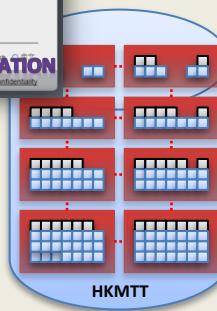


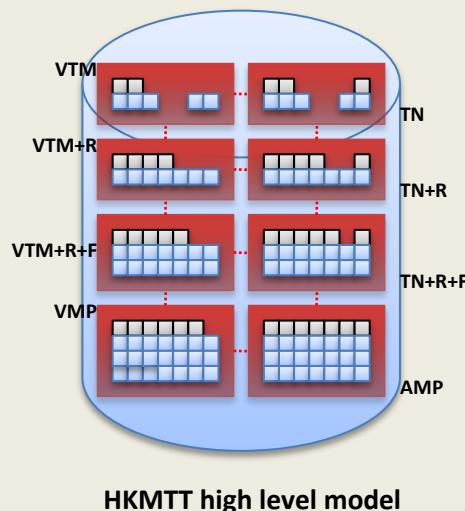
Walk through on the use of HKMTT and Demonstration on CMS Adaptation Modules

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.



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?

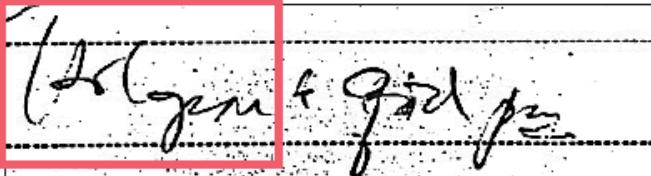
2011/11/19
Rev. 11
dr. No 20
by hand by ap. 1.2.12
ent no S. 12 we
no 11111

P Reg. No. 3-2
or hand by ap. 1.2.12
or oral 3x
For y get xx
+ see Aco

Calumba 60mg
Paracetamol
Bismuth Subgallate
Oral
Bismuth Subgallate

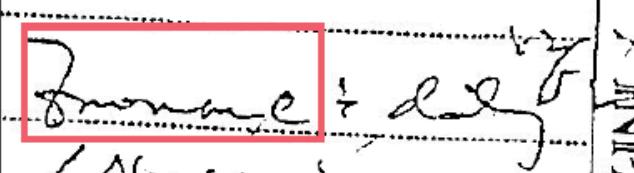
① Dafusin 40mg H x 1 stat
② Ethicalat MD 140
③ Red Flax to 88
④ Nels 940 Albuterol/Albuterol
⑤ Buy out > 75% we

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



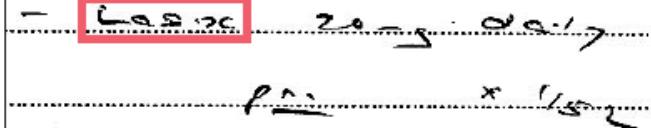
【答案：Holopon ÷ qid prn】

2 Imovane (安眠藥) 還是 Enervon C (維他命) ?



【答案：Enervon C ÷ daily × 2/52】

3 Losec (胃藥) 還是 Lasix (利尿藥) ?



【答案：Lasix 20mg daily × 1/52】



Medication Order Entry Module (MOE)

Indication

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

RX

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

Contraindications

Treatment duration

Dosage

Side effects

Dosing Frequency



Medication Order Entry

CHAN, SIU MAN (F, 20)
HKID: UH987654(1) DOB: 24-May-1958 Age: 54 years Ward: SA-X12 Hospital No.: UH123456(7)

Prescription:

- Amoxicillin 500mg Tab po qid x 1 week
- Promethazine 10mg Tab po bd x 1 week

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

eHR MOE

Features of the MOE

Medication safety

Efficient prescribing

Simple to use

RX

Zinnat tab 250 mg BD PO x 1 week



CHAN, SIU MAN(陳小曼)
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	Re-Confirm NKDA	Update
Drug Name / Set:	Adult		

Prescription

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

Features of the MOE

Medication safety

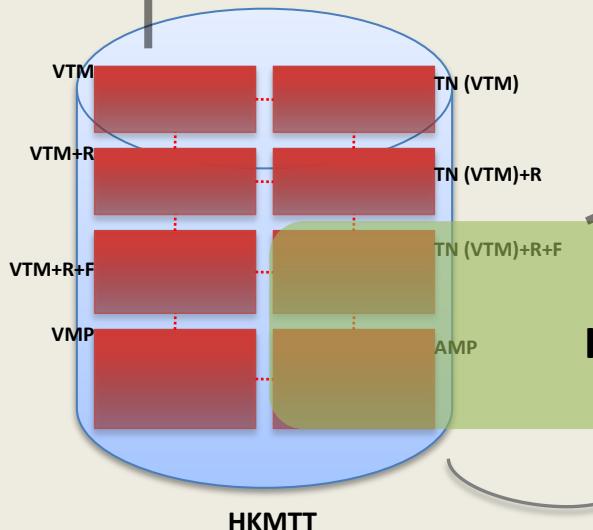
The screenshot shows the 'MOE Drug Maintenance' interface. A search bar at the top has 'Zinnat' entered. Below it, a table displays drug details: Trade Name (Zinnat), Generic Name (Cefuroxime (as axetil)), Alias Name (None), Route (oral), Dose Form (tablet), Strength (250 mg), and Strength Level (250 mg). The 'Drug Detail' tab is selected. At the bottom, there are dropdowns for 'Base Unit' (Tablet) and 'Prescribing Unit' (mg).

MOE drug maintenance function

Efficient prescribing

The screenshot shows the 'Medication Order Entry' screen. It displays a patient record for 'CHAN, SIU MAN (陳小曼)' with HKIC: UH987654(1), DOB: 24-May-1958, and Age: 54 years. An 'Allergy' section lists 'Acertil (perindopril tertbutylamine) (2) aspirin'. The 'Drug Name / Set' field contains 'Zinnat'. The 'Prescription' dropdown shows three options: 'Zinnat (cefuroxime (as axetil)) oral powder for suspension', 'Zinnat (cefuroxime (as axetil)) tablet', and 'Zinnat (Free Text)'. The 'Total Number: 0' is shown at the bottom.

supports



How to make use of the HKMTT?

Features of the MOE

Medication safety

Efficient prescribing

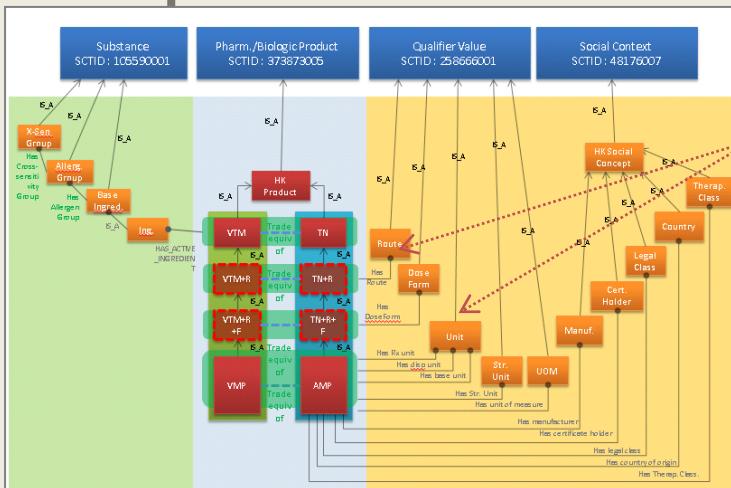
Simple to use

The screenshot shows a Windows Internet Explorer window titled "MOE Drug Maintenance - Windows Internet Explorer". The search bar contains "Zinnat". The results table includes columns for Name, Type, Strength, Dosage Form, Route, and Alias Name. A "Drug Detail" tab is selected, showing detailed information like Trade Name (Zinnat), Generic Name (Cefuroxime (as axetil)), Strength (250 mg), and Route (oral). A large blue bar at the bottom is labeled "MOE".

MOE drug maintenance function

MOE Module - Windows Internet Explorer

The screenshot shows a Windows Internet Explorer window titled "MOE Module - Windows Internet Explorer". It displays a patient profile for CHAN, SIU MAN (陳小曼) with HKIC: UH987654(1), DOB: 24-May-1958, and Age: 5. The "Medication Order Entry" section shows a prescription for Zinnat (cefuroxime (as axetil)) tablet — oral. The prescription fields include Dosage (250 mg), Freq.: PRN, Route: oral, and Special Inst.: (empty). A red arrow points from the "MOE drug maintenance function" screenshot to this screen, with the word "supports" written above it.



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

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: 15-Jan-2013

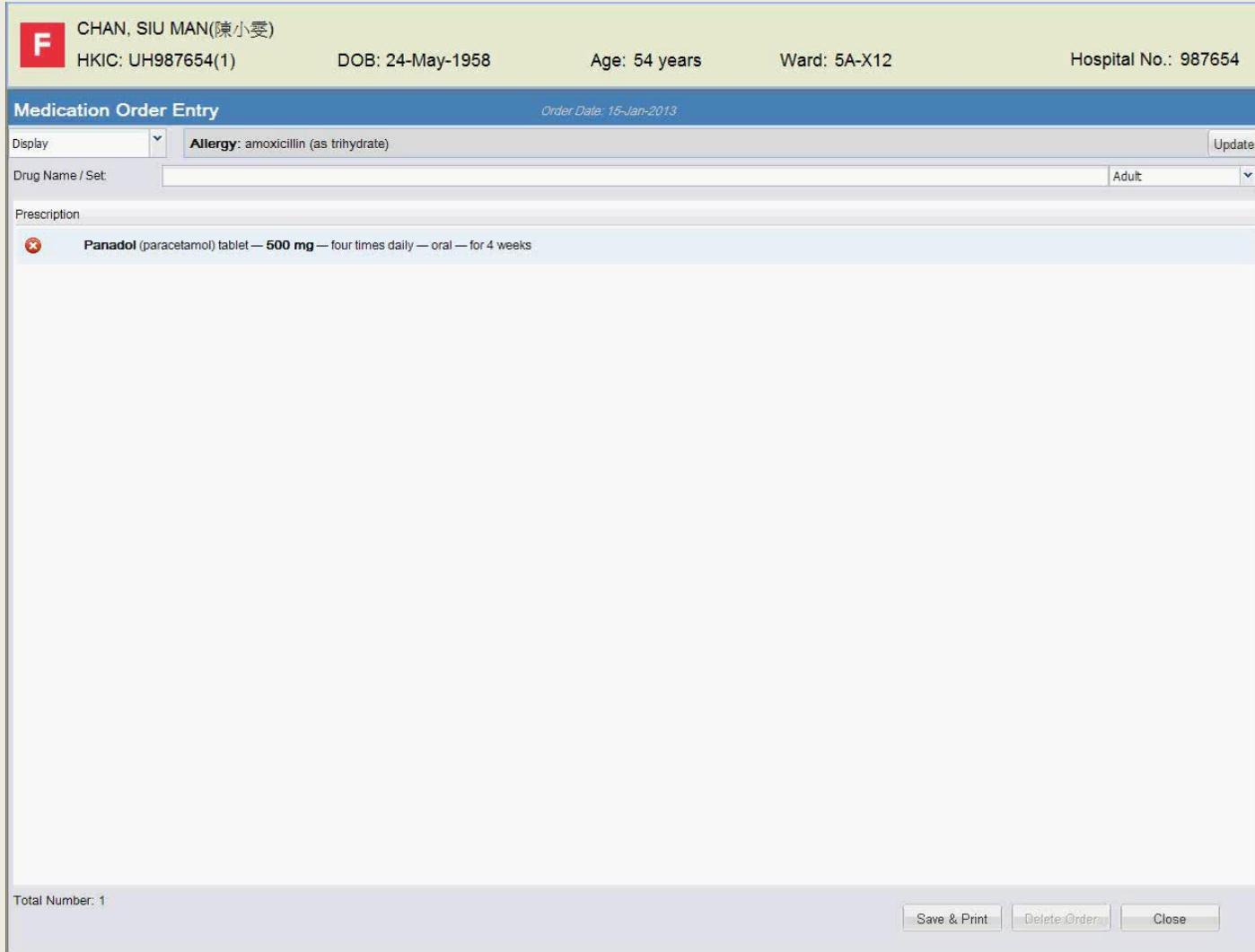
Display Allergy: amoxicillin (as trihydrate) Update

Drug Name / Set: Adult

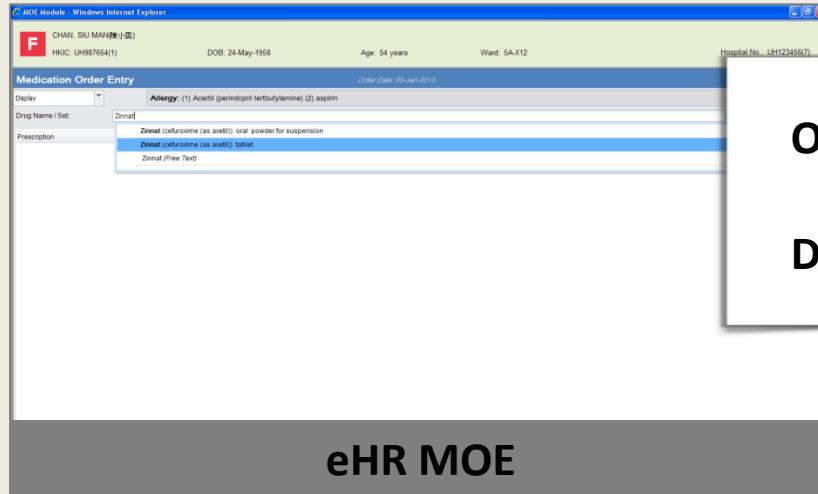
Prescription

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

Total Number: 1 Save & Print Delete Order Close



eHR MOE module and CMS on-ramp Application



Out-patient medications

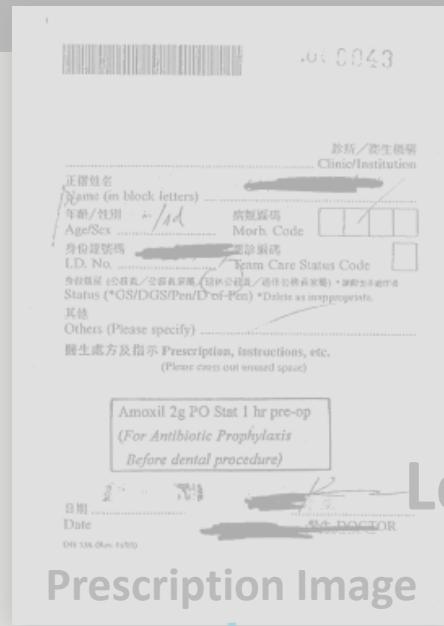
Discharged medications



Private solo practice providers

Private group practice providers

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



Prescription Image

日期
Date
DHI 338 (Rev. FAB09)

2012-05-24

Level 1

No prescription info, scanned Rx image only

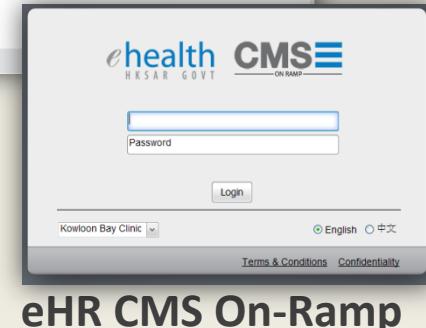
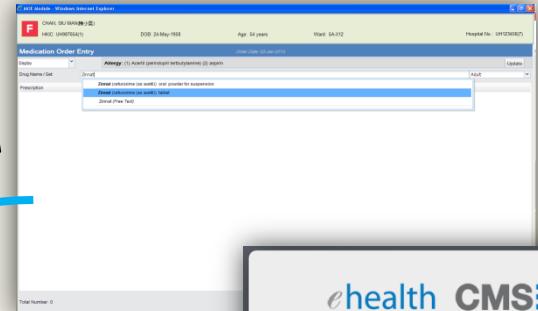


Local drug information database

No mapping



eHR MOE



eHR CMS On-Ramp

Level 3

Coded information, full / partial interoperability

Level 3



Mapped to MTT concepts

Submitting your Prescribing Record

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

The screenshot shows a Windows Internet Explorer window titled "MOE Module - Windows Internet Explorer". The patient information at the top includes "F Mid-2013", "HMO: UH123456(1)", "DOB: 24-May-1958", "Age: 54 years", "Ward: 5A-X12", and "Hospital No.: UH123456(7)". Below this, a prescription section displays "Zinnat" as the drug name, with "Zinnat (cafergotine (as axetil)) oral powder for suspension" and "Zinnat (cafergotine (as axetil)) tablet" listed as options. A dropdown menu shows "Adult". The text "Show interests:" is overlaid in black, followed by a list of hospitals in red: Canossa Hospital, Evangel Hospital, Hong Kong Adventist Hospital, Tsuen Wan Adventist Hospital, and Precious Blood Hospital. At the bottom of the window is a dark grey footer bar with the text "eHR MOE".



The screenshot shows the CMS On-ramp Application login page. It features the "ehealth HKSAR GOVT" logo and the "CMS ON RAMP" logo. Below the logos, the text "Currently:" is displayed in black, followed by "9 private solo practice doctors" and "2 group practice healthcare providers" in red. There is a login form with fields for "Username" and "Password", and a "Login" button. At the bottom, there is a dropdown menu set to "Kowloon Bay Clinic", language selection buttons for "English" and "中文", and the text "CMS On-ramp Application".

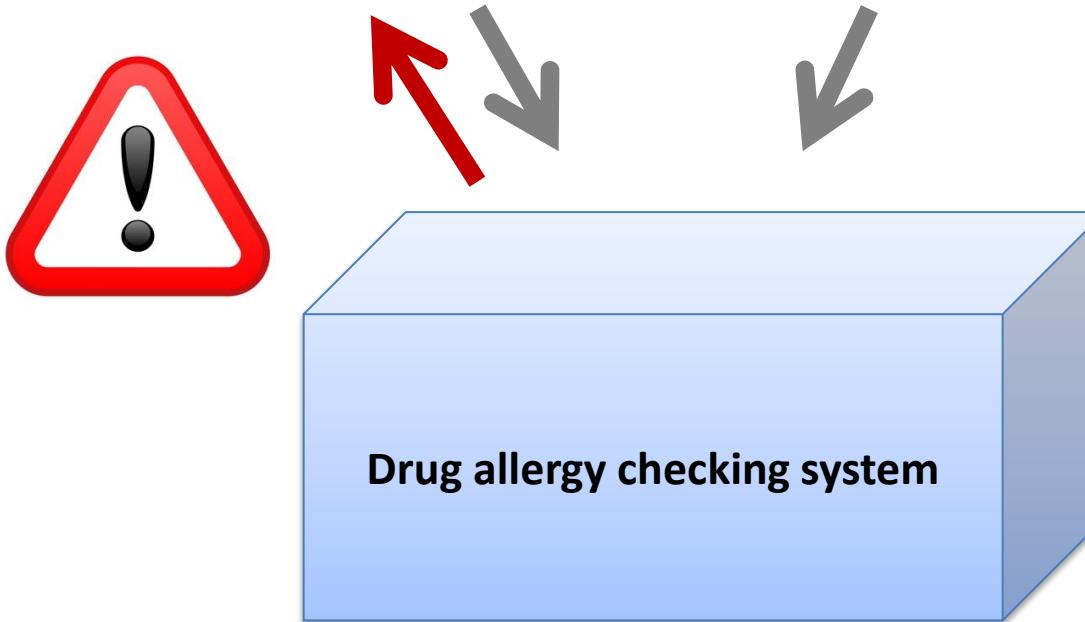
Drug Allergy Checking System

This screenshot shows the eHR MOE Module interface. At the top, patient information is displayed: CHAN, SIU MAN (男), DOB: 24-May-1958, Age: 54 years, Ward: 5A-X12, and Hospital No.: UH1234567. Below this, the 'Medication Order Entry' section is visible. A dropdown menu under 'Allergy' shows '(1) Acarbose (peptidoglycan-4-acetyl-beta-D-glucosaminide) (2) aspirin'. The prescription list includes: Zindat (Zofenopril sodium) oral suspension; Zindat (Zofenopril sodium) tablet; and Zindat (Free Text). The status 'Adult' is selected.

eHR MOE Module

This screenshot shows the eHR Structured Alert Adaptation Module interface. At the top, patient information is displayed: CHAN, SIU MAN (男), DOB: 24-May-1958, Age: 54 years, Ward: 5A-X12, and Hospital No.: 789456. Below this, the 'Allergy / Adverse Drug Reaction / Alert' section is visible. Under 'Allergy', items listed include Aspirin (aspirin), Augmentin (Augmentin), T4 (levothyroxine sodium), benzethonium hydrochloride (benzethonium hydrochloride), and co-trimoxazole (co-trimoxazole). A checkbox for 'Multiple-Ingredients products' is present. The 'New Allergy Details' section is also visible.

eHR Structured Alert
Adaptation Module



CHAN, SIU MAN(陳小曼)

HKIC: UH987654(1)

DOB: 24-May-1958

Age: 54 years

Ward: 5A-X12

Hospital No.: 987654

Documenting an allergen

Medication Order Entry

Order Date: 07-Jan-2013

Display

Allergy: amoxicillin (as trihydrate)

Update

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 Add
amoxicillin (as trihydrate)

Allergy Details
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 Add

Alert Add

eHR SAAM

Prescribing a drug that the patient may be allergic to

F

CHAN, SU MAI (陳素美)

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

▼

Prescription

cloxacillin (as sodium) (Vickmans) capsule

flucloxacillin (as sodium) (Athalone) powder for elixir

cloxacillin (Free Text)



F

CHAN, SIU MAN(陳小曼)

HKIC: UH987654(1)

DOB: 24-May-1958

Age: 54 years

Ward: 5A-X12

Hospital No.: 987654

Allergy Alert Prompt

Medication Order Entry

Order Date: 07-Jan-2013

Display

Allergy: amoxicillin (as trihydrate)

Update

Drug Name / Set:

Adult

Prescription

Drug Allergy Checking

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



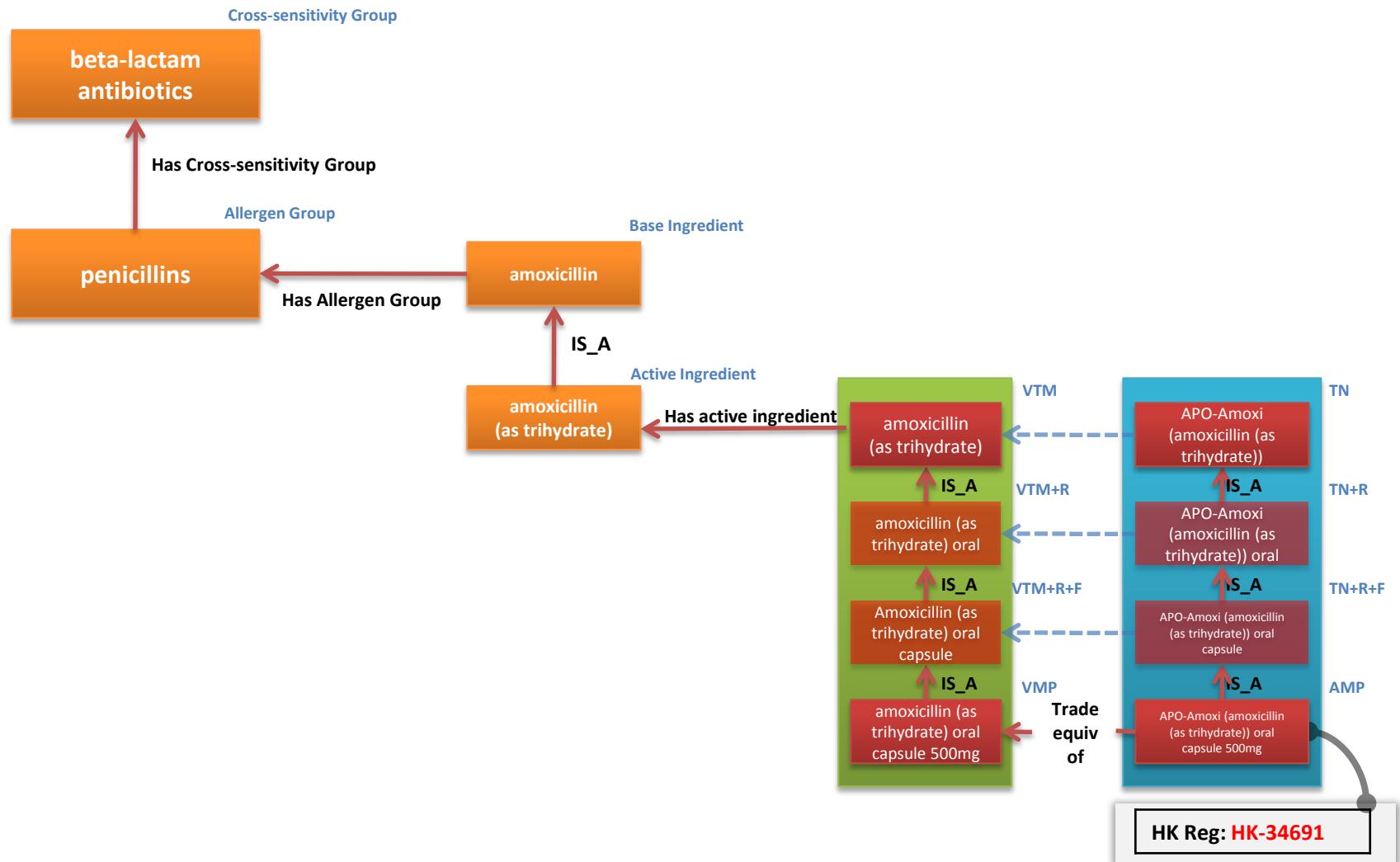
cloxacillin (as sodium) (Vickmans) may result in **ALLERGIC REACTION**.

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?



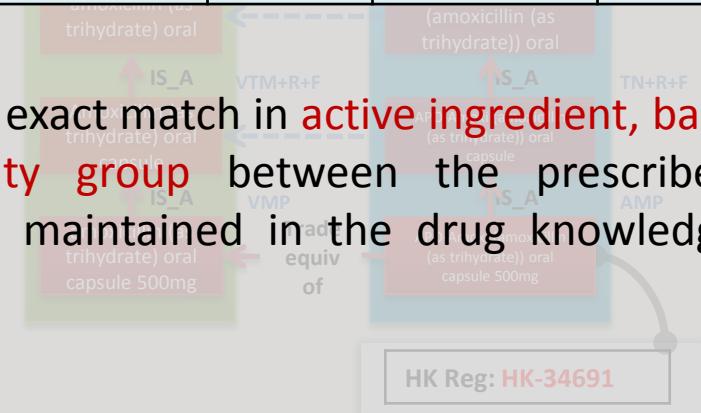
HKMTT supports Drug Allergy Checking

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	penicillins	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

CHAN, SIU MAN(陳小曼)

HKIC: UH987654(1)

Drug Allergy Checking Mechanism

DOB: 24-May-1958

Age: 54 years

Ward: 5A-X12

Hospital No.: 987654

Medication Order Entry

Display

Allergy: amoxicillin (as trihydrate)

Drug Name / Set:

cloxacillin

Prescription

cloxacillin (as sodium) (Vickmans) capsule

flucloxacillin (as sodium) (Athlone) powder for elixir

cloxacillin (Free Text)

Documenting Allergen...

VTM: 6901234

amoxicillin (as trihydrate)

Update

Ordering Medication

TN(VTM)+R+F: 6234567

cloxacillin (as sodium) oral capsule

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.

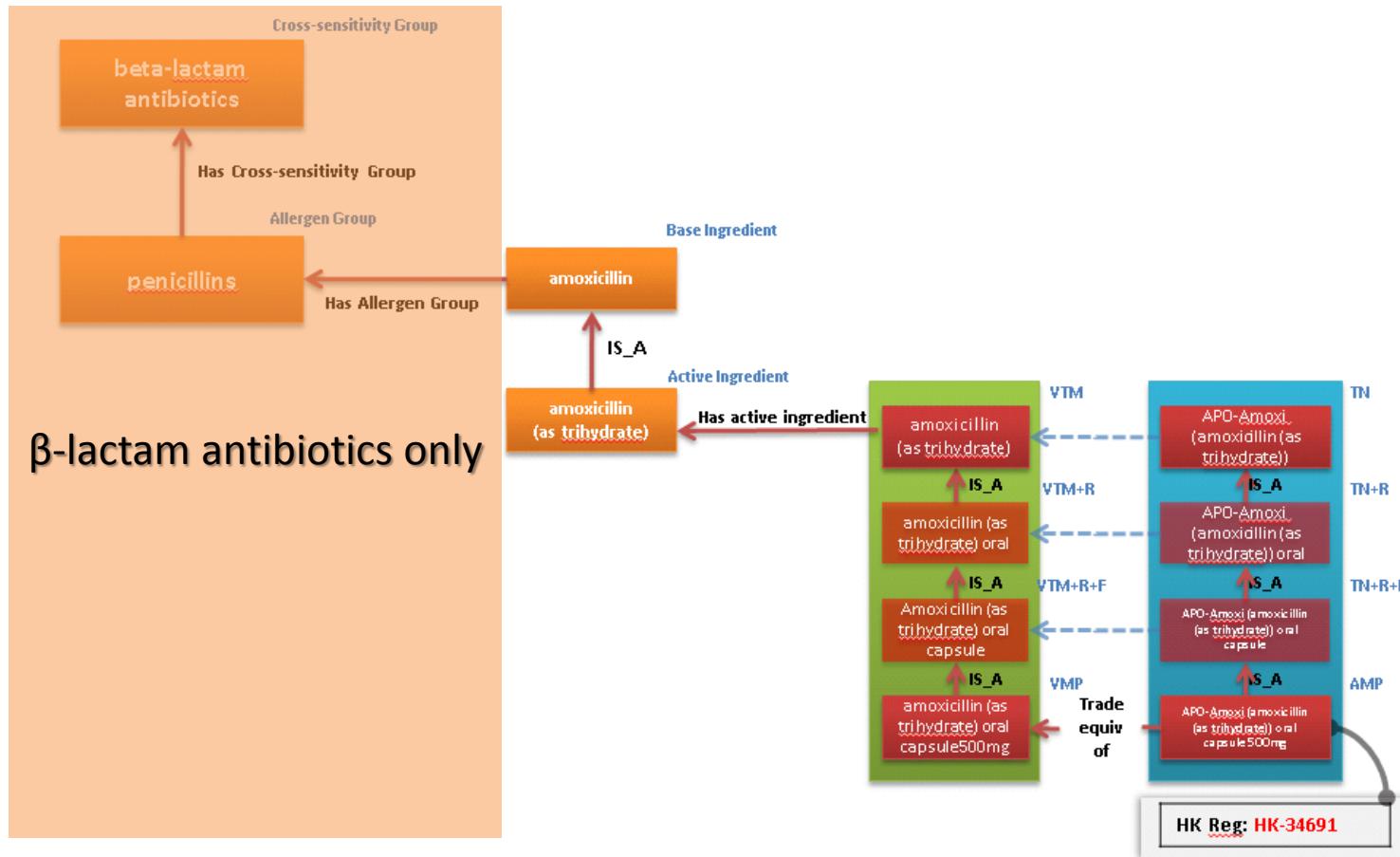
If you wish to prescribe anyway, you must provide the reason(s) for overriding this alert:

- 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
-

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

**Allergy alert result**

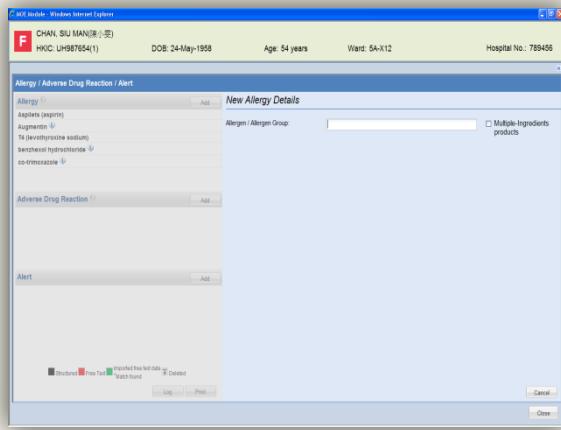
The scope of drug allergy checking at Phase 1



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**.

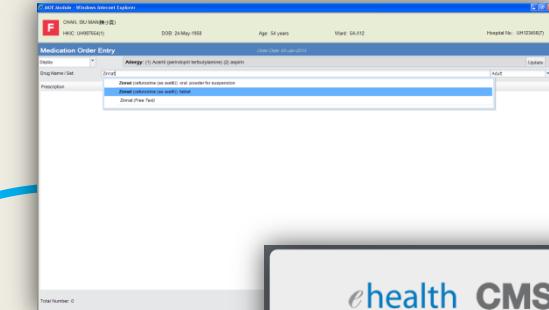
Summary



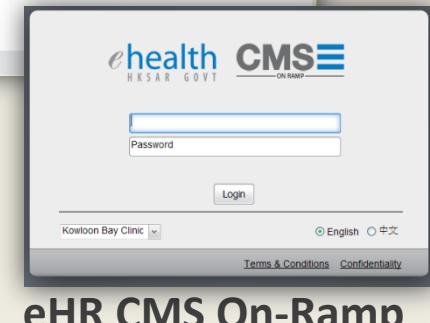
eHR SAAM

Full interoperability

Level 3



eHR MOE



eHR CMS On-Ramp



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)

Thank you.