

Briefing on eHR Content – Problem & Procedure

By Maggie LAU

Health Informatician, eHRISO

Agenda

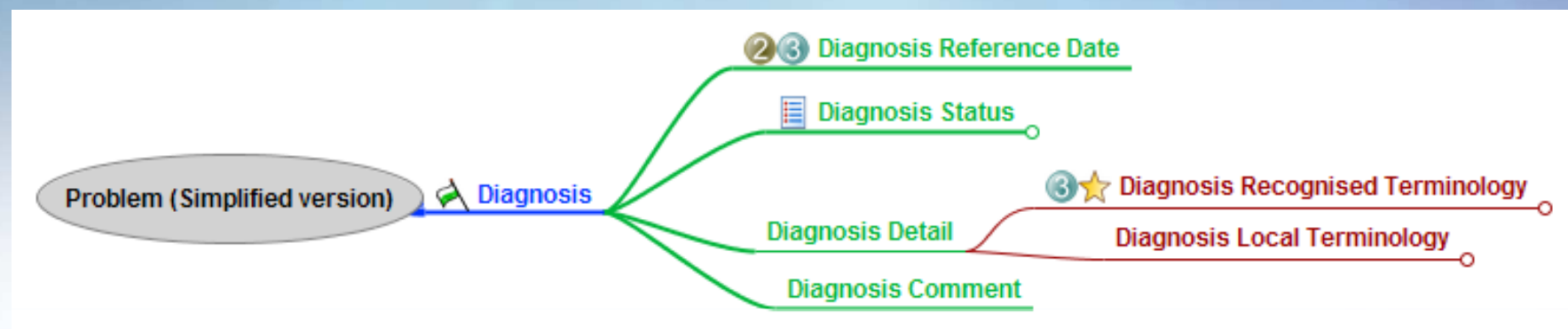
- Problem
- Procedure
- Hong Kong Clinical Terminology Table (HKCTT)

PROBLEM

Problem

- Can be
 - diagnosis,
 - pathophysiological state
 - significant abnormal physical sign and examination finding
 - social issue
 - risk factor
 - allergy
 - reactions to food or drugs
 - health alert
- Problem list includes all active and inactive significant health and social problems
- No free text data or data in pdf will be accepted for this domain

Mindmap – Problem (Simplified Version)

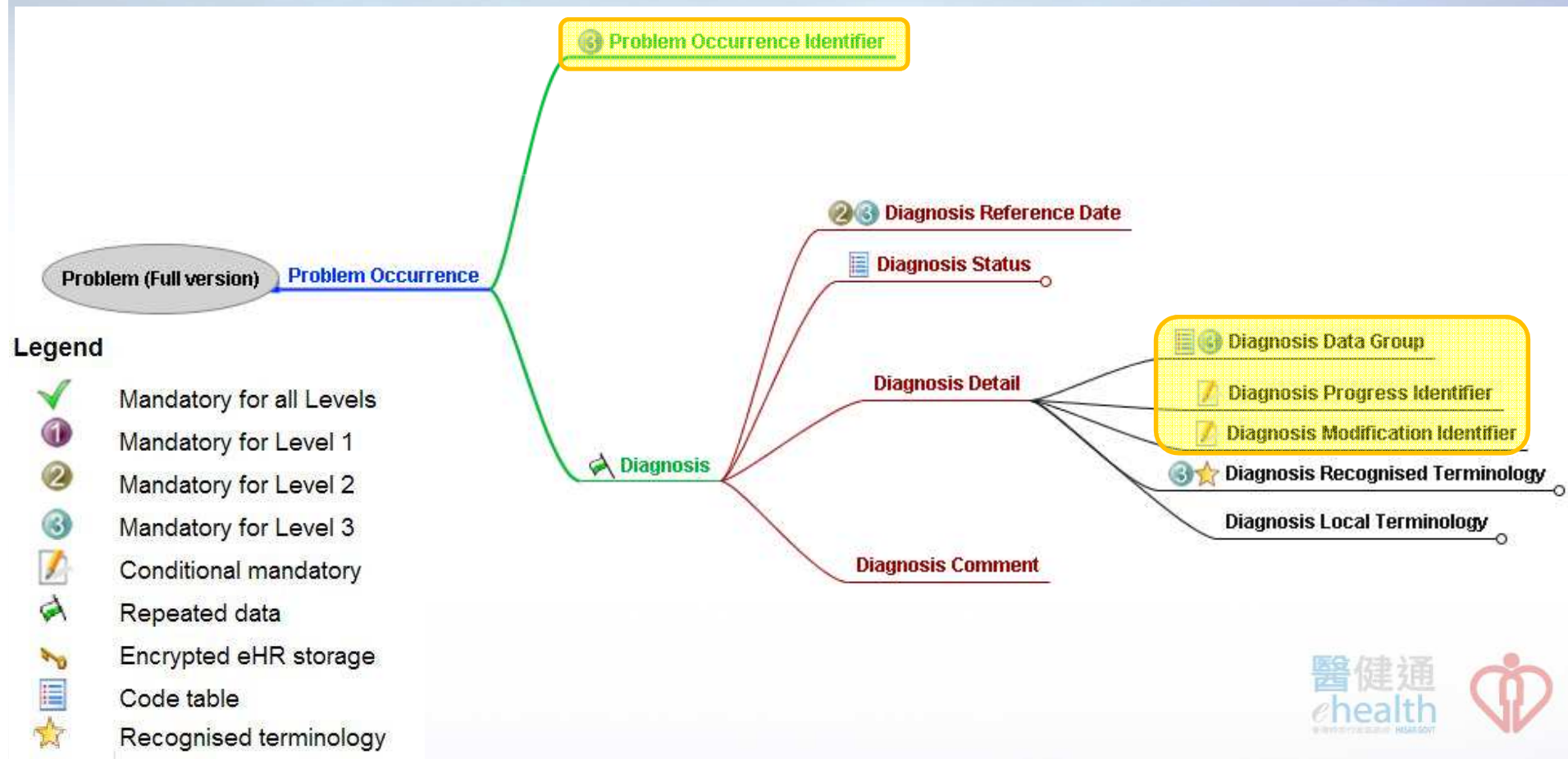


Legend

- ✓ Mandatory for all Levels
- ① Mandatory for Level 1
- ② Mandatory for Level 2
- ③ Mandatory for Level 3
- ✎ Conditional mandatory
- 📌 Repeated data
- 🔑 Encrypted eHR storage
- 📋 Code table
- ★ Recognised terminology

Mindmap – Problem (Full Version)

- For healthcare providers using specific templates, such as Clinical Data Framework (CDF), in which extra identifiers are required to differentiate the captured data.



Example for Problem – Level 2

| Entity Name | Data requirement (Certified Level 2) | Example (Certified Level 2) |
|------------------------------------|---|----------------------------------|
| Diagnosis reference date | M | 6/12/2010 |
| Diagnosis status local description | O | Wrong |
| Diagnosis local code | O | 332 |
| Diagnosis local description | M | Transient ischaemic attack - TIA |
| Diagnosis comment | O | affect left side of body |

Example for Problem – Level 3

| Entity Name | Data requirement (Certified Level 3) | Example (Certified Level 3) |
|--|---|--|
| Diagnosis reference date | M | 6/12/2010 |
| Diagnosis status code | O | C |
| Diagnosis status description | M if [Diagnosis status code] is given; NA if [Diagnosis status code] is blank | Cancelled |
| Diagnosis status local description | M if [Diagnosis status code] is given; NA if [Diagnosis status code] is blank | Wrong |
| Reason for cancellation of diagnosis | O if [Diagnosis Status Code] is "C" ; NA if [Diagnosis Status Code] is not "C" | Wrong diagnosis as no evidence supported that patient has this condition |
| Diagnosis -recognised terminology name | M | HKCTT |
| Diagnosis identifier - recognised terminology | M | 1234 |
| Diagnosis description - recognised terminology | M | Transient ischaemic attack |
| Diagnosis local code | O | 332 |
| Diagnosis local description | M | Transient ischaemic attack - TIA |
| Diagnosis comment | O | affect left side of body |

eHR Viewer - Problem

File Edit View Favorites Tools Help

Viewer PPP Programmes Administration Information

KA MAN WONG Log out

鄺大妹 KWOK, TAI MUI
HKIC : A987037A DOB : 1916 Age : 96 years Sex : F Details ▶

All Local Non-Local

- ▼ Clinical Note & Summary
 - Clinical Note & Summary
 - Referral
- Encounter
- ▼ Problem & Procedure
 - Problem / Diagnosis**
 - Procedure
 - Other Investigation
- ▼ Medication
 - Prescribing History
 - Dispensing History
- ▼ Laboratory Record
 - Biochemistry
 - Haematology
 - Blood Bank
 - Microbiology
 - Anatomical Pathology
- ▼ Radiology Record
 - General Radiology
 - Fluoroscopy
 - Magnetic Resonance Imaging
- Immunisation Record

Problem / Diagnosis Legend ▶

| Date | Description | Institution |
|-------------|------------------------------------|---------------------------|
| 05-Apr-2012 | Iron deficiency Anaemia | QMH |
| 04-Apr-2012 | Ischaemic heart disease | QMH |
| 04-Apr-2012 | Dementia | QMH |
| 05-Feb-2012 | Epigastric Pain | Dr. Hui Wing Yan Clinic |
| 05-Feb-2012 | Lung Cancer Metastasis to brain | PWH |
| 02-Feb-2012 | URI | Dr. Ma Lok Kei Clinic |
| 24-Mar-2011 | Atrial Fibrillation | DH |
| 05-Aug-2004 | Senile cataract | HKE |
| 18-May-2000 | Vertigo | SPH |
| 17-Jun-1998 | Head injury | Dr. Tsang Siu King Clinic |
| 28-Sep-1996 | Superficial laceration of arm | Dr. Ma Lok Kei Clinic |
| 18-Jan-1990 | Hypertension | DH |

Related Tables for Problem

- Data schema
 - Full version
 - Simplified version
- Codex
 - Data Group
 - Diagnosis Status
 - Recognised Terminology Name - Problem

Data Schema – Problem Simplified Version

| Form | Entity Name | Entity ID | Definition | Data Type (code) | Data Type (description) | Validation Rule | Repeated Data | Code Table | Data requirement (Certified Level 1) | Data requirement (Certified Level 2) | Data requirement (Certified Level 3) | Example (Certified Level 1) | Example (Certified Level 2) | Example (Certified Level 3) |
|------------------------------|--|-----------|--|------------------|-------------------------|--|---------------|---------------------------------------|--------------------------------------|--------------------------------------|--|-----------------------------|----------------------------------|--|
| Problem (Simplified version) | Diagnosis reference date | | This refers to the date when the diagnosis is last updated. | TS | Time Stamp | | R | | NA | M | M | | 6/12/2010 | 6/12/2010 |
| Problem (Simplified version) | Diagnosis status code | | eHR value of the "Diagnosis status" code table. | CE | Coded Element | | R | Diagnosis status | NA | NA | O | | | C |
| Problem (Simplified version) | Diagnosis status description | | eHR description of the "Diagnosis status" code table. The [Diagnosis status description] should match with the corresponding description of the selected [Diagnosis status code] | ST | String | | R | Diagnosis status | NA | NA | M if [Diagnosis status code] is given; NA if [Diagnosis status code] is blank | | | Cancelled |
| Problem (Simplified version) | Diagnosis status local description | | Local description of the diagnosis status | ST | String | | R | | NA | O | M if [Diagnosis status code] is given; NA if [Diagnosis status code] is blank | | Wrong | Wrong |
| Problem (Simplified version) | Reason for cancellation of diagnosis | | The stated reason for cancelling the diagnosis | ST | String | | R | | NA | NA | O if [Diagnosis Status Code] is "C"; NA if [Diagnosis Status Code] is not "C" | | | Wrong diagnosis as no evidence supported that patient has this condition |
| Problem (Simplified version) | Diagnosis -recognised terminology name | | Recognised terminology / classification set for the diagnosis | CE | Coded Element | If eHR value = HKCTT, allowable nature is "Diagnosis"; if eHR value = SNOMED CT, allowable hierarchy is "Clinical findings" or "Situation with explicit context"; if eHR value is "ICPC2", allowable items would be all codes except those ended in the range 30-09; if eHR value is "ICD10", all items in the code table is allowed | R | Recognised terminology name - problem | NA | NA | M | | | HKCTT |
| Problem (Simplified version) | Diagnosis identifier - recognised terminology | | Unique identifier of individual diagnosis in the recognised terminology | CE | Coded Element | [Diagnosis Recognised Terminology Identifier] should be included in the selected terminology of the "Recognised terminology name - Problem" code table | R | | NA | NA | M | | | 1234 |
| Problem (Simplified version) | Diagnosis description - recognised terminology | | Description of individual diagnosis in the recognised terminology | CE | Coded Element | [Diagnosis description - recognised terminology] should be matched with the corresponding description of the selected [Diagnosis identifier - recognised terminology] | R | | NA | NA | M | | | Transient ischaemic attack |
| Problem (Simplified version) | Diagnosis local code | | Local code of the diagnosis developed by the healthcare organization | ST | String | | R | | NA | O | O | | 332 | 332 |
| Problem (Simplified version) | Diagnosis local description | | Local description of the diagnosis developed by the healthcare organization | ST | String | | R | | NA | M | M | | Transient ischaemic attack - TIA | Transient ischaemic attack - TIA |
| Problem (Simplified version) | Diagnosis comment | | Comment of the diagnosis made by the healthcare staff | ST | String | | R | | NA | O | O | | affect left side of body | affect left side of body |

Codex – Data Group

eHR Sharable Data - Codex: Data Group

Data Group Table

Purpose : To identify the group of data in problem and procedure domains

Reference: eHR & HA

| Term ID | eHR Value | eHR Description |
|---------|-----------|--|
| | H | Clinical Data Framework name |
| | C | Clinical Data Framework intrinsic data |
| | E | Clinical Data Framework extrinsic data |
| | D | Recognized terminology |

Codex – Diagnosis Status

eHR Sharable Data - Codex: Diagnosis Status

Diagnosis Status

Purpose : to indicate the status of the diagnosis

Source : HA

| Term ID | eHR Value | eHR Description |
|---------|-----------|-----------------|
| | P | Provisional |
| | A | Active |
| | I | Inactive |
| | R | Resolved |
| | C | Cancelled |

Codex – Recognised Terminology Name (Problem)

eHR Sharable Data - Codex: Recognised Terminology Name - Problem

Recognised terminology name - problem

Purpose: To define the names of the recognised terminology for problem

Reference: eHR

| Term ID | eHR Value | eHR Description |
|---------|------------|--|
| | HKCTT | Hong Kong Clinical Terminology Table |
| | SNOMED CT | Systematized Nomenclature of Medicine - Clinical Terms |
| | ICD10-2001 | International Statistical Classification of Diseases and Related Health Problems Tenth Revision (2001) |
| | ICD10-2010 | International Statistical Classification of Diseases and Related Health Problems Tenth Revision (2010) |
| | ICPC2 | International Classification for Primary Care, Second edition |

PROCEDURE

Procedure

- It includes any significant procedures that are performed for diagnostic, exploratory or treatment purposes.
- No free text data or data in pdf will be accepted for this domain

Mindmap – Procedure (Simplified Version)

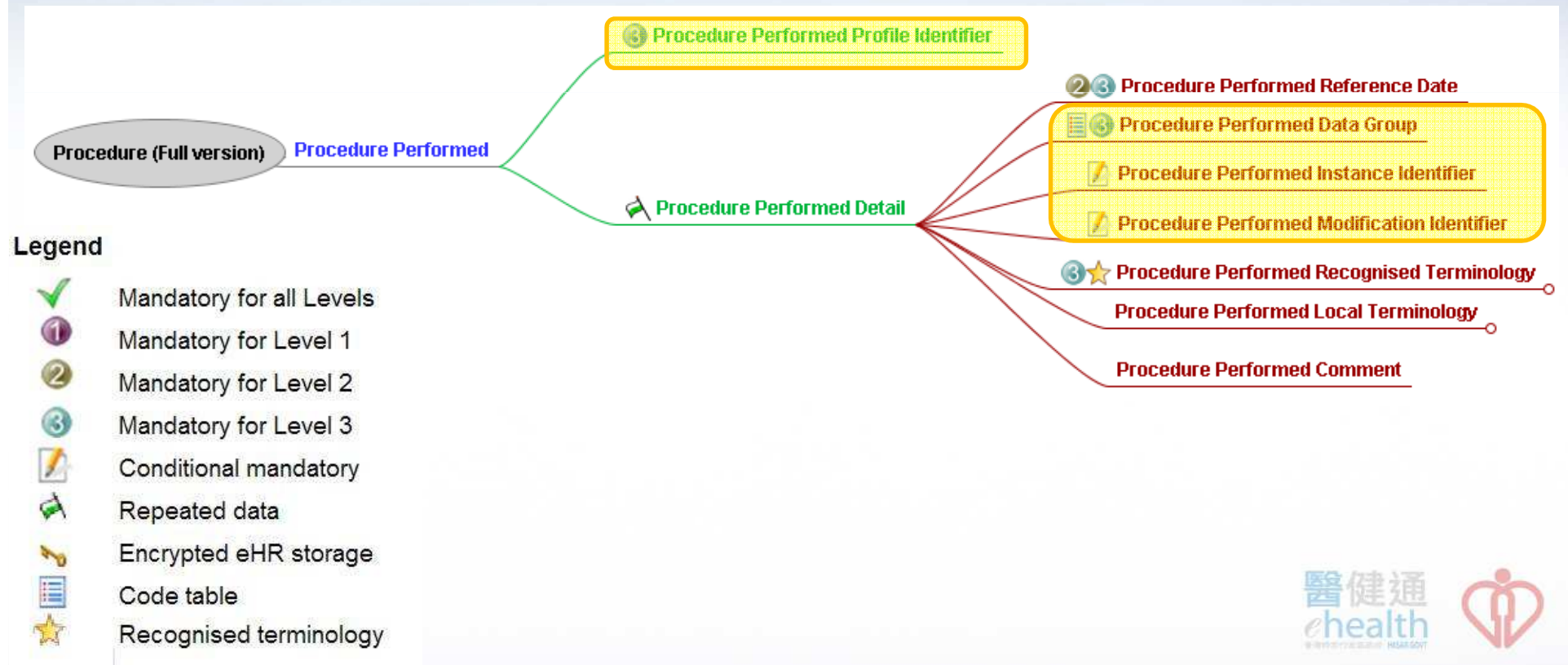


Legend

- ✓ Mandatory for all Levels
- 1 Mandatory for Level 1
- 2 Mandatory for Level 2
- 3 Mandatory for Level 3
- Conditional mandatory
- Repeated data
- Encrypted eHR storage
- Code table
- ★ Recognised terminology

Mindmap – Procedure (Full Version)

- For healthcare providers using specific templates, such as Clinical Data Framework (CDF), in which extra identifiers are required to differentiate the captured data.



Example for Procedure – Level 2

| Entity Name ▼ | Data requirement (Certified Level 2) ▼ | Example (Certified Level 2) ▼ |
|---------------------------------------|--|-------------------------------|
| Procedure performed reference date | M | 6/12/2010 |
| Procedure performed local code | O | 2231 |
| Procedure performed local description | M | Lobectomy of left lung |
| Procedure performed comment | O | lower lobe |

Example for Procedure – Level 3

| Entity Name <input type="text"/> | Data requirement (Certified Level 3) <input type="text"/> | Example (Certified Level 3) <input type="text"/> |
|--|--|---|
| Procedure performed reference date | M | 6/12/2010 |
| Procedure performed - recognised terminology name | M | HKCTT |
| Procedure performed identifier - recognised terminology | M | 23815 |
| Procedure performed description - recognised terminology | M | Lobectomy of lung - left lower lobe |
| Procedure performed local code | O | 2231 |
| Procedure performed local description | M | Lobectomy of left lung |
| Procedure performed comment | O | lower lobe |

eHR Viewer - Procedure

File Edit View Favorites Tools Help

Viewer PPP Programmes Administration Information

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鄭大妹 KWOK, TAI MUI
HKIC : A987037A DOB : 1916 Age : 96 years Sex : F Details ▶

Allergy & ADR Close Record X
Select Participant ▶

All Local Non-Local

- ▼ Clinical Note & Summary
 - Clinical Note & Summary
 - Referral
 - Encounter
- ▼ Problem & Procedure
 - Problem / Diagnosis
 - Procedure
 - Other Investigation
- ▼ Medication
 - Prescribing History
 - Dispensing History
- ▼ Laboratory Record
 - Biochemistry
 - Haematology
 - Blood Bank
 - Microbiology
 - Anatomical Pathology
- ▼ Radiology Record
 - General Radiology
 - Fluroscopy
 - Magnetic Resonance Imaging
- Immunisation Record

Procedure Legend ▶

| Date | Description | Institution |
|-------------|--|---------------------------------|
| 25-Jun-2012 | Echocardiography | SPH |
| 04-Apr-2012 | Electroencephalography | QMH |
| 04-Apr-2012 | Electrocardiogram | QMH |
| 06-Mar-2012 | Oesophagogastroduodenoscopy with biopsy | Mong Kok Grace Endoscopy Centre |
| 31-Dec-2010 | Oral glucose tolerance test | PYH |
| 05-Apr-2005 | Open reduction and fixation - screw to right proximal femur (star drive screw) | PMH |
| | Free skin flap | |
| | Neuroplasty | |
| 13-May-2002 | Insertion of intraocular lens prosthesis at time of cataract extraction, one stage | HKE |

Related Tables for Procedure

- Data schema
 - Full version
 - Simplified version
- Codex
 - Data Group
 - Recognised Terminology Name - Procedure

Data Schema – Procedure Simplified Version

eHR Sharable Data - Procedure (Simplified Version)

| Form | Entity Name | Entity ID | Definition | Data Type (code) | Data Type (description) | Validation Rule | Repeated Data | Code Table | Data requirement (Certified Level 1) | Data requirement (Certified Level 2) | Data requirement (Certified Level 3) | Example (Certified Level 1) | Example (Certified Level 2) | Example (Certified Level 3) |
|--------------------------------|--|-----------|---|------------------|-------------------------|--|---------------|---|--------------------------------------|--------------------------------------|--------------------------------------|-----------------------------|-----------------------------|-------------------------------------|
| Procedure (Simplified version) | Procedure performed reference date | | Date when the procedure was performed. If this date is not available, the create date of this record or this data should be submitted | TS | Time Stamp | | R | | NA | M | M | | 6/12/2010 | 6/12/2010 |
| Procedure (Simplified version) | Procedure performed - recognised terminology name | | Recognised terminology / classification set for the procedure performed | CE | Coded Element | If eHR value = HKCTT, allowable nature is "Procedure"; if eHR value = SNOMED CT, allowable hierarchy is "Procedure"; if eHR value = ICDPC2, allowable items would be all codes ended in the range of 30-69 | R | Recognised terminology name - procedure | NA | NA | M | | | HKCTT |
| Procedure (Simplified version) | Procedure performed identifier - recognised terminology | | Unique identifier of individual procedure performed in the recognised terminology | CE | Coded Element | [Procedure performed identifier - recognised terminology] should be included in the selected terminology of the [Recognised Terminology Name - Procedure] code table | R | | NA | NA | M | | | 23615 |
| Procedure (Simplified version) | Procedure performed description - recognised terminology | | Description of procedure performed in the recognised terminology | CE | Coded Element | [Procedure performed description - recognised terminology] should be matched with the corresponding description of the selected [Procedure performed identifier - recognised terminology] | R | | NA | NA | M | | | Lobectomy of lung - left lower lobe |
| Procedure (Simplified version) | Procedure performed local code | | Local code of the procedure performed that is developed by the healthcare organization | ST | String | | R | | NA | O | O | | 2231 | 2231 |
| Procedure (Simplified version) | Procedure performed local description | | Local description of the procedure performed that is developed by the healthcare organization | ST | String | | R | | NA | M | M | | Lobectomy of left lung | Lobectomy of left lung |
| Procedure (Simplified version) | Procedure performed comment | | Comment of the procedure performed which is made by the healthcare staff | ST | String | | R | | NA | O | O | | lower lobe | lower lobe |

Codex – Data Group

eHR Sharable Data - Codex: Data Group

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Codex – Recognised Terminology Name (Procedure)

eHR Sharable Data - Codex: Recognised Terminology Name - Procedure

Recognised terminology name - procedure

Purpose: To define the names of the recognised terminology for procedure

Reference eHR

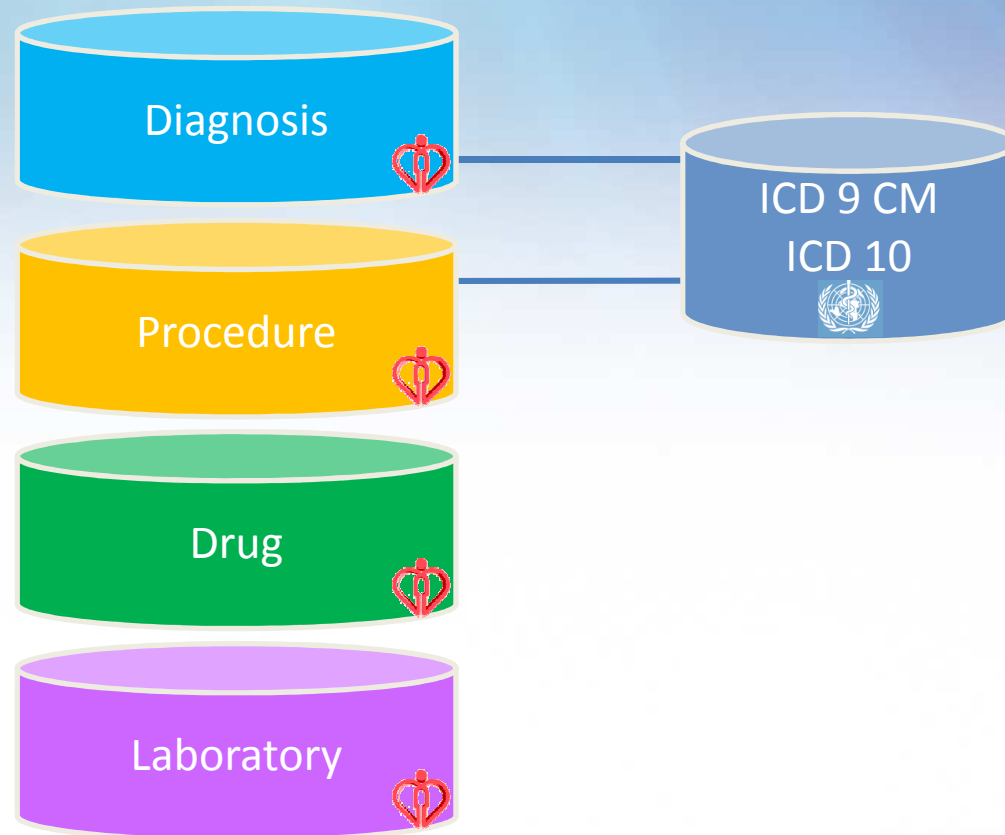
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| | SNOMED CT | Systematized Nomenclature of Medicine - Clinical Terms |
| | ICPC2 | International Classification for Primary Care, Second edition |

HONG KONG CLINICAL TERMINOLOGY TABLE (HKCTT)

Recognised Terminologies in eHR

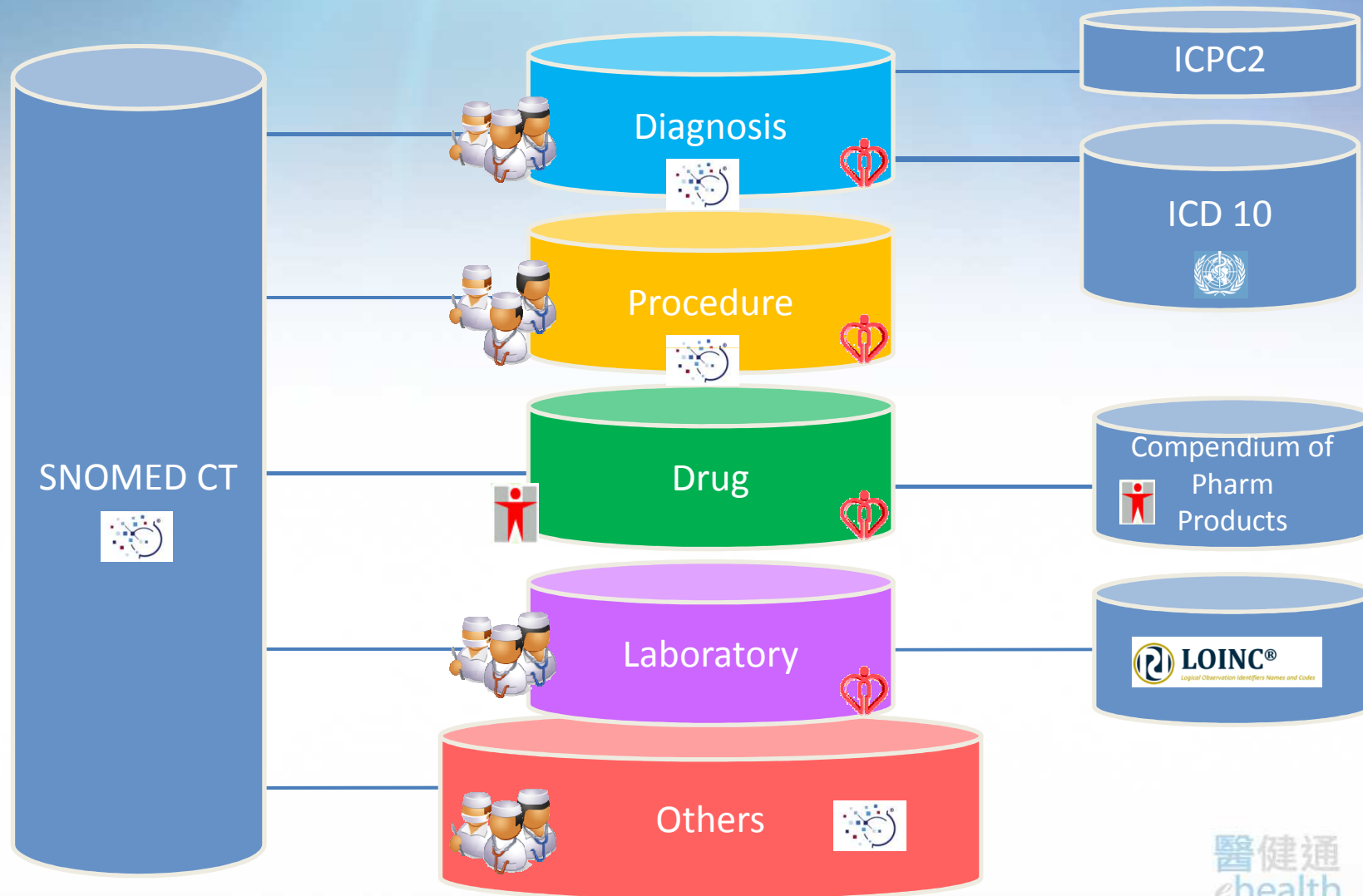
- Compendium of Pharmaceutical Products
- Hong Kong Clinical Terminology Table (HKCTT)
- International Classification of Diseases, 10th Revision (ICD 10)
- International Classification for Primary Care, 2nd Edition (ICPC2)
- Logical Observations, Identifiers Names and Codes (LOINC)
- Systematized Nomenclature of Medicine, Clinical Terms (SNOMED CT)

Hospital Authority Clinical Vocabulary Table (HACVT)

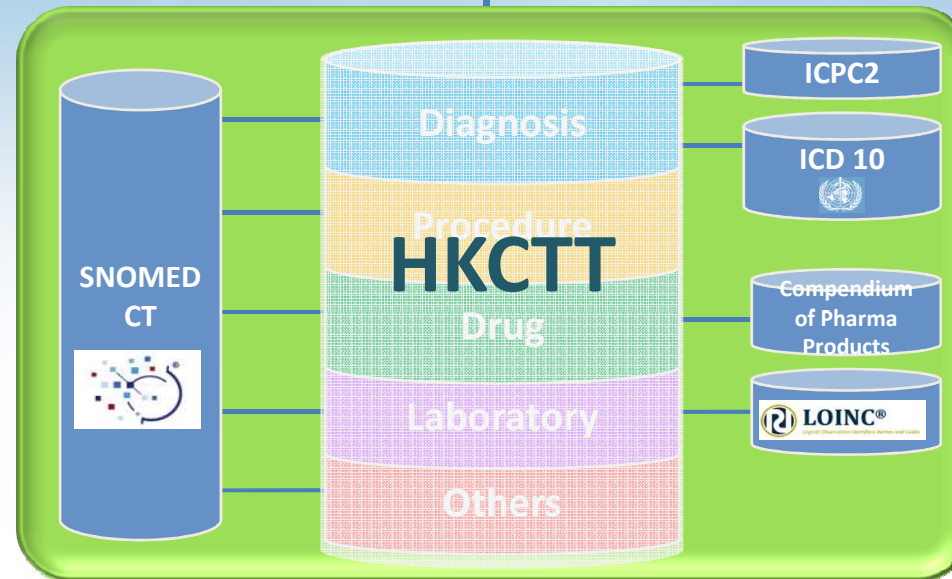


Building HKCTT

2012

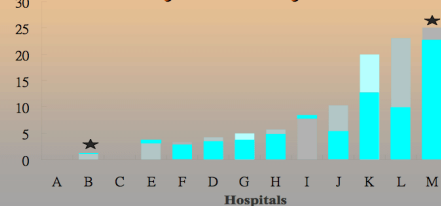


HKCTT



Secondary Use

Whipple's Operation
30-day Mortality Rates



Clinical Data
Repository

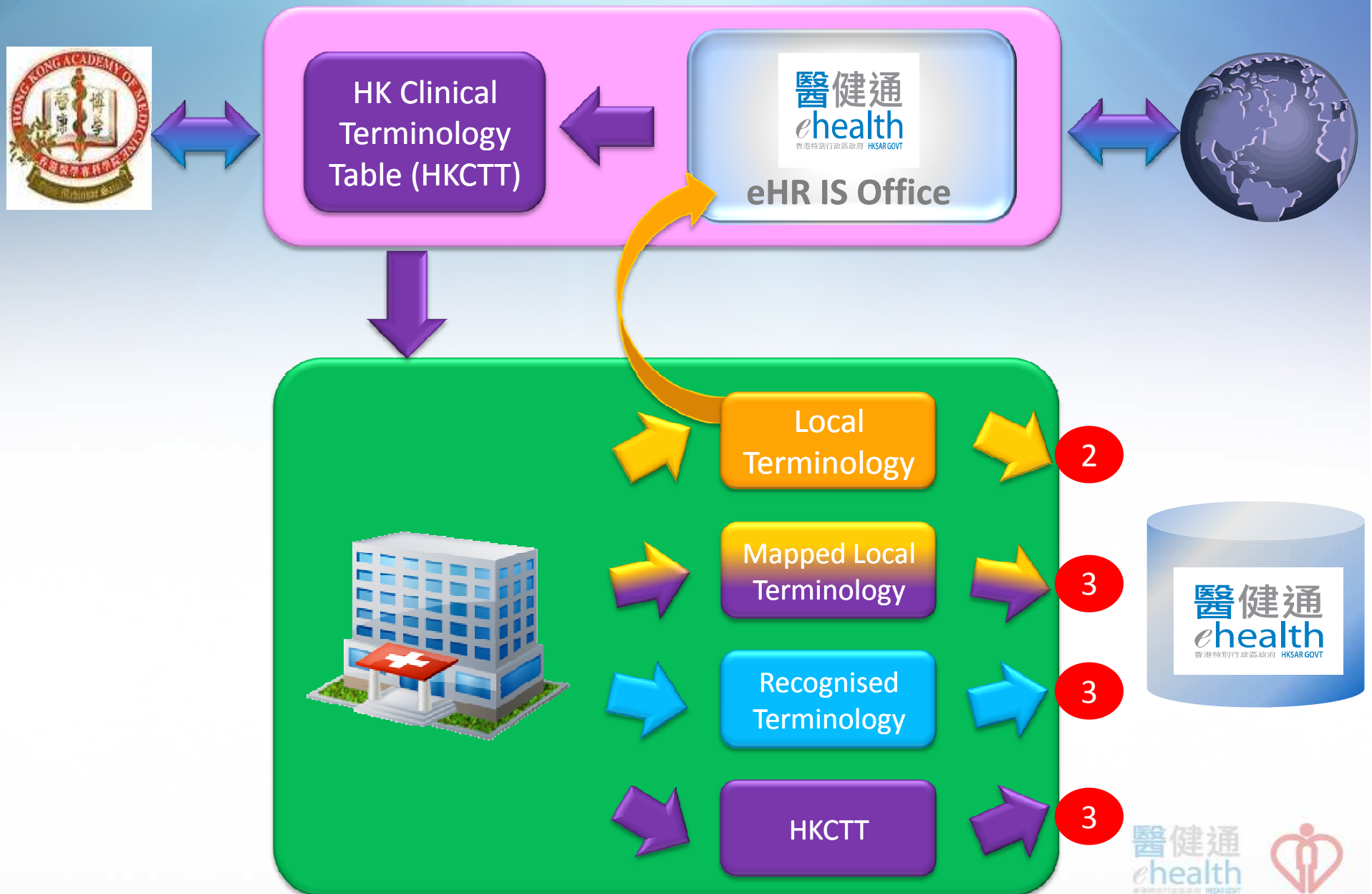
eHR



3 ways to Adopt HKCTT

| | HKCTT App | HKCTT Offline | HKCTT Core |
|-------------------------------|-------------------------|----------------------|-------------------------------|
| Serving | On-ramp / Adaptation | Provider's system | All HCPs |
| HKCTT Content | Y | Y | Y (view <u>±</u> download) |
| Terminology Engine | Y | Y | |
| Search Panel | Y | | |

Adoption of Health Information Standard



THANK YOU