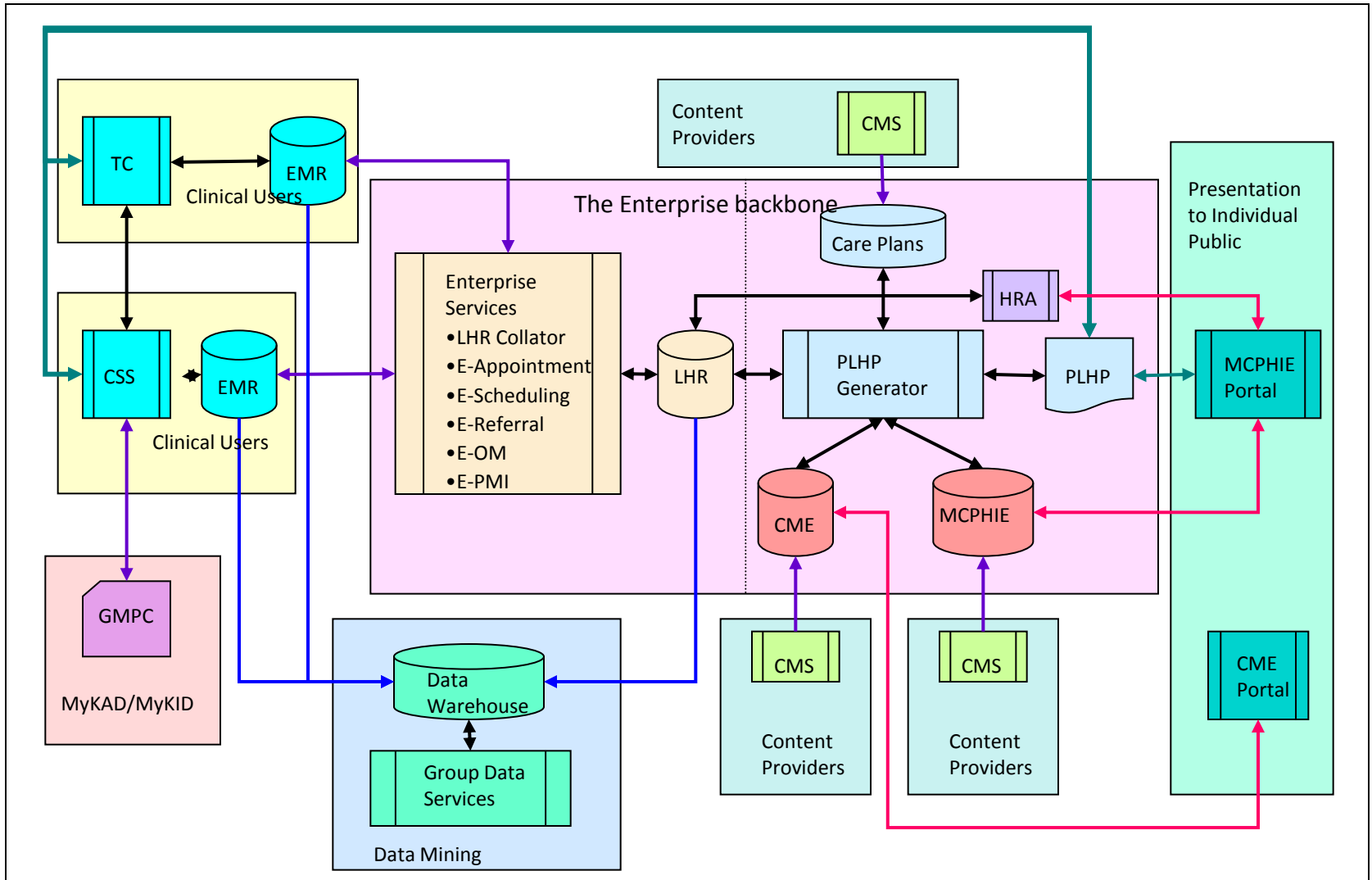
OPERATIONAL LAYER

Hospital Information System (PAS, EMR, LIS, PACS, PIS etc)

Clinic Information System (Primary Care)

Other Facility Types (Information System)

Integrated Health IS



The Projects

- Hospital/Clinic Information Systems (HIS/CIS)
- Lifetime Health Record (LHR)
 - Malaysian Health Information Exchange (MyHIX)
 - Integration Profiles
 - Connectathon
 - User Access Control Audits
- Personalised Lifetime Health Plan (PLHP)
- Health Data Warehouse (HDW)
- Health Information and Education Portal (HIE)

Lifetime Health Record LHR

- Collection of health information of an individual,
 - from himself and his healthcare providers
 - for use by all of his healthcare providers,
 - to manage his health,
 - from birth to death
- Continuity of care

LIFETIME HEALTH RECORD

LHR PHASE 1

Patient Master Index

Document Registry

Document Repository

Log & Audit

Image Manager

Access Control

Configuration
Manager

Local Client
Connector

Terminology Services

Image Repository

Web Server

LHR PHASE 2

Expansion of Sites

Expansion of
Services

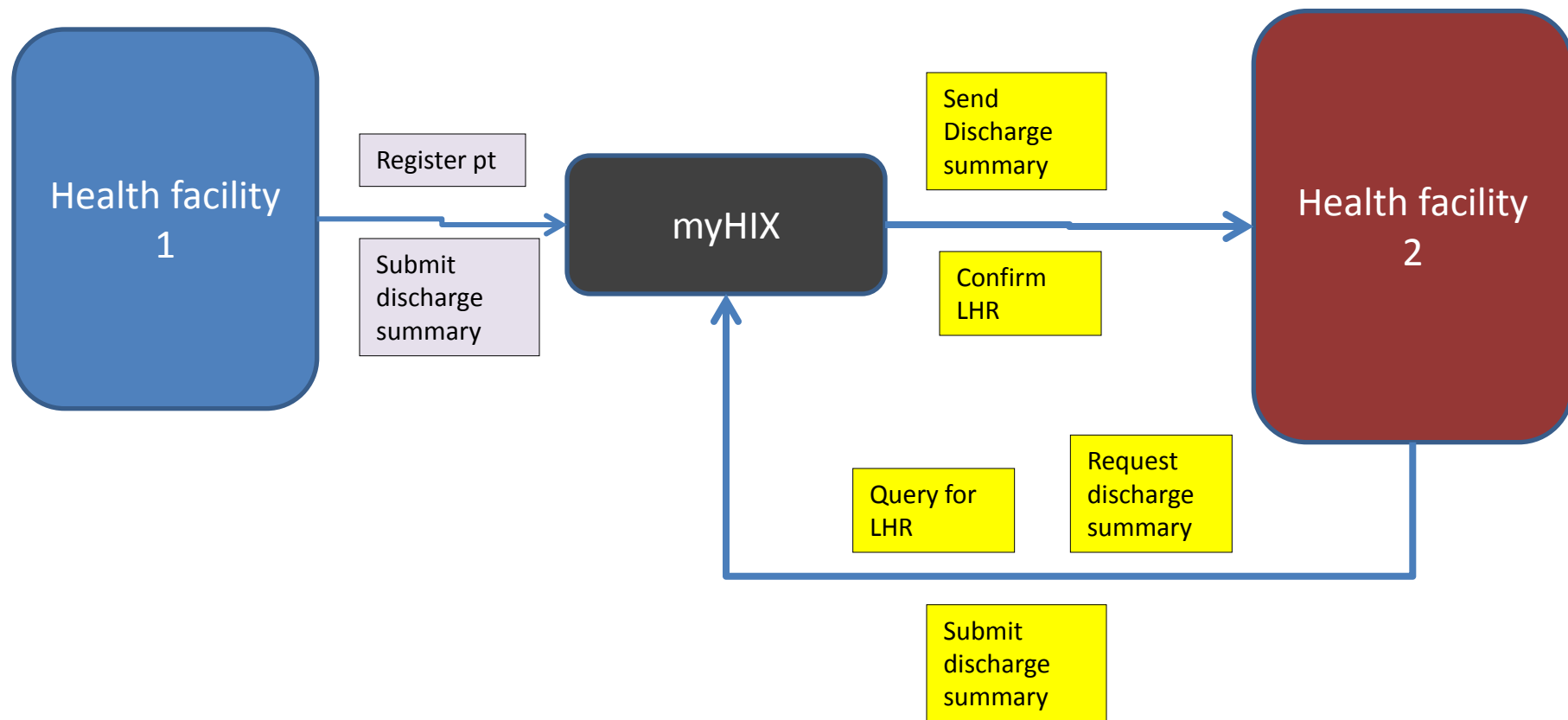
LHR INTEGRATION FRAMEWORK

- **2006-07 LHR Consultancy**
 - ❑ LHR Implementation Framework – “roadmap for the implementation of an information service where integrated information is shared electronically to support health care decisions by caregivers through the creation a secure and private lifetime health record for each Malaysian.”
- **Integrating across the Health Enterprise**
 - ❑ Standard information (data)
 - ❑ Standard message
- **IHE & Integration Profile**
- **Connectathons**

MyHIX Project

- Development of the Integration Engine
- Funded by MDEC 2008-2010
- Proof of concept
 - Sharing discharge summary only
 - 4 sites
- Integrating Healthcare Enterprise (IHE)
 - Integration Profiles
 - Connectathon

MyHIX Integration Process Flow



REQUIREMENTS FOR INTEGRATION

Data Standards

PSDD, NHDD,
ICD 10, MDC, MHFC
DICOM, SNOMED CT

Document Standards

Discharge summary,
GL

Messaging Standards

HL7, CDA

Standard Protocol/ Workflow

Pt Registration, Pt
Discharge, Access
Control

Engine

MyHIX

Central Repositories

Document, *Data*,
Images

PLHP Data

1. Biodata
2. Summary of health status
3. Personal Health Diary
4. Health Care Plan
5. Health visits
6. Specific Health Records

Biodata

1. Personal biodata
2. Occupational record
3. Family Health Records
4. Health Insurance records

Summary of Health Status

1. Birth record
2. Allergy records
3. List of chronic diseases
4. List of permanent disabilities
5. Obstetric records
6. Surgical/surgical procedures records
7. Basic Lab tests results

Personal Health Diary

1. My Health Diary
2. Menstrual Calender and BSE
3. Exercise/Physical activity Diary
4. Quit smoking diary
5. Quit drinking diary

Health care Plans

1. Immunisation schedules
2. Children (newborn – 6 years)
3. School children and adolescents (7 – 19 years)
4. Adults (20 – 59 years)
5. Elderly (60 years and above)
6. Dental health

Health Visits

1. Health visit records
2. Primary and Secondary Care Clinics visit summaries
3. Hospital discharge summaries

Specific Health Records

1. Chronic disease care records
 1. Diabetes
 2. Hypertension
 3. Asthma
2. Antenatal & postnatal records
3. Appointment dates

LHR Biodata Data Elements

1. PMI Number
2. Name
3. Alias Name
4. NRIC No.
5. Old NRIC No.
6. Other ID Type
7. Other ID No.
8. Birth Date
9. Sex
10. Race
11. Blood Type
12. Blood Rhesus
13. Marital Status
14. Religion
15. Nationality
16. Home Address 1
17. Home Address 2
18. Home Address 3
19. Home Town
20. Home State

LHR Biodata Data Elements

- | | |
|----------------------|-------------------------------|
| 21. Home Country | 31. Office Phone No. |
| 22. Home Postcode | 32. Mobile Phone No. |
| 23. Home Phone No. | 33. Email |
| 24. Postal Address 1 | 34. Organ Donor Indicator |
| 25. Postal Address 2 | 35. Chronic Disease Indicator |
| 26. Postal Address 3 | 36. Allergy Indicator |
| 27. Postal Town | 37. Death Certified Indicator |
| 28. Postal State | |
| 29. Postal Country | |
| 30. Postal Postcode | |

LHR Visit Summary

1. Episode record
2. Encounter Record
3. Symptoms Information
4. Vital Sign Record
5. Signs Record
6. Diagnosis Record
7. Medication Record
8. Test/Procedure Record
9. Health Plan Record

LHR – Episode Record Data Elements

1. Health Care Facility
2. Episode Datetime
3. Patient Category
4. Discharge Datetime
5. Case summary
6. Doctor's Name

Thank you

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