

PPUKM PHARMACY BULLETIN

VOLUME 14

2013

FAQs ON MEDICATION ERROR by PRP Lee Teng

What is Medication Error?

A medication error refers to an error (of commission or omission) at any step along the pathway that begins when a clinician prescribes a medication and ends when the patient actually receives the medication.

An adverse drug event (ADE) is defined as harm experienced by patient as a result of exposure to medication, which may or may not be caused by medication error.

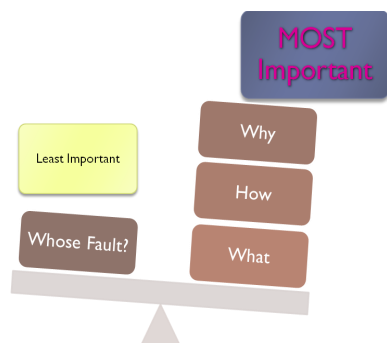
Medication error that reaches patient and resulted in harm is classified as **a preventable ADE** while medication error that did not cause any harm or was picked up before the error reaches the patient are **potential ADE** or sometimes referred to as **near misses**. About half of the ADEs are generally estimated to be preventable.

However, a certain percentage of patients do experience ADE even when there are no medication errors and it occurs at normal dose during normal use. This type of ADE is considered as **adverse drug reaction (ADR)** or **non-preventable ADE**.

ADR is defined as a response to a drug which is noxious and unintended and which occurs at doses normally used in man for prophylaxis, diagnosis, or therapy of disease or for the modification of physiologic function.

Always remember the **5R**

- Right **Patient**
- Right **Drug**
- Right **Dose**
- Right **Route**
- Right **Time**



There are various types of errors detected in the hospital which range from prescribing medication for the wrong patient to omitting or duplicating medication. Among common errors detected are **wrong dose, frequency, duration, and formulation**.

Figure 1: Examples of prescription errors

What are the Contributing Factors?

Miscommunication is one of the most common causes of medication errors as handwritings, abbreviations as well as ambiguous orders can easily be misinterpreted. For example, there could be multiple orders in the same prescription or unclear handwriting that will lead to confusion. Otherwise, **abbreviations** such as PCA can have multiple meanings. If the intended meaning was Procainamide, it could easily be mistaken as Patient Controlled Analgesic. Therefore, it is always best to use full name of drugs. It is also recommended to not add a zero **after** a decimal point but always add a zero **before** a decimal point. Verbal orders are also a potential source of error as numbers in teens can sound like multiples of ten. Thus, verbal orders should be **enunciated slowly** and distinctly and the numbers should be stated individually, i.e. one-five instead of fifteen milligram. The order should then be verified immediately back to the prescriber.

LOOK ALIKE



Heparinised Saline Glucose 50%



Inj Neostigmine
Inj Adrenaline

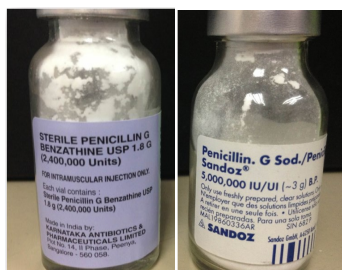
Drugs	
Drug Description	Trade Name
BENZATHINE PENICILLIN 2.4 MIU (1.8G) 10ML INJ	DEEP IM ONLY (AVERROES)
BENZYL PENICILLIN 1 MIU (600MG) INJ. (CRYSTALLINE PENICILLIN)	GENERIC-IDAMAN
BENZYL PENICILLIN 5 MIU (3G) INJ. (CRYSTALLINE PENICILLIN)	GENERIC-IDAMAN
DIPENCILLAMINE 250MG CAP (CUPRIMINE-G)	ARTAMINE (SANDOZ)
FORTIFIED PENICILLIN G 10,000IU/ML EYE DROP	
PHENOXYMETHYL PENICILLIN 125MG TAB.	GENERIC-LUPHA
PHENOXYMETHYL PENICILLIN 250MG TAB.	GENERIC-SANDOZ

For rheumatoid arthritis

Often prescribed wrongly:

BenZATHine Penicillin (Retarpen)	BenZYL Penicillin (C-Pen/Pen G)
Inj 2.4 Mega Unit (1.8g)	Inj 1 Mega Unit (600mg) Inj 5 Mega Unit (3g)
<ul style="list-style-type: none"> Acute Rheumatic fever prophylaxis: 1.2 MU every 4 wks Early Syphilis: 2.4MU single dose Late Syphilis: 1.2-2.4 MU <u>once a wk</u> 	<ul style="list-style-type: none"> Endocarditis: 3-4MU (1.8-2.4g) Meningitis: 4MU (2.4g) q 4-6 hr Cellulitis: 1-2 MU (0.6-1.2g) q6h
IM Only	IM, Slow IV or IV Infusion

Always indent in **MEGA UNIT**, not milligram to avoid confusion



SOUND ALIKE

When key in 'Ipratropium', all the formulations available will be displayed. Click and select carefully.



Different Formulations, Strengths and Devices

Case Report in UKMMC

A call from NICU was received regarding dilution and method to make Sildenafil Syrup with dose of 12mg QID. According to PPUKM extemporaneous worksheet, the syrup can be prepared by crushing 5 tablets of sildenafil 50mg, which is the equivalent of 250mg, and add Extemp syrup up to 100ml of final volume. This will produce syrup with final concentration of 2.5mg/ml.

However, the message was understood as 5 tablets of sildenafil to be crushed and make up with Extemp syrup to a final volume of 250ml. Moreover, patient bought sildenafil tablet of 100mg strength. Hence, error has occurred as the final concentration of the syrup was **2mg/mL instead of 2.5mg/mL** required by patient. In this case, we failed to double check on the calculated final concentration, volume of syrup needed and which strength of sildenafil tablet bought by the patient. In future, these information should be provided to both the staff nurse who prepared the syrup; and to the carer/parents who bought the sildenafil tablet.

25 MG 50 MG 100 MG

A publication of :
DRUG INFORMATION CENTRE
Pharmacy Department
UKM Medical Centre
Izyan Diyana Binti Ibrahim
izyandi@ppukm.ukm.edu.my
Ext 5415
Michelle Tan Hwee Pheng
hptan@ppukm.ukm.edu.my
Ext 5401