# 電子健康記錄互通系統

Enhancing medication safety with eHR drug standards

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Workshop on Improve Patient Safety with Drug Standards
3 March 2017



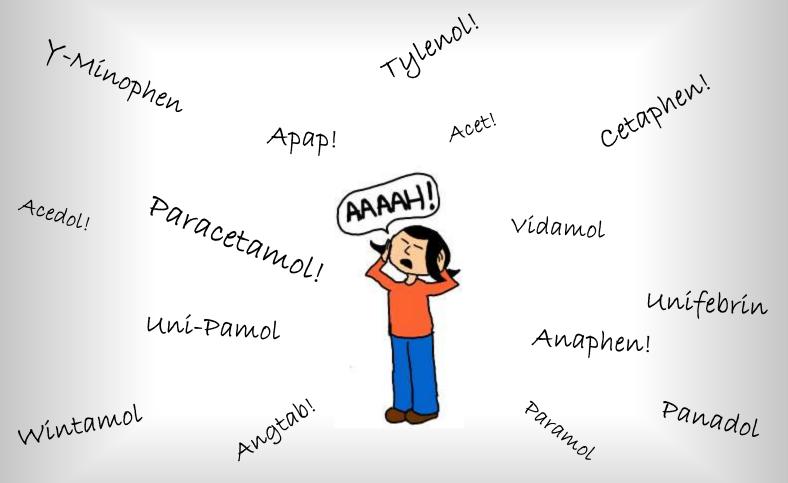




# What is medication terminology



# In eHR, we need standardisation of drug terminologies



Different names for the same drug

# Which standard drug terminology shall we use?





dictionary of medicines + devices





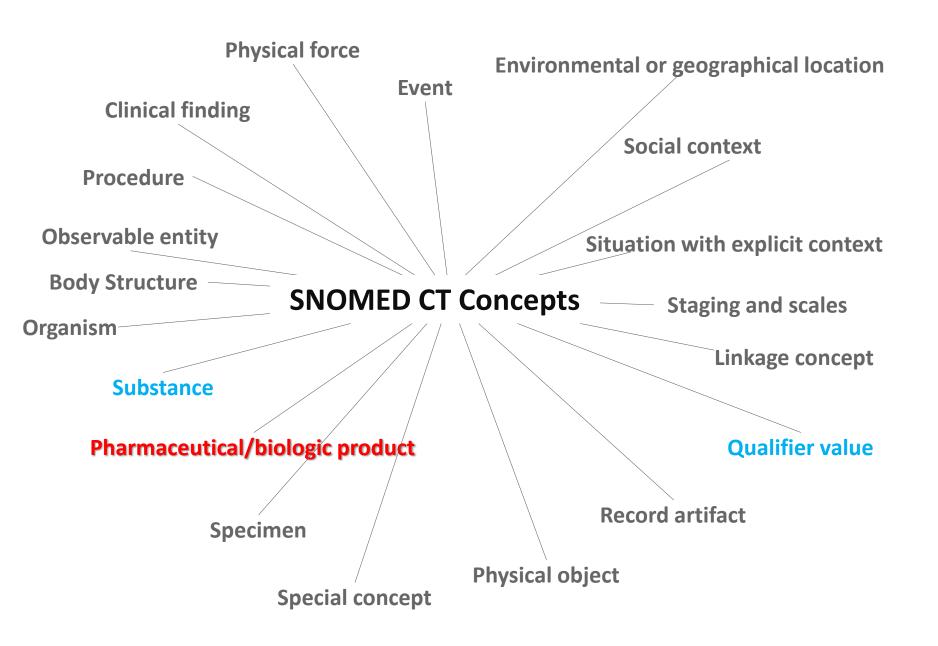
SNOMED-CT core, ICD-10 etc

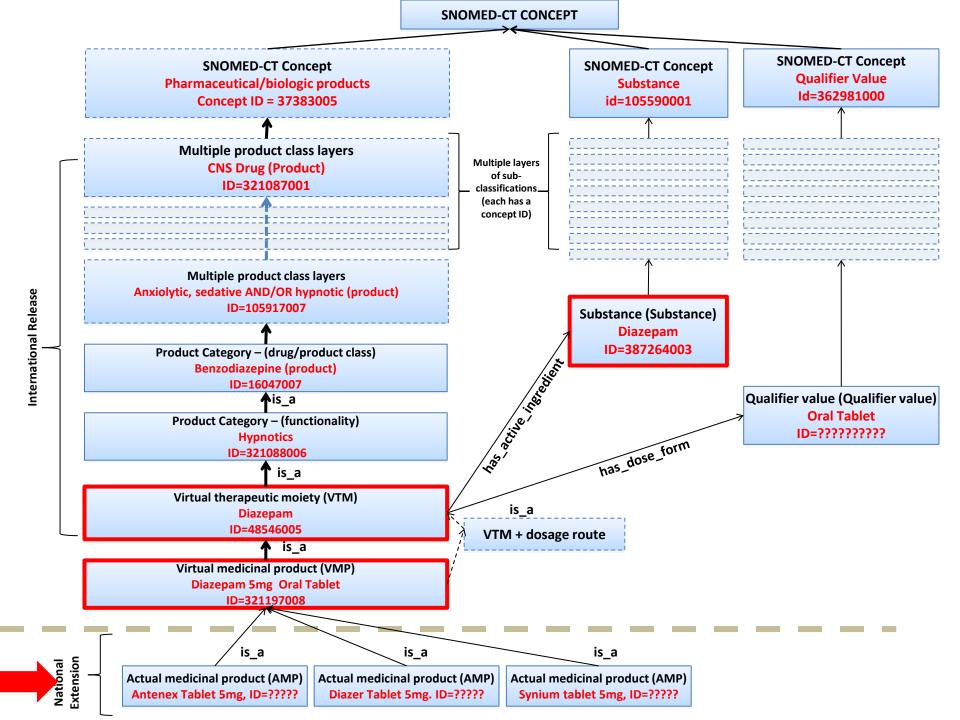


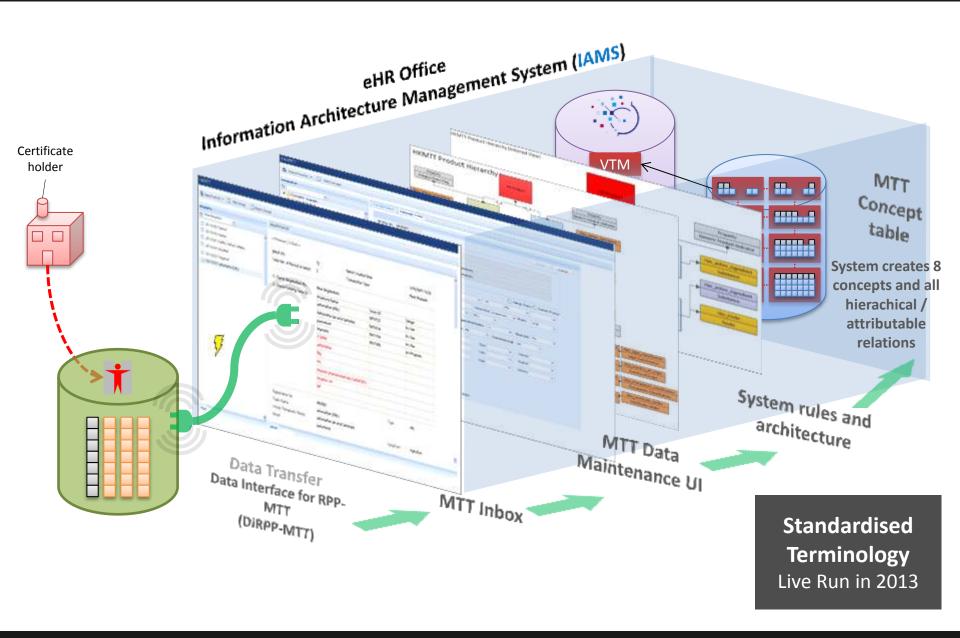




RxNorm, SNOMED-CT, FDA, FDB, Micromedex, etc







# **Summary**

What approach has been taken to build, develop and maintain the HKMTT for eHR?

- Collaborative approach
- Standardised approach
- Interoperable approach
- Sharable data approach
- Better patient and medication safety approach
- Timely approach



# What is Hong Kong Medication Terminology Table (HKMTT)



# Basic principles

- Compliant with standard
- Descriptive enough to allow identification and classification
- Unambiguous
- Concise
- Clinically relevant

# Editorial Guide on Hong Kong Clinical Terminology Table – Drugs (Medication Terminology Table)

#### Purpose:

Governs how concepts are populated and maintained in MTT

To be **compiled by eHR-ISO** MTT data maintenance officer, and **endorsed by eHR IS DG (Drug Record)** 

#### Overall status:

Started since: Jan 2015

Version: V.1.1

Pages: 162

## Chapters: 6 chapters completed:

- 1. Introduction
- 2. HKMTT model
- 3. HKMTT components
- 4. Product Concepts
- 5. Qualifier Concepts
- 6. Appendices (rules and populated qualifier concepts)



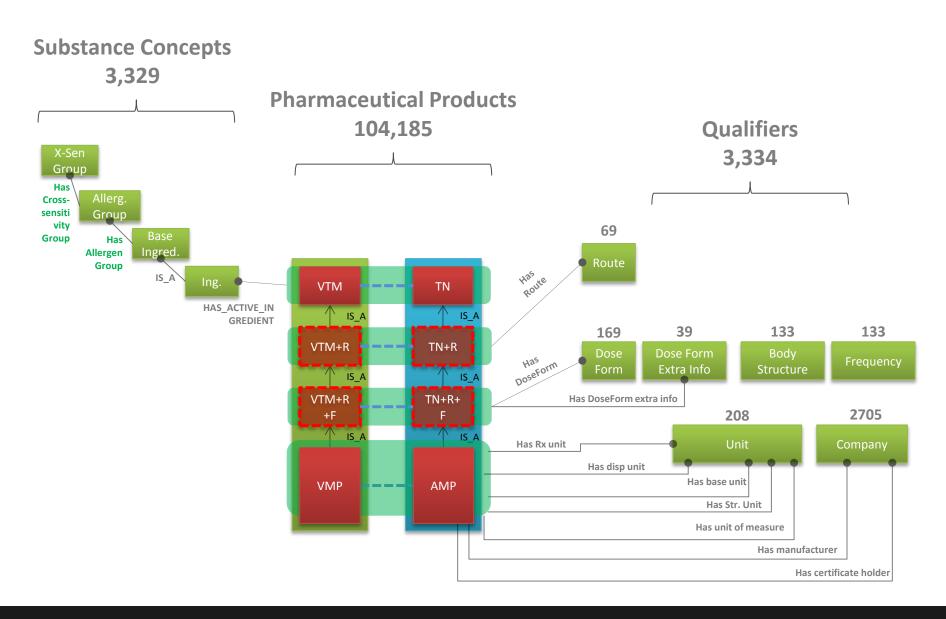
Editorial Guide on Hong Kong Clinical Terminology Table – Drugs (Medication Terminology Table) [Document Reference No., G52] Version 1.1

January 2015

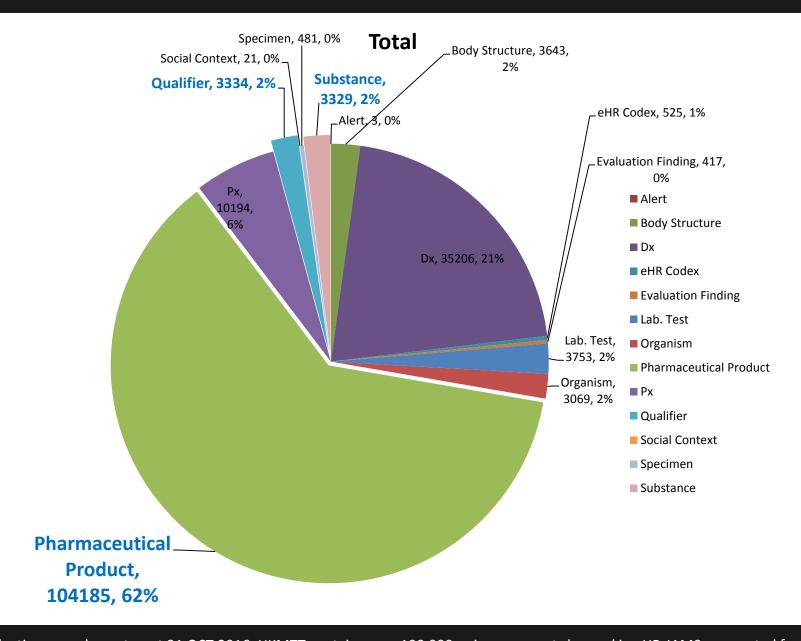
The Government of the Hong Kong Special Administrative Region

Last updated January 2015

## MTT Concept counts today

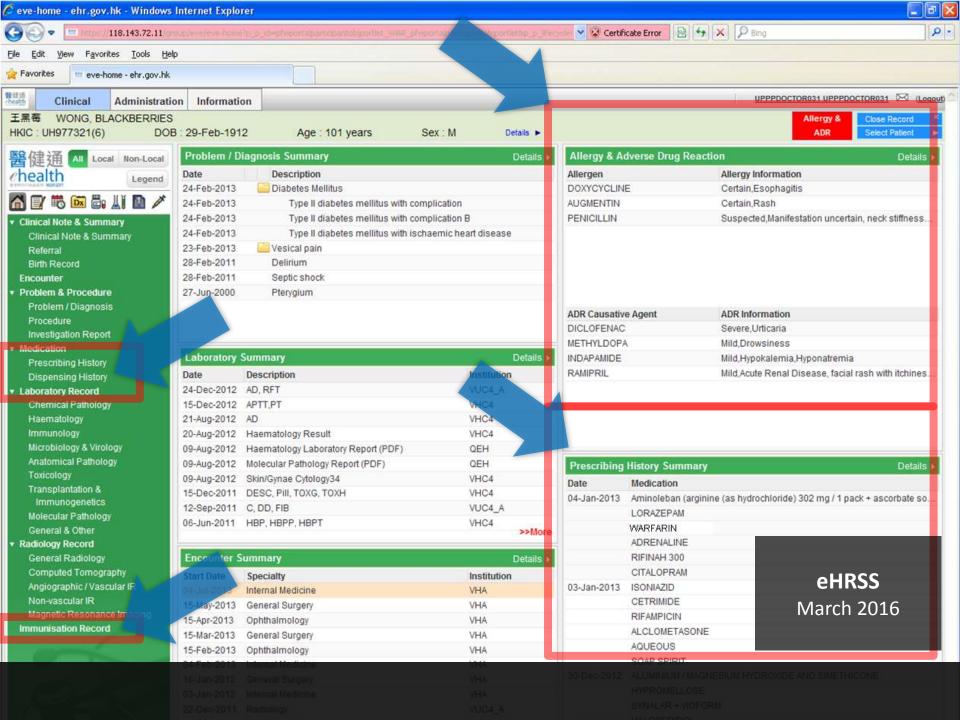


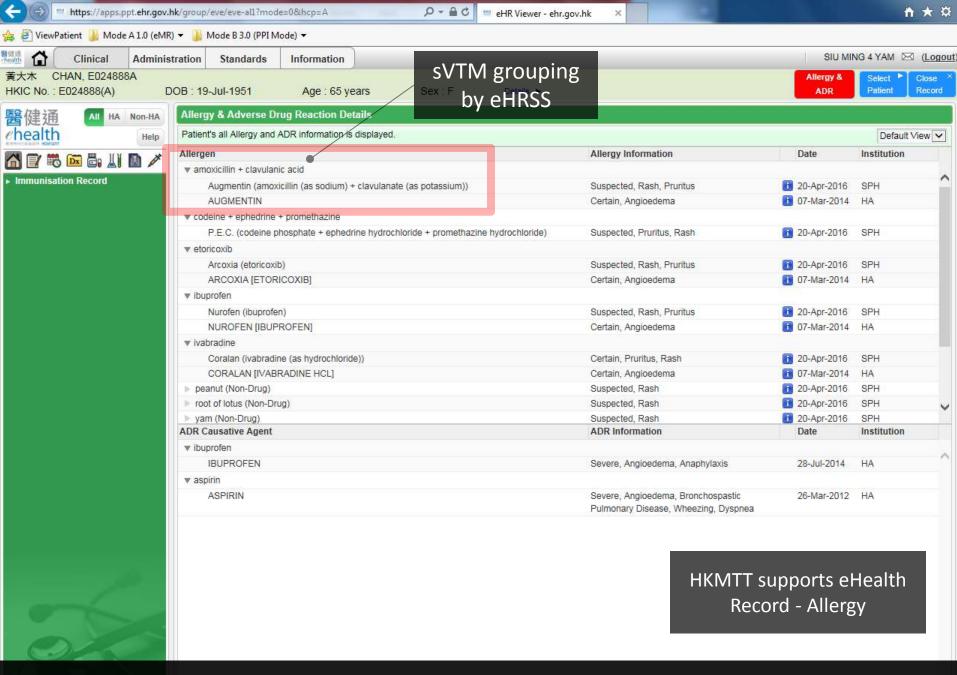
# HKMTT (Pharm product) concepts as part of HKCTT



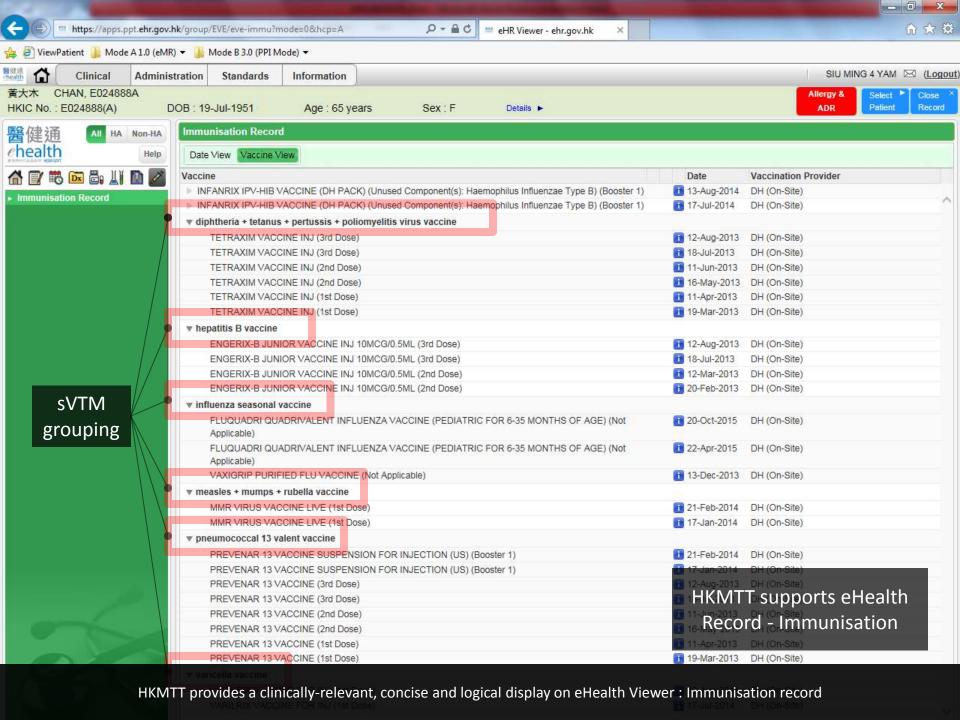
# Using standard terminology to improve medication safety and patient care

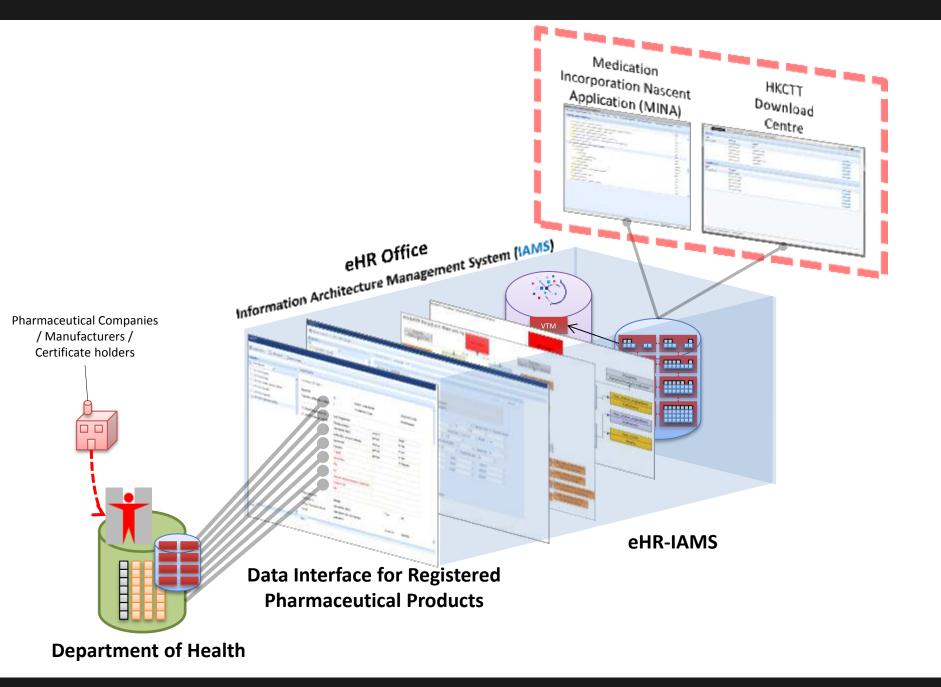


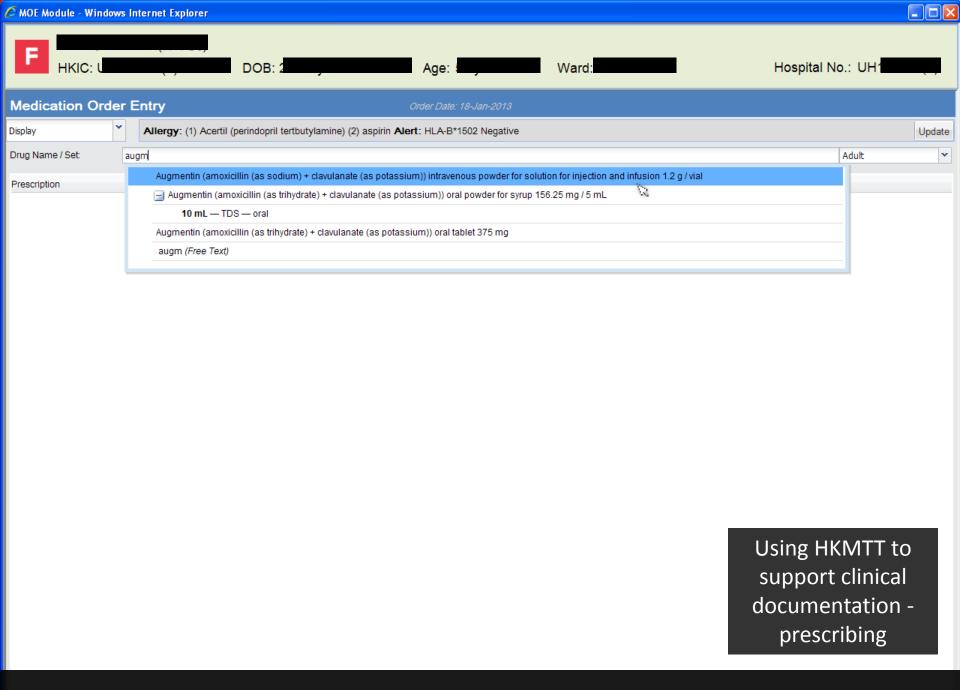


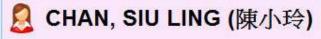


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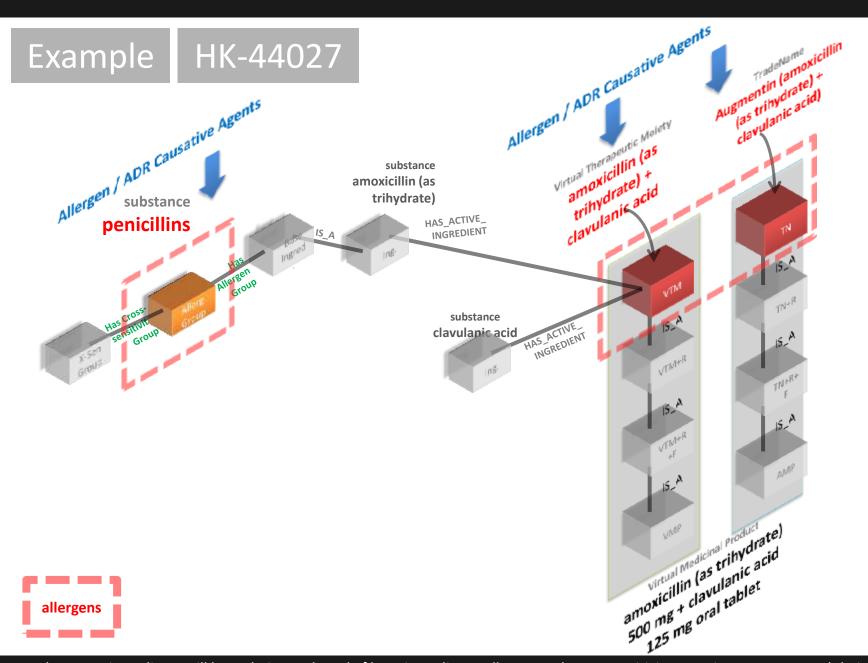
HKIC:A123456(7) DOB: 01-Jan-1991 Age: 20 years Sex: F Ward: 5A-X12 Adm: Hospital No.: A321456(7)

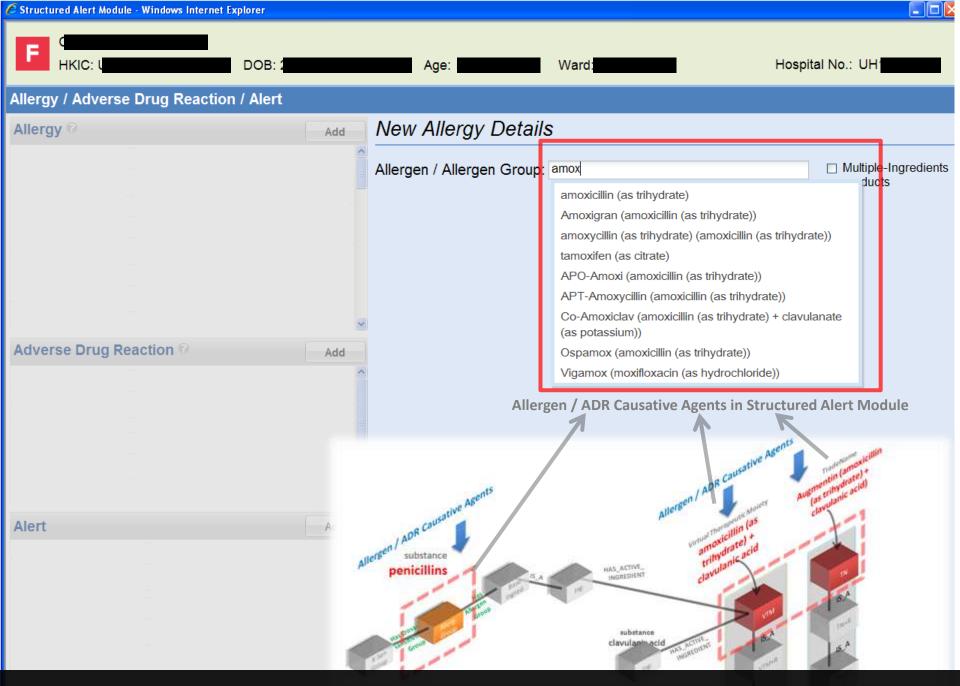
# **Medication Order Entry** Version 1.01.001 Allergy: No Known Drug Allergy Display Re-Confirm NKDA Update Drug Name: Adult Prescription Price Panadol (paracetamol) tablet - 500 mg - four times daily - as required - oral - for 1 week Telfast-D (fexofenadine hydrochloride 60 mg + pseudophedrine hydrochloride 120 mg) tablet - 1 tablet twice daily - a Same Route Same Drug 10 mL MES (ammon three times da ! The following duplication(s) are detected in the prescription: Delete? Nexium (eson Panadol (paracetamol) tablet - 500 mg - four times daily - as required - oral - for 1 week Panadol (paracetamol) syrup - 500 mg - four times daily - as required - oral - for 1 week APO-Amoxi Proceed Cancel Klacid (clarith Tegretol CR (carbamazapine) modified-released tablet - 100 mg - daily - oral - for 2 weeks Panadol (paracetamol) syrup - 500 mg - four times daily - as required - oral - for 1 week

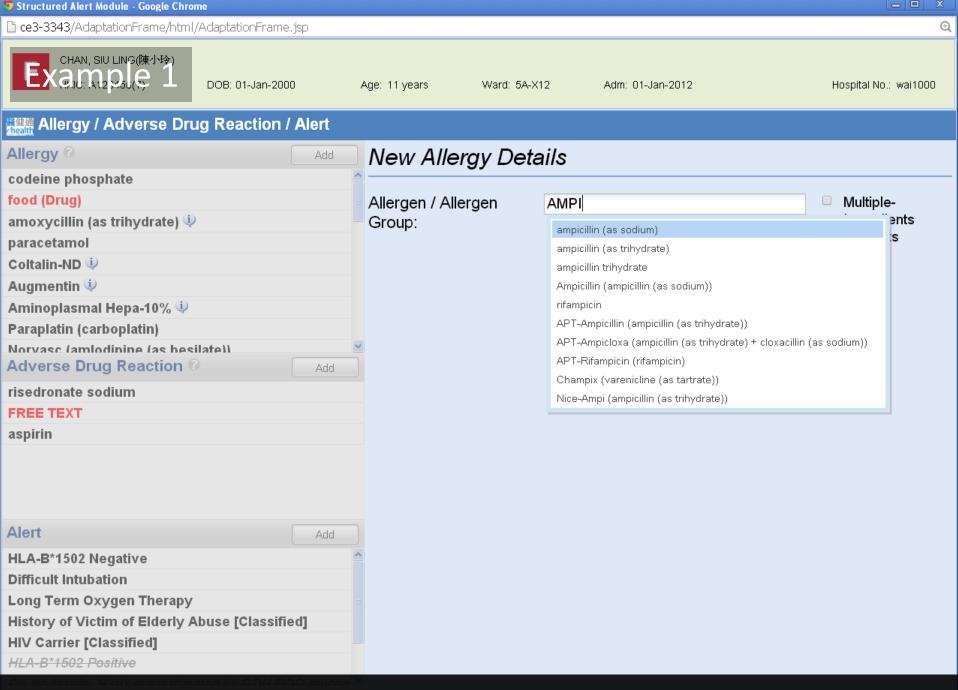
Augmentin (amoxicillin Example HK-44027 Augustum) + clavulanic (as sodium) + clavulanic Virtual Therapeutic Moiety amoxicillin (as sodium) + clavulanic substance substance amoxicillin (as trihydrate) amoxicillin HAS\_ACTIVE\_ INGREDIENT substance penicillins substance Betasubstance Has Cross**lactams** clavulanic acid HAS ACTIVE INGREDIENT VINITED IN wirtual Medicinal product 500

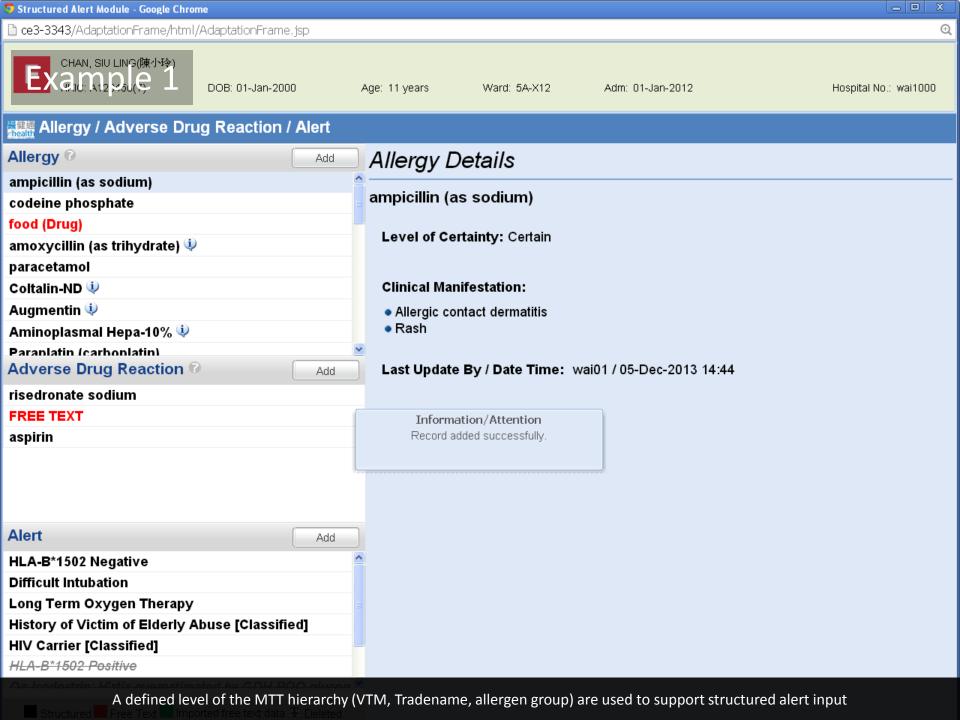
Wirtual Medicinal product 300

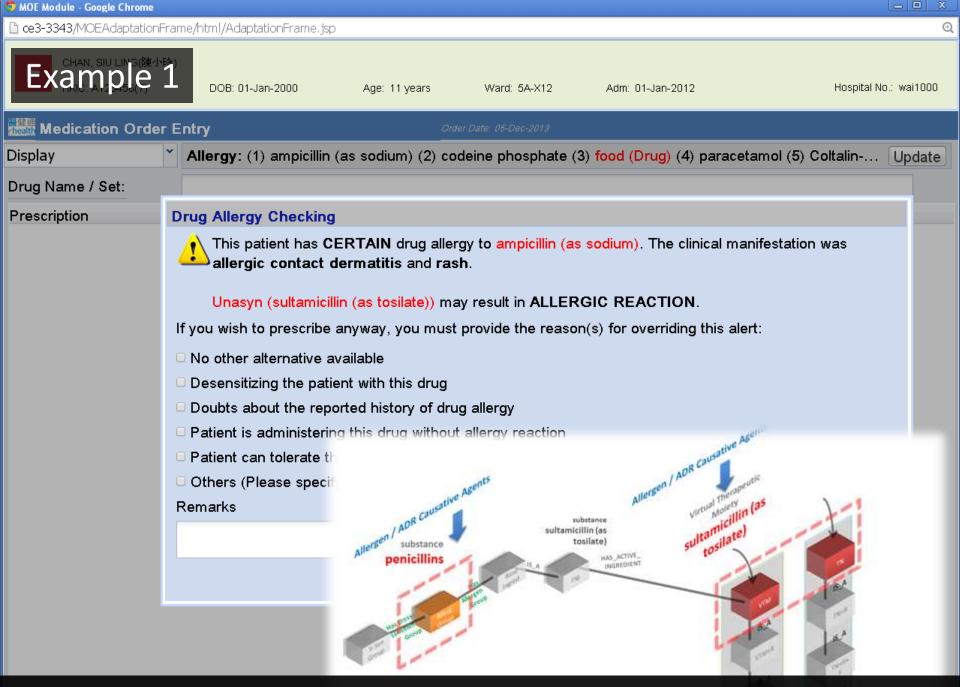
amoxicillin (as so as a second mg + clavulanic acid 125

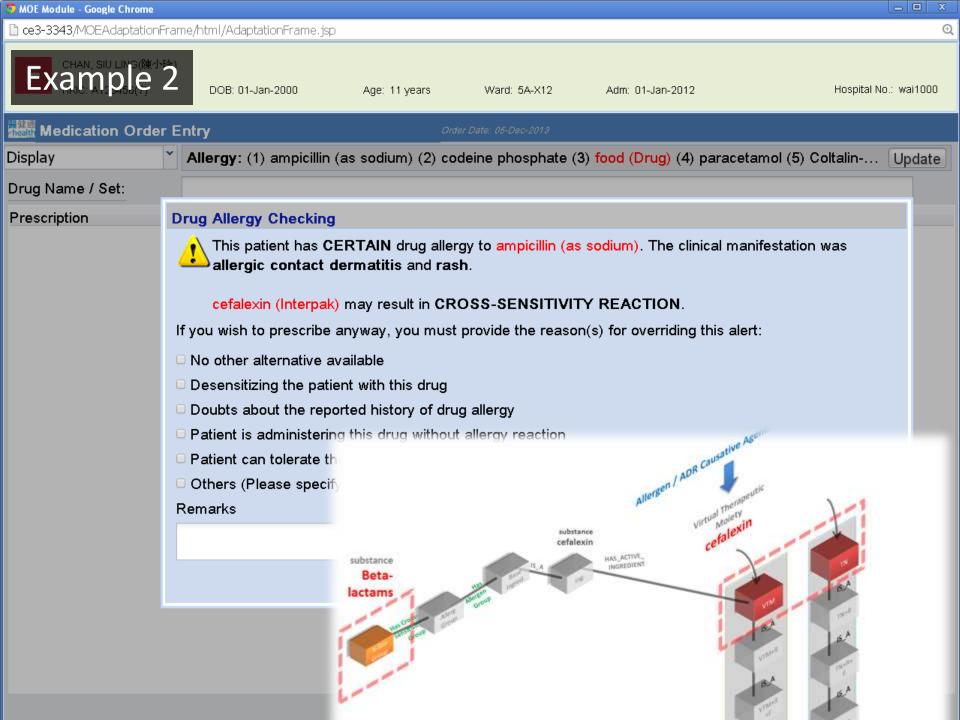












# What are the potentials of HKMTT on improving medication safety



 Continue to implement and expand the Integrated Chinese-Western Medicine Pilot Project through the HA. (FHB)

# Healthcare Service Development and Infrastructure

- Commence the development of the second stage of the Electronic Health Record Sharing System, which includes enhancement of patients' control/selection of data, development of a patient portal and addition of other sharable data (including radiological images). (FHB)
- Consider formulating a more robust policy and legislative framework to facilitate end-of-life care planning and the provision of palliative care outside hospital settings. (FHB)

# Ensuring Long-term Sustainability of Healthcare System

# What are the future challenges

- Need for a meaningful patient drug profile
- Need for secondary use of drug data to support medication use in community
- Patient portal

# What can be done

- To facilitate advanced medication process
  - MedRec : patient's active med profile
  - eRx : more choices for public
- Initiatives to facilitate pharmacy operations
  - Drug image: provide info to help identification
  - Track and trace : drug standard map to barcode

# Drug Data INTERLINK



Product info.

-HK Reg. no.

~20,000 registered drugs in HK

[DiRPP-MTT] >100,000 unique drug, substances and supporting terms

#### Legal info.

- -Classification
- -Cert. holder
- -Mgf info.

# **MTT Concept Table**

#### **Important Drug** Data

- -Virtual therapeutic moiety (VTM)
- -Base ingredient
- -Allergen group
- -Cross-sensitivity group
- -Rx: dose, strength, unit, frequency, duration
- -Vaccine indicator
- -SMOMED CT mapping

8 concepts all hierarchical / attributable relations

**eHRSS** (1° Use of data)

Structured Records

Allergy - allergen

- ~170,000 allergy and ADR records
- ~780,000 prescription items
- -20,000 clinical users
- -110,000 patients

**immunization-** system check by vaccine indicator

**Current downloadable** eHR data: allergy, ADR

Advanced Medication Process (2° Use of data)

- e-prescribing
- Medication reconciliation

#### Services Areas

- **Patient Portal**
- Public-private collaboration

eHR data compliance - Level 2 or Level 3

June

# Potentials of HKMTT on improving medication safety

# eHR standards to support PPP

Support meaningful use of eHR domain data, such as to develop **advanced medication process** to facilitate PPP initiatives

**MedRec**; facilitate; **e-prescribing** (w/ drug on-hand check); **Rx refill**; dispensing data;

Barcode

# **Enhance Medication Safety**

To enhance clinical decision support systems; extend allergen grouping checking scope; Drug for G6PD-deficiency, Pregnancy contraindication checking

# **Patient Empowerment**

#### **eHR Patient Portal**

Provide **Drug image** to facilitate patient identification and building of personal drug profile;

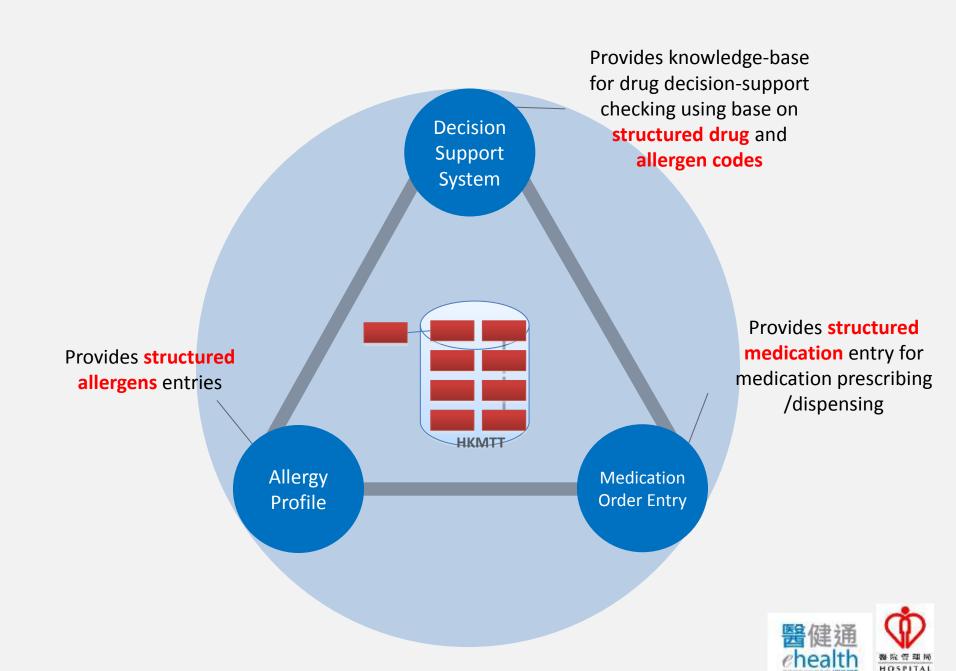
Chinese for drug and instruction to support displaying of drug related information and medication scheduling.

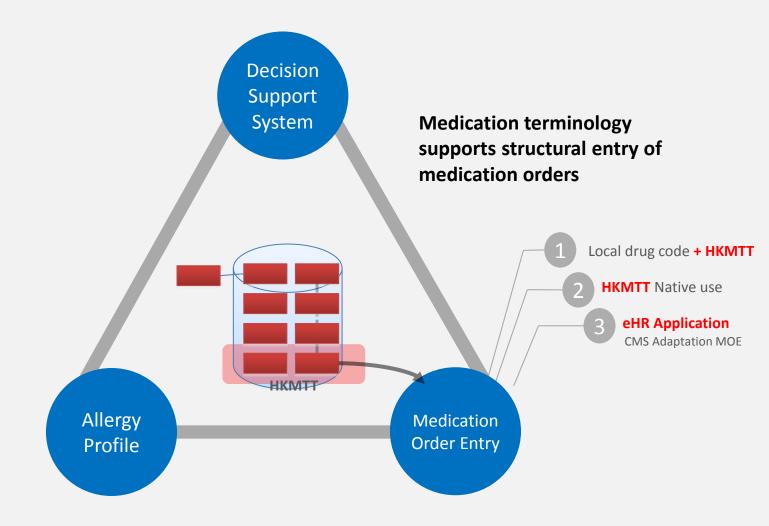
# eHR Data use for Public Health

Big data analytics in pharmacy perspectives
Epidemiology
Risk identification on drug-perspective
e.g. Drug-related admission (by HARRPE scoring)

# How to enhance medication safety with eHR drug standards?

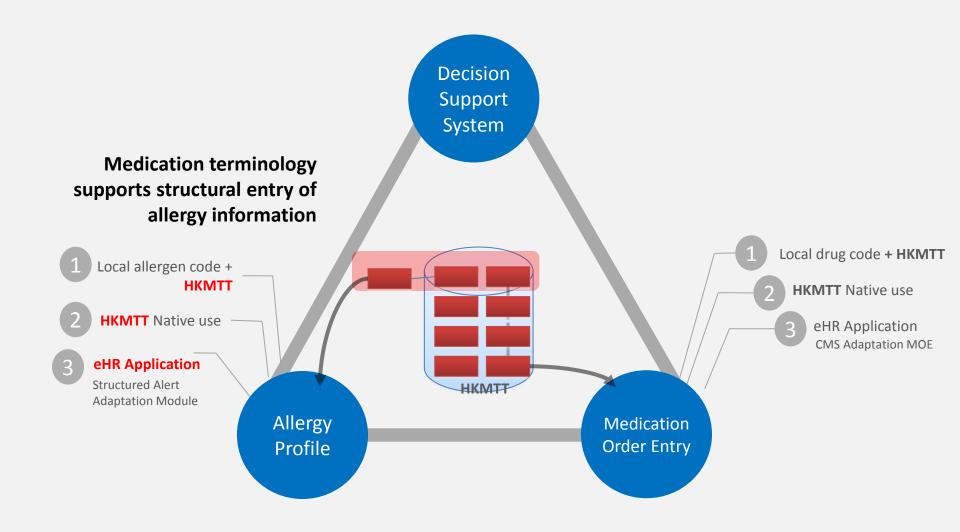




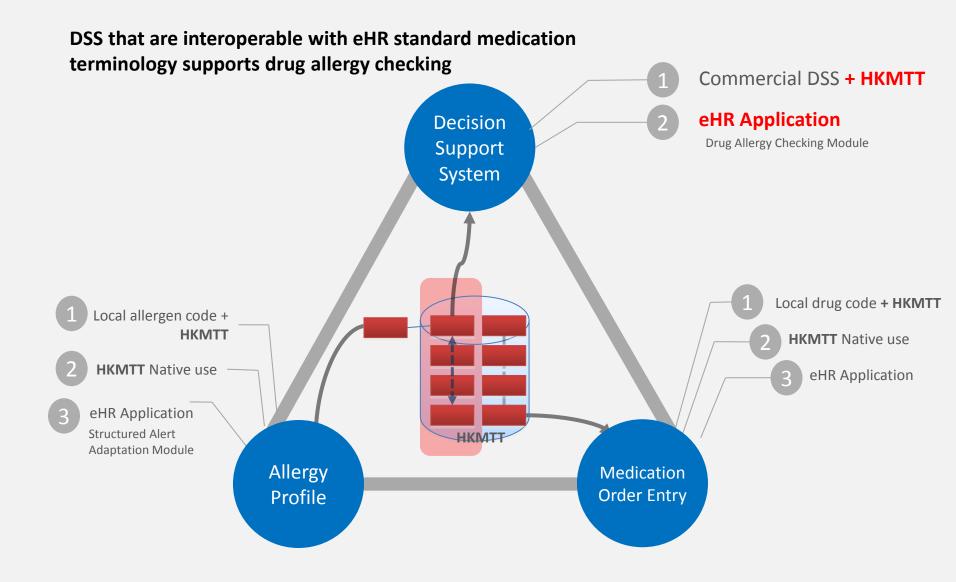




# Enhancing medication safety with eHR Medication terminology

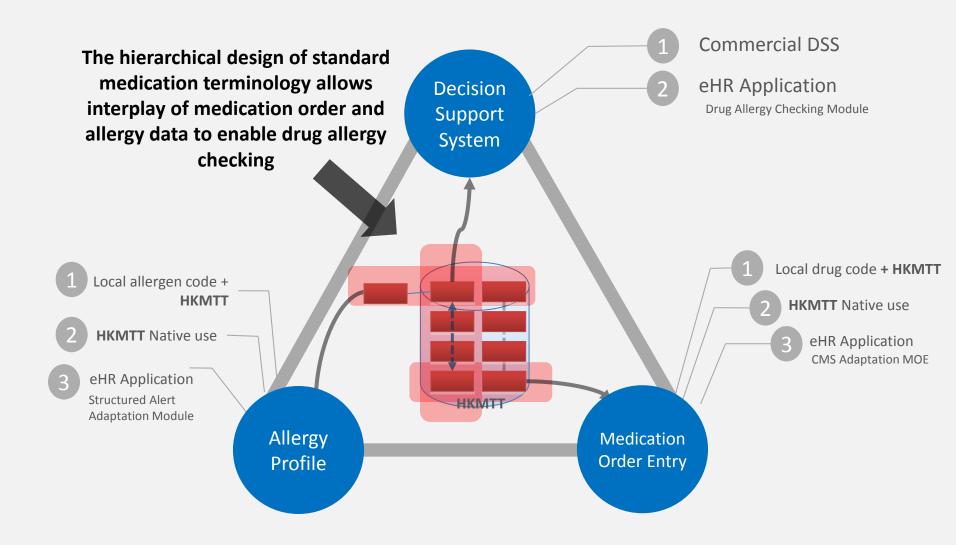








## Enhancing medication safety with eHR Medication terminology





# Summary

- Medication terminology is vital in providing a territory-wide standard that
  is descriptive enough to allow identification and classification, whilst
  unambiguous, concise, and clinically relevant, ultimately supports
  connectivity and interoperability onto Hong Kong electronic Health Record
  Sharing System (eHRSS)
- Hong Kong Medication Terminology Table (HKMTT) provides essential codified knowledge to enable clinical practice, with safety element instilled into each structure and content to enhance medication safety
- HKMTT provides opportunities for the provision of drug education content to eHR participants via patient portal; provision of medication information to healthcare providers via eHR applications – support clinical decisionmaking

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