

Walk through on the use of

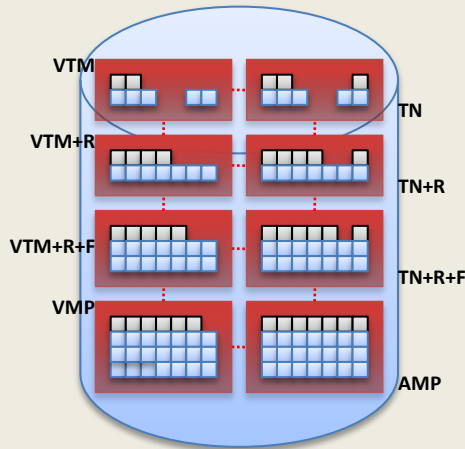
HKMTT and Demonstration

on CMS Adaptation Modules

Connie Lau
Pharmacist
Hospital Authority

The uses of Hong Kong Medication Terminology Table (HKMTT)

HKMTT is the HK-wide eHR Drug standards to identify the registered pharmaceutical products used in Hong Kong.



HKMTT high level model

Which activities can HKMTT be applied to ?

Drug records sharing

Prescribing

This Session

Dispensing

Drug allergy documentation

Medication decision support

This Session

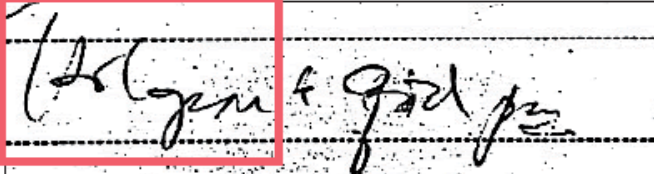
Why electronic prescribing?

05/11/190
 Vers. A d
 de. No 20
 by handypaper 1.2.12
 let no 0.12.12
 no/nd
 4

in Bottle 32
 or handypaper
 or 0.12.12
 for 1/2 of 1/2
 + 1/2 of 1/2
 in Calambur 1/2
 Par-dover 1/2
 Bin-Sun-Da
 1/2 of 1/2
 1/2 of 1/2

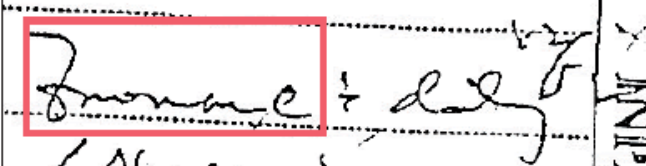
70
 ① Polysine 40mg 1/2 x 1/2
 ② Aspirin 100 1/2
 ③ Red Flow to 1/2
 ④ All 940 1/2
 ⑤ Key out = 75%

1 Dologesic (廣效止痛藥, 治頭痛肚痛) 還是 Holopon (針對腸胃痛的止痛藥)?



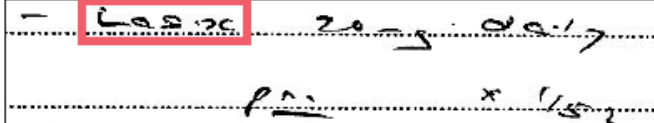
【答案：Holopon ÷ qid prn】

2 Imovane (安眠藥) 還是 Enervon C (維他命)?



【答案：Enervon C ÷ daily x 2/52】

3 Losec (胃藥) 還是 Lasix (利尿藥)?



【答案：Lasix 20mg daily prn x 1/52】

Medication Order Entry Module (MOE)

Indication

Contraindications

Side effects

Dosage

Dosing Frequency

Treatment duration

Love Hospital
123 Peak Road
Hong Kong
2134-5678

Name Chan Tai Man (F, 20 y/o)
HKID A123456(7)
Address Rm A, 10F, Good Garden
Date 26 Sept 11

R_x

1. *Panadol 500mg QID prn PO x 1 week*
2. *Telfast-D 1 tablet BD prn PO x 1 week*
3. *MES 10mL TDS prn PO x 7 week*

CT Chan
Dr. CT Chan



1. Medication safety
2. Efficient prescribing
3. Simple to use

eHR MOE

Features of the MOE

Medication safety

Efficient prescribing

Simple to use

R_x

Zinnat tab 250 mg BD PO x 1 week



F CHAN, SIU MAN(陳小雯)
HKIC: UH987654(1) DOB: 24-May-1958 Age: 54 years Ward: 5A-X12 Hospital No.: 147252

Medication Order Entry Order Date: 15-Jan-2013

Display **Allergy:** No Known Drug Allergy

Drug Name / Set: Adult

Prescription

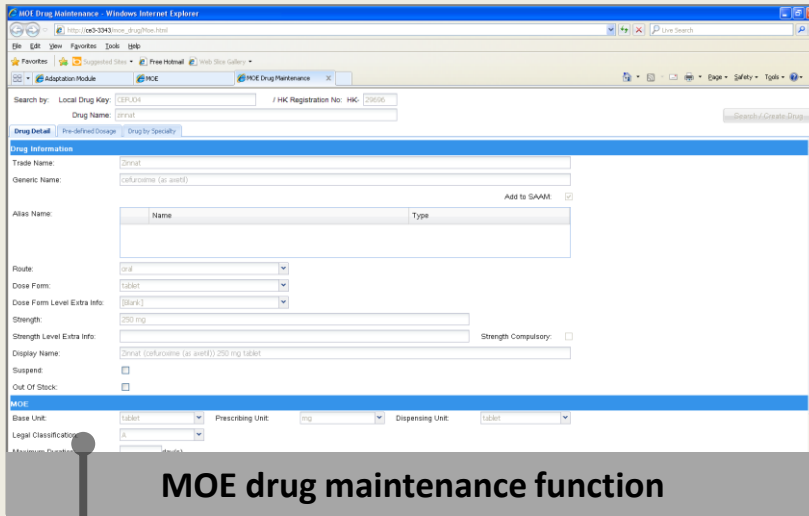
1. Dose form level prescribing / defaulted dosage unit/ defaulted route of administration

Features of the MOE

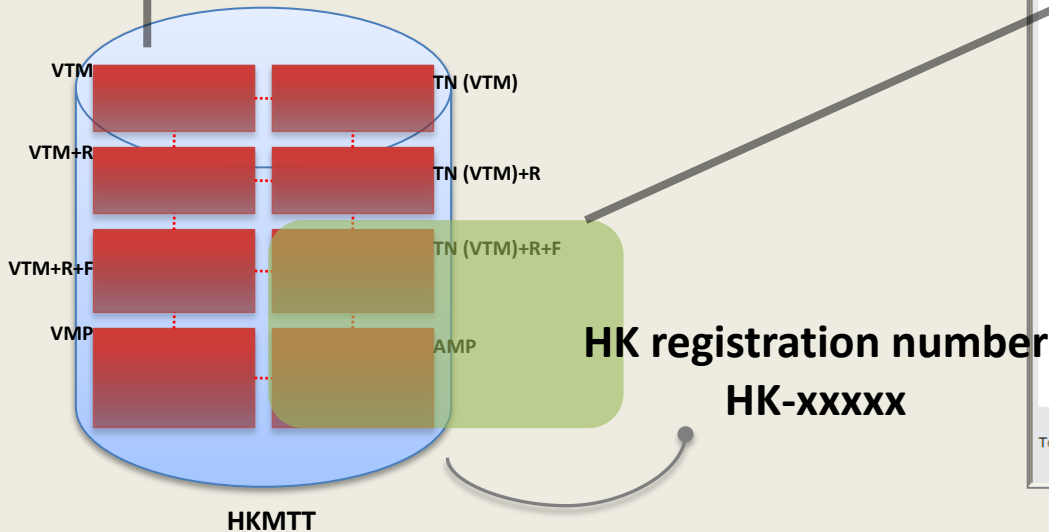
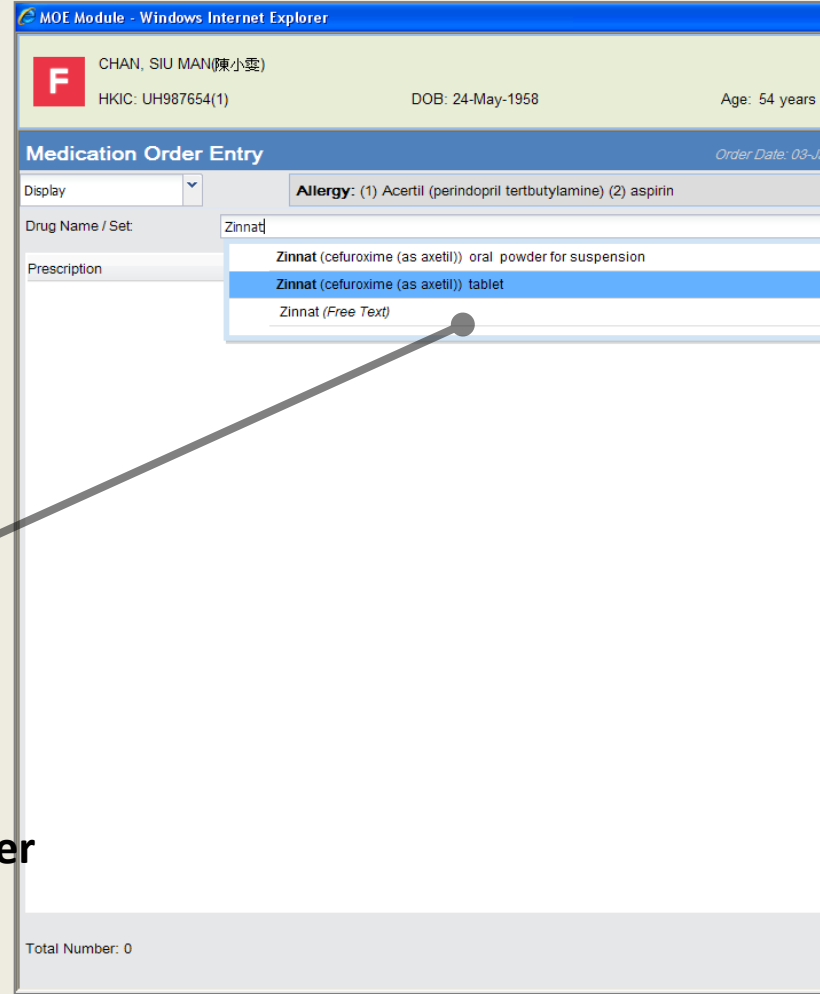
Medication safety

Efficient prescribing

Simple to use



supports



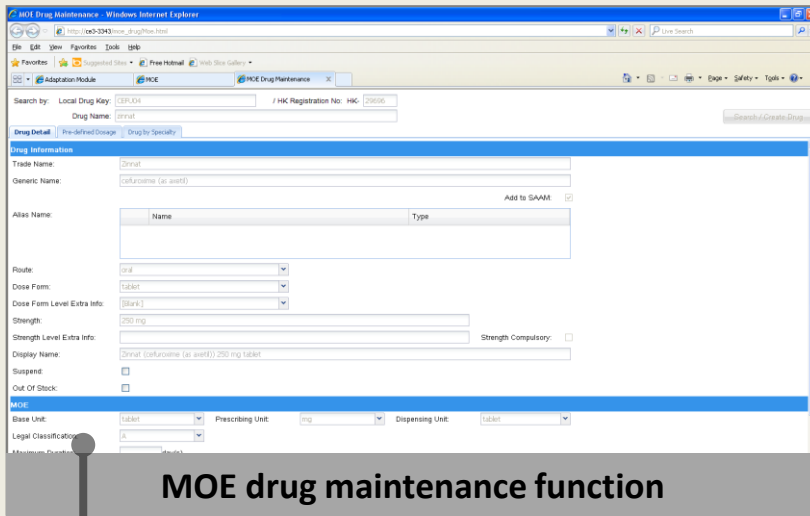
How to make use of the HKMTT?

Features of the MOE

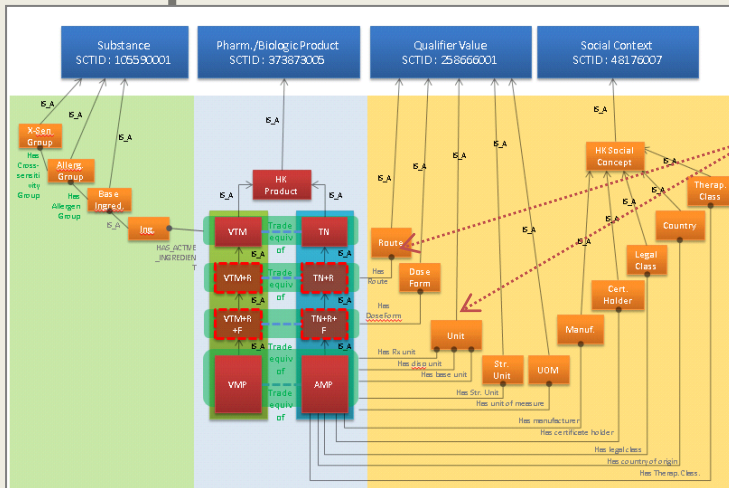
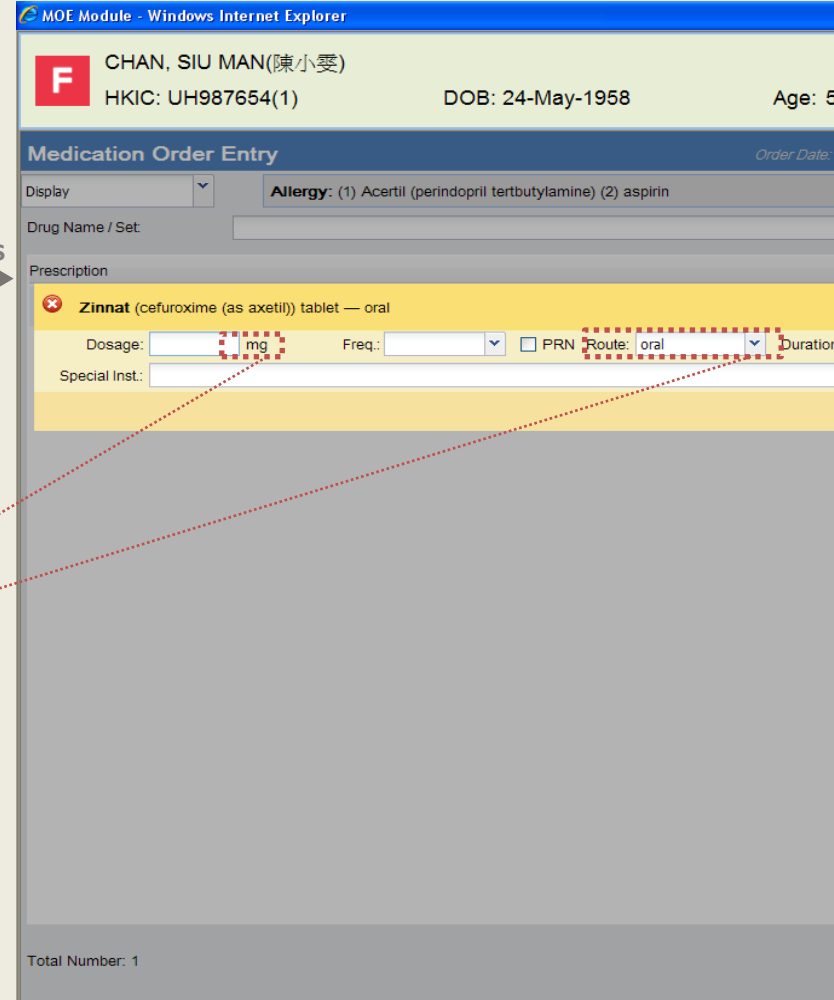
Medication safety

Efficient prescribing

Simple to use



supports



How to make use of the HKMTT?

Other features of the MOE

Medication safety

Efficient prescribing

Simple to use

Predefined dosage / repeat from drug history / My favourite


F CHAN, SIU MAN(陳小雯)
HKIC: UH987654(1) DOB: 24-May-1958 Age: 54 years Ward: 5A-X12 Hospital No.: 987654

Medication Order Entry Order Date: 16-Jan-2013

Display **Allergy: amoxicillin (as trihydrate)**

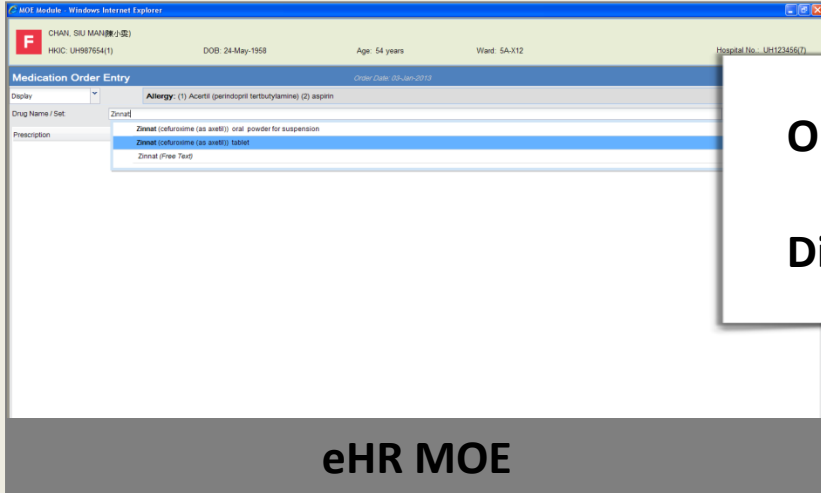
Drug Name / Set

Prescription

 **Panadol** (paracetamol) tablet — **500 mg** — four times daily — oral — for 4 weeks

Total Number: 1

eHR MOE module and CMS on-ramp Application



Out-patient medications

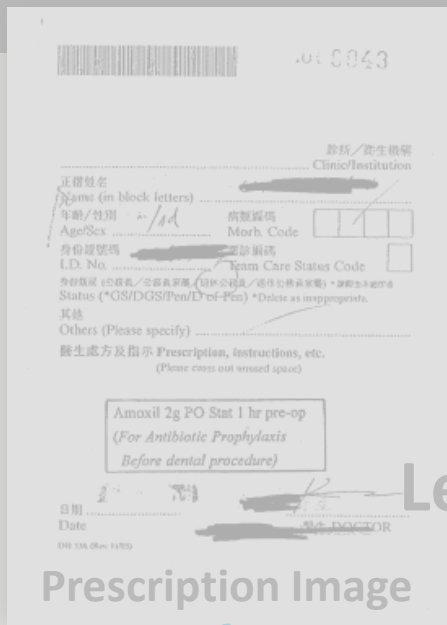
Discharged medications



Private solo practice providers

Private group practice providers

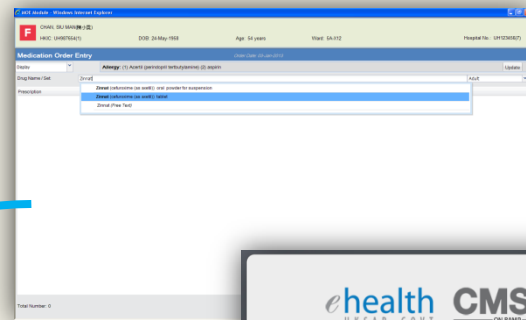
- ✓ Patient registration
- ✓ Appointment booking
- ✓ Consultation
- ✓ Prescribing
- ✓ Dispensing



Prescription Image

Level 1

No prescription info, scanned Rx image only



eHR MOE



eHR CMS On-Ramp

Level 3

Coded information, full / partial interoperability

Level 3

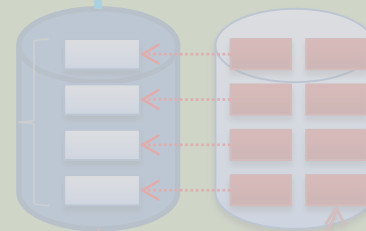


Local drug information database

non-coded text information

Level 2

No mapping



Local drug information database

Mapped to MTT concepts

Submitting your Prescribing Record

Who are the users of MOE and CMS on-ramp Application?



Mid-2013:
Department of Health (designated clinics)

Show interests:

- Canossa Hospital
- Evangel Hospital
- Hong Kong Adventist Hospital
- Tsuen Wan Adventist Hospital
- Precious Blood Hospital

eHR MOE



ehealth HKSAR GOVT CMS ON RAMP

Currently:

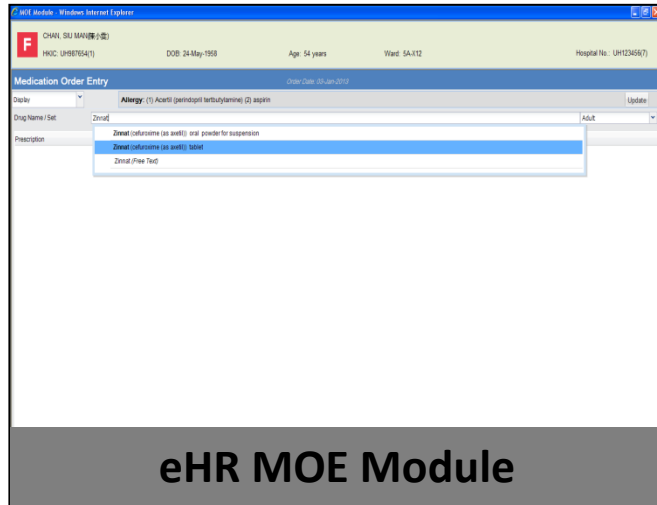
- 9 private solo practice doctors
- 2 group practice healthcare providers

Login

Kowloon Bay Clinic English 中文

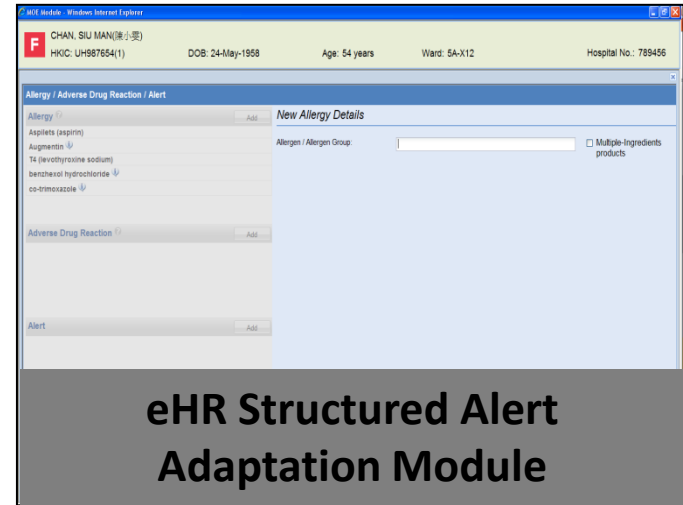
CMS On-ramp Application

Drug Allergy Checking System



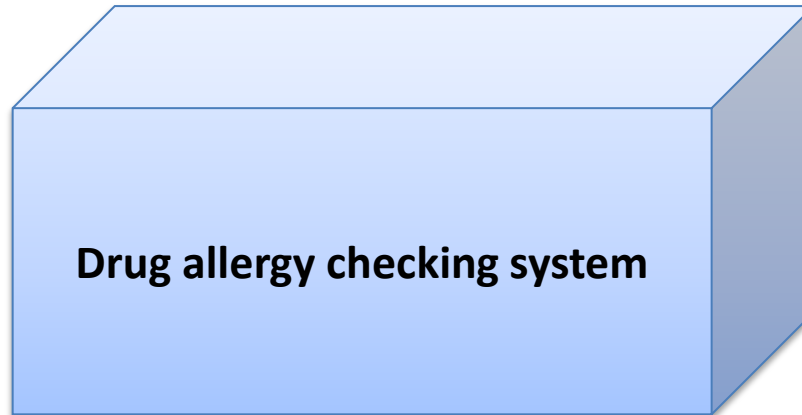
The screenshot shows a web browser window titled "eHR Module - Windows Internet Explorer". The patient information at the top includes: CHAN, SIU MAN (陳少雲), HKIC: UH987654(1), DOB: 24-May-1958, Age: 54 years, Ward: 5A-X12, and Hospital No.: UH1234567. The main section is "Medication Order Entry" with a "Prescription" dropdown menu. The dropdown is open, showing a list of items: "Zinet (cefuroxime (as salt)) oral powder for suspension", "Zinet (cefuroxime (as salt)) tablet", and "Zinet (Pike Test)".

eHR MOE Module



The screenshot shows a web browser window titled "eHR Module - Windows Internet Explorer". The patient information at the top includes: CHAN, SIU MAN (陳少雲), HKIC: UH987654(1), DOB: 24-May-1958, Age: 54 years, Ward: 5A-X12, and Hospital No.: 789456. The main section is "Allergy / Adverse Drug Reaction / Alert". It features a "New Allergy Details" form with fields for "Allergy" (with a dropdown menu), "Allergen / Allergen Group" (with a text input field), and a checkbox for "Multiple-Ingredients products". Below this, there are sections for "Adverse Drug Reaction" and "Alert", each with a dropdown menu and an "Add" button.

eHR Structured Alert Adaptation Module



Documenting an allergen



CHAN, SIU MAN(陳小曼)

HKIC: UH987654(1)

DOB: 24-May-1958

Age: 54 years

Ward: 5A-X12

Hospital No.: 987654

Medication Order Entry

Order Date: 07-Jan-2013

Display

Allergy: amoxicillin (as trihydrate)

Drug Name / Set:

Adult

Prescription

MOE Module - Windows Internet Explorer

CHAN, SIU MAN(陳小曼)
HKIC: UH987654(1) DOB: 24-May-1958 Age: 54 years Ward: 5A-X12 Hospital No.: 987654

Allergy / Adverse Drug Reaction / Alert

Allergy <input type="button" value="Add"/>	Allergy Details
amoxicillin (as trihydrate)	amoxicillin (as trihydrate)
	Level of Certainty: Certain
	Clinical Manifestation:
	• Angioedema
	Last Update By / Date Time: User 01 / 07-Jan-2013 14:57
Adverse Drug Reaction <input type="button" value="Add"/>	
Alert <input type="button" value="Add"/>	

eHR SAAM

Prescribing a drug that the patient may be allergic to



CHAN, SIU MAN (陳秀文)

HKIC: UH987654(1)

DOB: 24-May-1958

Age: 54 years

Ward: 5A-X12

Hospital No.: 987654

Medication Order Entry

Order Date: 07-Jan-2013

Display

Allergy: amoxicillin (as trihydrate)

Update

Drug Name / Set

cloxacillin

Adult

cloxacillin (as sodium) (Vickmans) capsule

ticloxacillin (as sodium) (Athione) powder for elixir

cloxacillin (Free Text)

Prescription

Allergy Alert Prompt



CHAN, SIU MAN(陳小雯)

HKIC: UH987654(1)

DOB: 24-May-1958

Age: 54 years

Ward: 5A-X12

Hospital No.: 987654

Medication Order Entry

Order Date: 07-Jan-2013

Display

Allergy: amoxicillin (as trihydrate)


Drug Name / Set

Adult

Prescription

Drug Allergy Checking

This patient has **CERTAIN** drug allergy to **amoxicillin (as trihydrate)**. The clinical manifestation was **angioedema**.



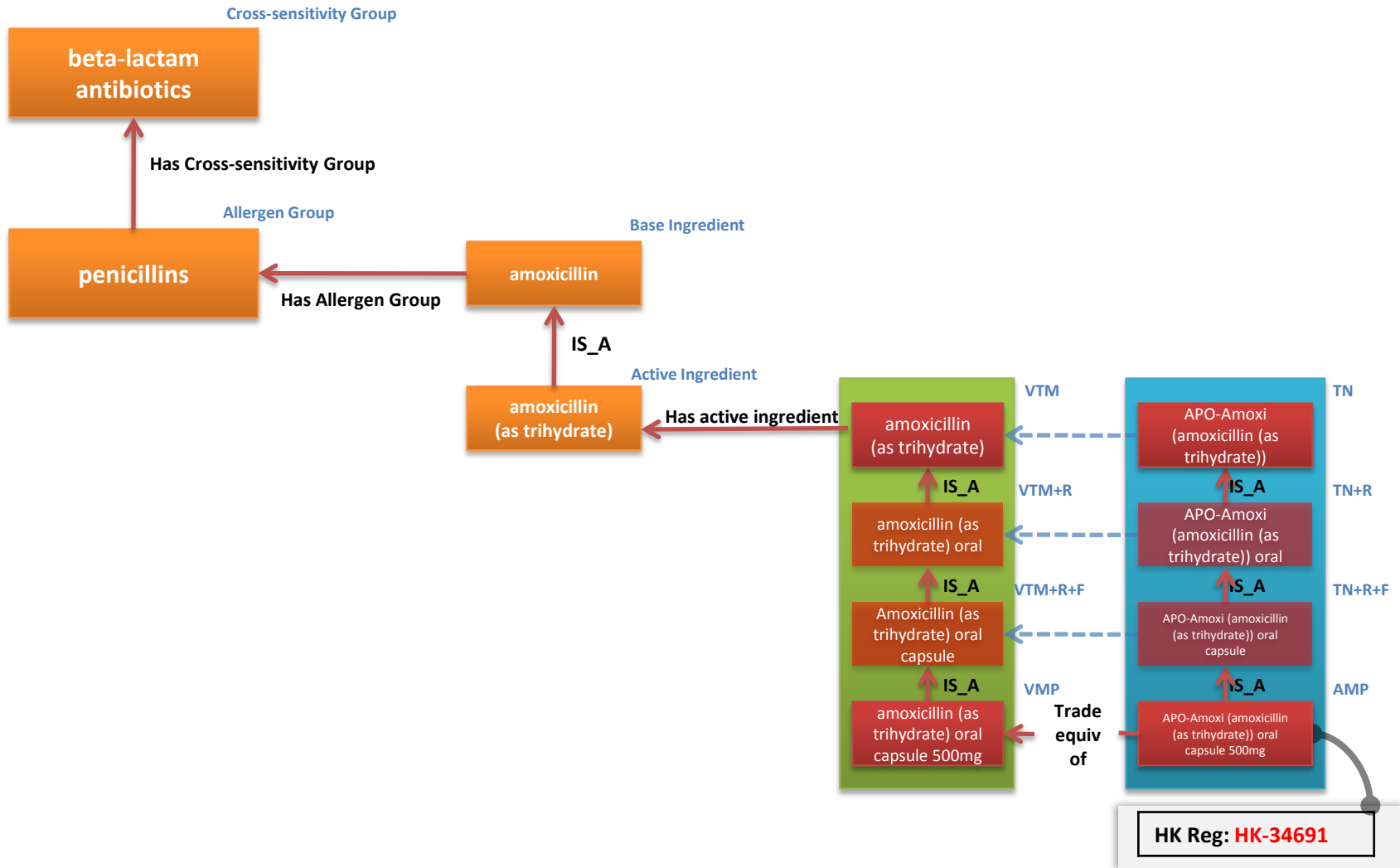
cloxacillin (as sodium) (Vickmans) may result in **ALLERGIC REACTION**.

If you wish to prescribe anyway, you must provide the reason(s) for overriding this alert:

- No other alternative available
- Desensitizing the patient with this drug
- Doubts about the report history of drug allergy
- Patient is administering this drug without allergic response
- Patient can tolerate the drug at lower dose
- Others (Please specify reason below)

Remarks

How does it work?



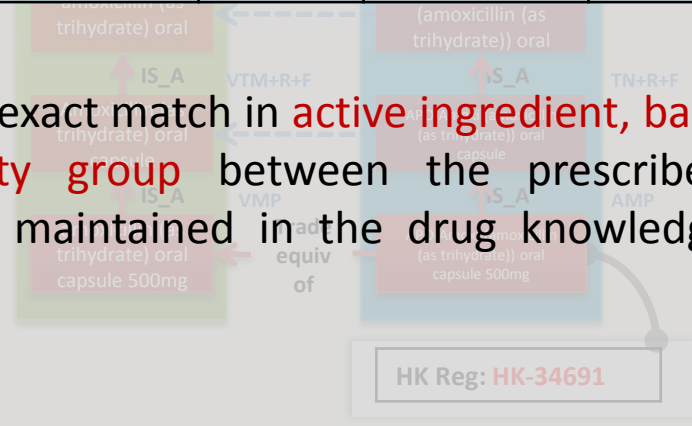
HKMTT supports Drug Allergy Checking

How does it work?

Drug knowledge database of drug allergy checking system

HK Reg	VMP	...	VTM	TN	Active Ingrd	Base Ingrd	AllergenGp	X-sensitivityGp
34691	amoxicillin (as trihydrate) oral capsule 500mg	IS_A	amoxicillin (as trihydrate)	APO-Amoxi (amoxicillin (as trihydrate))	amoxicillin (as trihydrate)	amoxicillin	penicillins	beta lactam antibiotics
	6423431		6901234	6890123	6701234	6501233	6888888	6999999
23456	cloxacillin (as sodium) oral capsule 500 mg		cloxacillin (as sodium)	cloxacillin (as sodium) (Vickmans)	cloxacillin (as sodium)	cloxacillin	pencillins	beta lactam antibiotics
	6423400		6901238	6890127	6701238	6501237	6888888	6999999
29697	Zinnat (cefuroxime axetil) oral tablet 500mg	IS_A	cefuroxime axetil	Zinnat (cefuroxime axetil)	cefuroxime axetil	cefuroxime	cephalosporins	beta lactam antibiotics
	6312345		6901235	6890124	6701235	6501234	6815345	6999999
02609	Lithiofor (lithium (as sulphate)) modified-release tablet 660mg	IS_A	lithium (as sulphate)	Lithiofor (lithium (as sulphate))	lithium (as sulphate)	lithium	lithium analogues	lithium analogues
	6234579		6901236	6890125	6701236	6501235	6823456	6912345

The drug allergy reaction is inferred if there is an exact match in **active ingredient, base ingredient, allergen group** or **cross sensitivity group** between the prescribed medication and an allergen, which have been maintained in the drug knowledge database built by the eHR.



Data examples of HKMTT

Drug Allergy Checking Mechanism

CHAN, SIU MAN(陳小曼)

HKIC: UH987654(1)

DOB: 24-May-1958

Age: 54 years

Ward: 5A-X12

Hospital No.: 987654

Medication Order Entry

Or Documenting Allergen...

Allergy: amoxicillin (as trihydrate)

VTM: 6901234

cloxacillin (as sodium) (Vickmans) capsule

amoxicillin (as trihydrate)

flucloxacillin (as sodium) (Athlone) powder for elixir

cloxacillin (Free Text)

Ordering Medication
TN(VTM)+R+F: 6234567
cloxacillin (as sodium) oral capsule

Drug knowledge database of drug allergy checking system							
TN(VTM)+R+F	...	VTM	TN	Active Ingrd	Base Ingrd	AllergenGp	X-sensitivityGp
6423431	IS_A	6901234	6890123	6701234	6501233	6888888	6999999
6312345	IS_A	6901235	6890124	6701235	6501234	6888888	6999999
6234579	IS_A	6901236	6890125	6701236	6501235	6888888	6999999
6234578	IS_A	6901237	6890126	6701237	6501236	6888888	6999999
6234567	IS_A	6901238	6890127	6701238	6501237	6888888	6999999

Drug Allergy Checking

This patient has **CERTAIN** drug allergy to **amoxicillin (as trihydrate)**. The clinical manifestation was **angioedema**.

cloxacillin (as sodium) (Vickmans) may result in **ALLERGIC REACTION**.

If you wish to prescribe anyway, you must provide the reason(s) for overriding this alert:

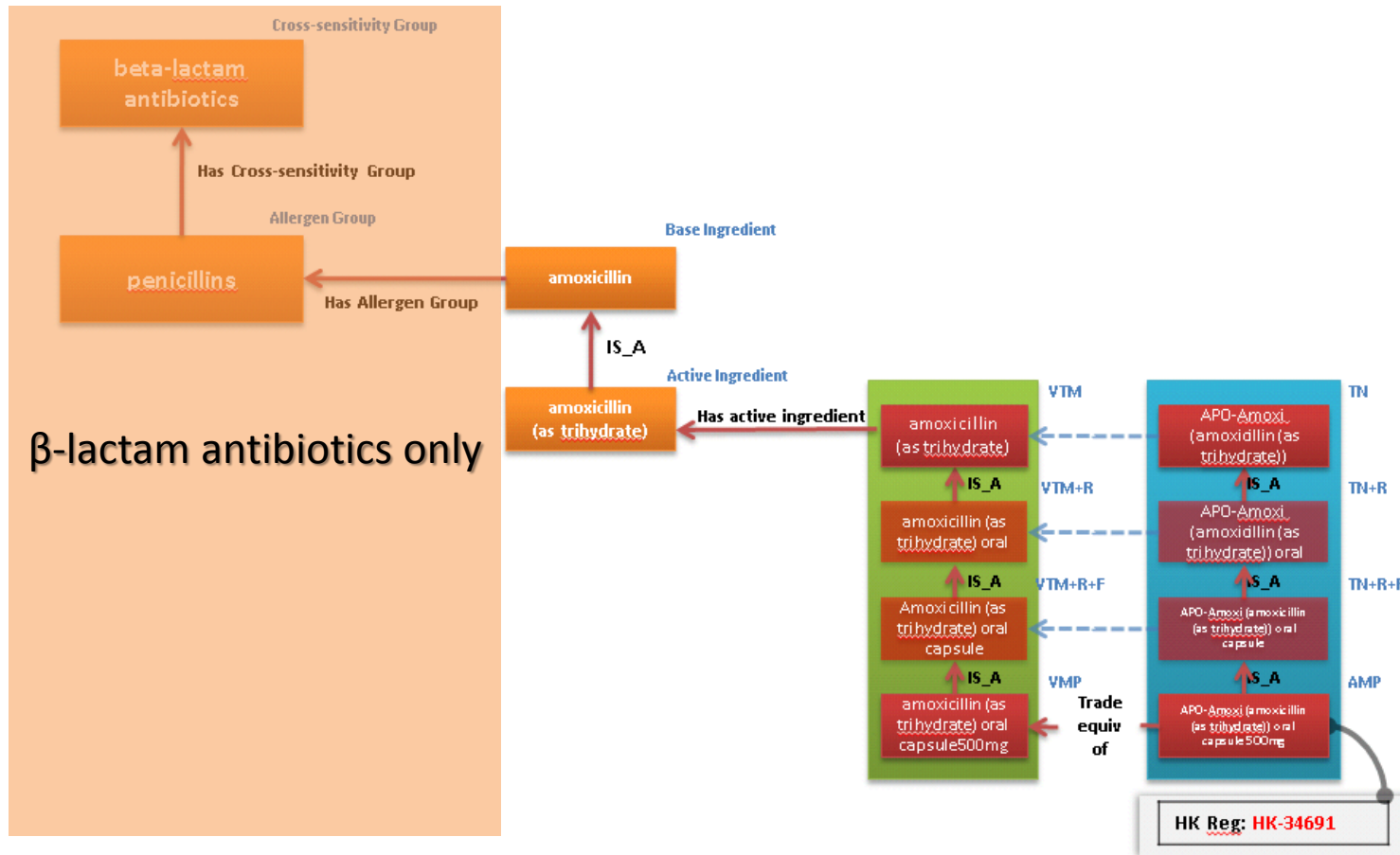
- No other alternative available
- Desensitizing the patient with this drug
- Doubts about the report history of drug allergy
- Patient is administering this drug without allergic response
- Patient can tolerate the drug at lower dose
- Others (Please specify reason below)

Remarks



Allergy alert result

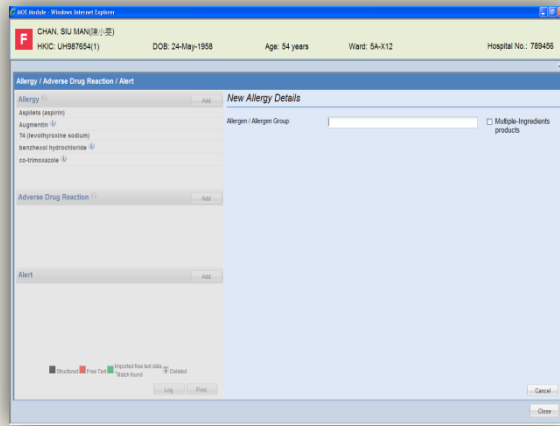
The scope of drug allergy checking at Phase 1



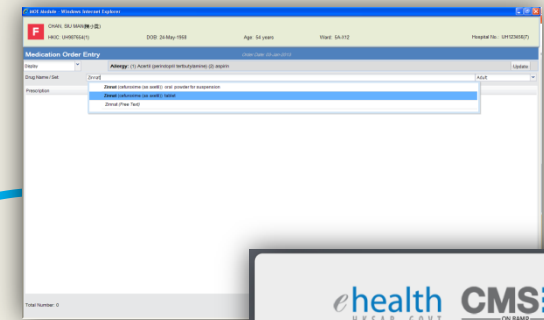
Limited scope of checking on same ingredient and specific allergen group (i.e. β-lactam antibiotics only).

For example, **losartan** and **valsartan** are not β-lactam antibiotics. If a patient is allergic to **losartan**, **no** alert message will be returned if prescribe **valsartan**.

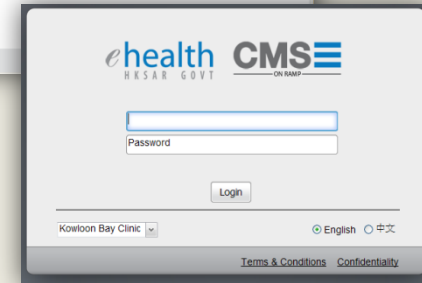
Summary



eHR SAAM



eHR MOE



eHR CMS On-Ramp

Level 3

Level 3



Full interoperability

Full interoperability

Drug allergy checking system for checking allergic reaction between β -lactam antibiotics is available from eHR Office.

(Pharmacy system is NOT included in the current scope of eHR clinical system development)

Prescribing / Allergy Record

Thank you.