

---

## *In this Issue:*



Paediatric Dose  
Calculation Workshop  
**Page 2**



Medication error  
reporting (paediatric)  
in HPJ  
**Page 3**



Commonly prescribed  
drug in paediatric  
**Page 5**



Adverse Drug  
Reaction  
**Page 6**

---



## **Editorial Board**

### **Advisor:**

Puan Kamarunnesa Mokhtar Ahmad

### **Editorial Board:**

Cik Salmi Abdul Razak

Puan Nadiah Mohamed Khazin

Cik Sharifah Shafawati Bt Syed Mohd Hamdan

Puan Aimi Nabilah binti Hashim

## Paediatric Dose Calculation Workshop



Medication Errors have important implications to patient safety, and our main goal as health professionals is the prevention of Medication Errors. Medication Errors are not only harmful to patients, but could also diminish patient trust towards the health care system and health professionals. This is why Medication

Errors is not to be taken lightly by health professionals.



In March of 2014, the Quality Assurance (QA) Team of Pharmacy Department Hospital Putrajaya has organized a Paediatric Dose Calculation Workshop as a remedial action to help prevent and reduce Medication Errors. Attendance

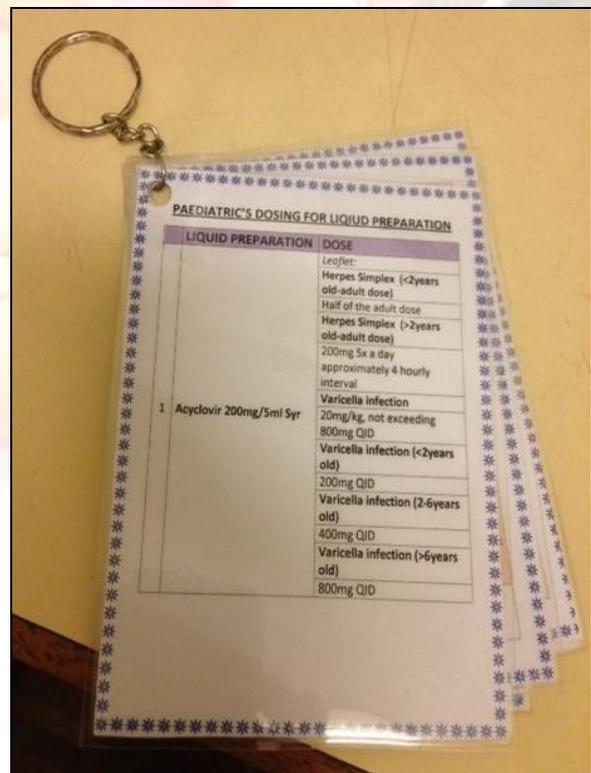
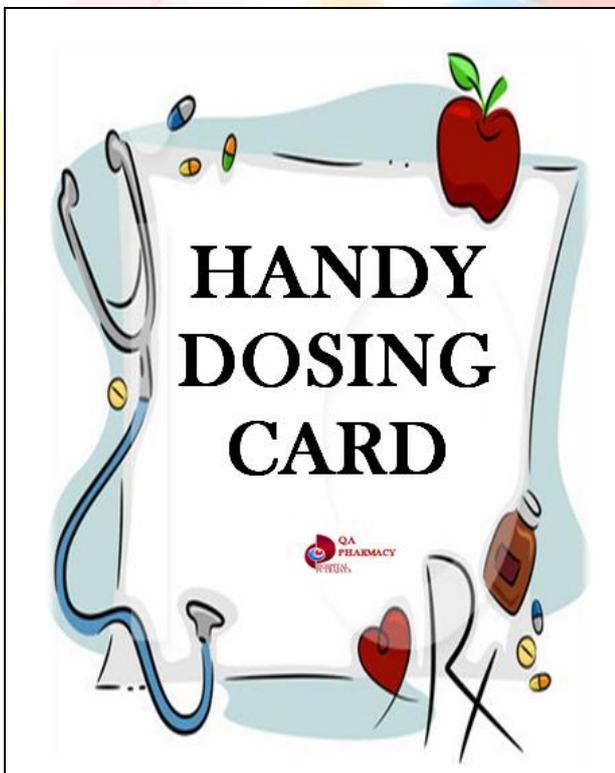
was made compulsory to all Hospital Putrajaya Pharmacists, Provisional Registered Pharmacists (PRP) and Pharmacist Assistants in order to ensure that this workshop is a success. The workshop was conducted in three sessions, so as not to affect any of Pharmacy Department services.

The objective of the workshop is to improve the knowledge regarding common drugs used in paediatric and neonate patients, as well as to revise basic paediatric dose calculation.

The workshop started with an open-book pre-test, in order to assess basic knowledge. There were two sets of questions; set A for Pharmacists and PRPs, while set B for Pharmacist Assistants. All participants were required to answer 15 multiple choice questions in 30 minutes, with the help of references provided. For any wrong answer, 1 mark will be deducted from the final mark. This is done to mimic real life situation as health professionals, where 1 wrong answer or 1 wrong guess can lead to dire consequences.

The workshop was followed by a one-hour presentation by the paediatric ward Pharmacist regarding information pertaining to the previous pre-test. Drugs that were covered in the presentation include: electrolytes, antibiotics, antiviral, and supplements. A case example was given to every drugs covered during the presentation to help improve understanding.

At the end of the workshop, participants were rewarded with a simple yet useful Handy Dosing Card containing common paediatric dosing, as a souvenir so that they can easily reach for information when it is needed.





**1. Wrong patient and wrong drug**

A 4-month old baby boy with diagnosed of acute pharyngitis received oral rehydration salt and paracetamol syrup. On the way back home, the mother noticed the labels on the medications are not his son’s name and returned back the medication to the pharmacy.

Recommendation:

Guideline of proper dispensing at the counter should be placed on every dispensing counter. Firstly, the dispenser should check for the same call number when patient reached the counter. Then, always ask their names to make sure that the drug is given to him or on behalf of other person. All medications must be dispensed according to the medication list based on the prescription. The drugs should be carefully checked; the name, strength, and the quantity. It is also vital that the pharmacist devote careful attention to dispensing processes to ensure that errors are not introduced at that point in the medication process. By following all these steps, right medication is served to the right person with right dose and frequency. Consequently, medication error during dispensing can be reduced.



**2. Wrong labeling**

A 2-year old boy was prescribed with Ribavirin 200mg/5ml suspension with the intended dose of 276mg TDS. But, the drug dispensed was labeled as Ribavirin 200mg/ml suspension. Fortunately, the different on the labeled medicines and from the medication chart was detected by the nurse in the ward. Therefore, the nurse confirmed the dose with the doctor and right amount of medicine was dispensed to the patient.

Recommendation:

Medicines with wrong labeling should not occur, especially in a computerized Hospital. During screening of extemporaneous medication such as Ribavirin, the correct dose and strength available should be checked. Apart from that, counterchecking should be practiced in every stage of dispensing, not only by the pharmacist but also by other healthcare professionals. Consequently, right medication given to the right patient at the right dose and frequency.



### 3. Look-Alike-Sound-Alike (LASA)

A month female baby was prescribed with sodium chloride crystal. Unfortunately, during the filling process, the medicine was filled with sodium dehydrogenase phosphate powder.

#### Recommendation:

Awareness on LASA needs to be accentuated to all staff such as newsletter, morning assembly and workshops. Besides, look-alike medication has regularly been updated in Pharmacy Bulletin and morning assembly of Pharmacy Department. Furthermore, the need to read the label carefully each time a medication is accessed must be emphasized. Moreover, Tallman lettering has already been implemented in Inpatient Pharmacy in order to reduce potential error due to the confusing drug names.



### 4. Gentamicin overdose

A male baby (day two of life) was prescribed with IV gentamicin 8.3mg 36hrly and was served by nurse at 5pm on 21/8/13. Then, the dose was corrected to 7.2mg 36hrly on 22/8/13 but the interval of 36hrly was not followed and the drug was wrongly served with only 18 hours gap at 12pm on 22/8/13. The third dose was again wrongly served with only 12 hours gap at 12 am 23/8/13.

#### Recommendation:

Since gentamicin is the drug that requires therapeutic monitoring, screening for this drug need to be done carefully. The dose and interval should be calculated based on NICU dosing guidelines. And this guideline must be made to known not only to doctors and pharmacists, also nurses in charge of the NICU.

Furthermore, the ward pharmacist should regularly check the medication chart to ensure the patients are given the medication accordingly by the nurses.

#### References:

1. Institute for Safe Medication Practices (ISMP). ISMP's List of Confused Drug Names. June 2011; Available from: [URL:https://www.ismp.org/tools/confuseddrugnames.pdf](https://www.ismp.org/tools/confuseddrugnames.pdf)
2. American society of hospital pharmacists. ASHP guidelines on preventing medication errors in hospitals. *Am J Hosp Pharm.* 1993;50:305-14

#### **Conclusion:**

Pharmacists play an important role in ensuring right medications are delivered to the right patient. They should never assume or guess the intent of confusing medication orders. If there are any questions, the prescriber should be contacted prior to dispensing. Counterchecking of medications must be emphasized every time before dispensing. Pharmacists must make certain that the following are accurate: drug, labeling, packaging, quantity, dose, and instructions. Hence, helps in reducing occurrence of medication error.

## Commonly prescribed drug in paediatric for fever and runny nose



### 1. Normal saline eye drop for runny nose

- Always check for the expiry date before used.
- Wipe your child's nose and ask him to blow his or her nose if needed. If cannot, use bulb syringe.
- Wash your hands.
- Get your child into any of these positions to give the nose drops :
  - tilt your child's head back
  - Lay your child flat on his or her back
  - Ask someone to hold your child in a safe position
  - wrap your baby or young child in a light blanket or sheet to keep his or her arms and legs still
- Shake the bottle
- As your child is breathing through his or her mouth, squeeze the bottle and put the right number of drops into the nostril(s).
- Do not touch the tip of the dropper to your child's nose.
- If the nose dropper touches with your child's nose, rinse in hot water and dry with a towel.
- Keep your child in this position for a minute or two so the medicine spreads through his or her nose.
- Wipe away any excess with a clean tissue
- You may use nose drops as often as necessary for three to four days
- Do not use the same dropper or bottle of normal saline for other children.
- The best time to use nose drops is before feedings.
- Keep the container tightly closed in a cool, dark place according to the label.



### 2. Paracetamol suppository for high fever (>38°C)

- Always check for the expiry date before used.
- Wash your hand and your child's rectum first
- unwrap 1 suppository
- For child, the child may lie on the side or flat on the back.
- Make sure the pointed end is directed to your child rectum
- For smooth delivery of the drug, put it in a cool tap water before inserting to your child's rectum
- Gently push the suppository into the rectum with your finger.
- While inserting, your child may felt discomfort for awhile. The discomfort will disappear soon.
- After inserting the suppository, if necessary, hold the buttocks together for 30 to 60 seconds to keep the suppository in place.
- Remain lying down for a few minutes, and avoid having a bowel movement for an hour or longer so the drug will be absorbed
- Do not use this medication for fever for more than 3 days unless directed by your doctor.
- Do not hold the suppository too long as the suppository may melt at body temperature.



#### References:

1. Dayton Children's Child Health Information . Normal Saline Nasal Drop . Retrieved on 24 March 2013. From: <http://www.childrensdayton.org>
2. Great Ormond Street Hospital For Children . How to Give Your Child Nose Ointment, Drops or Spray. Retrieved on 24 March 2013. From: <http://www.gosh.nhs.uk>
3. Acetaminophen Suppository - Rectal, Acephen, Feverall. Retrieved on 24 March 2013. From: <http://www.medicinenet.com>



## Adverse Drug Reaction Reporting

Health professionals play an important role in the safety of medicines by reporting any adverse drug reaction that was encountered during the care of a patient. In 2013, a total of 60 Adverse Drug Reaction was reported to the National ADR Centre from Hospital Putrajaya. These ADR reports consists of causative drug from various pharmacological groups, with the most common being Anti-infectives. A total of 27 ADR reported was due to anti-infectives. The second most reported pharmacological group was Analgesics, with a total of 12 reports.

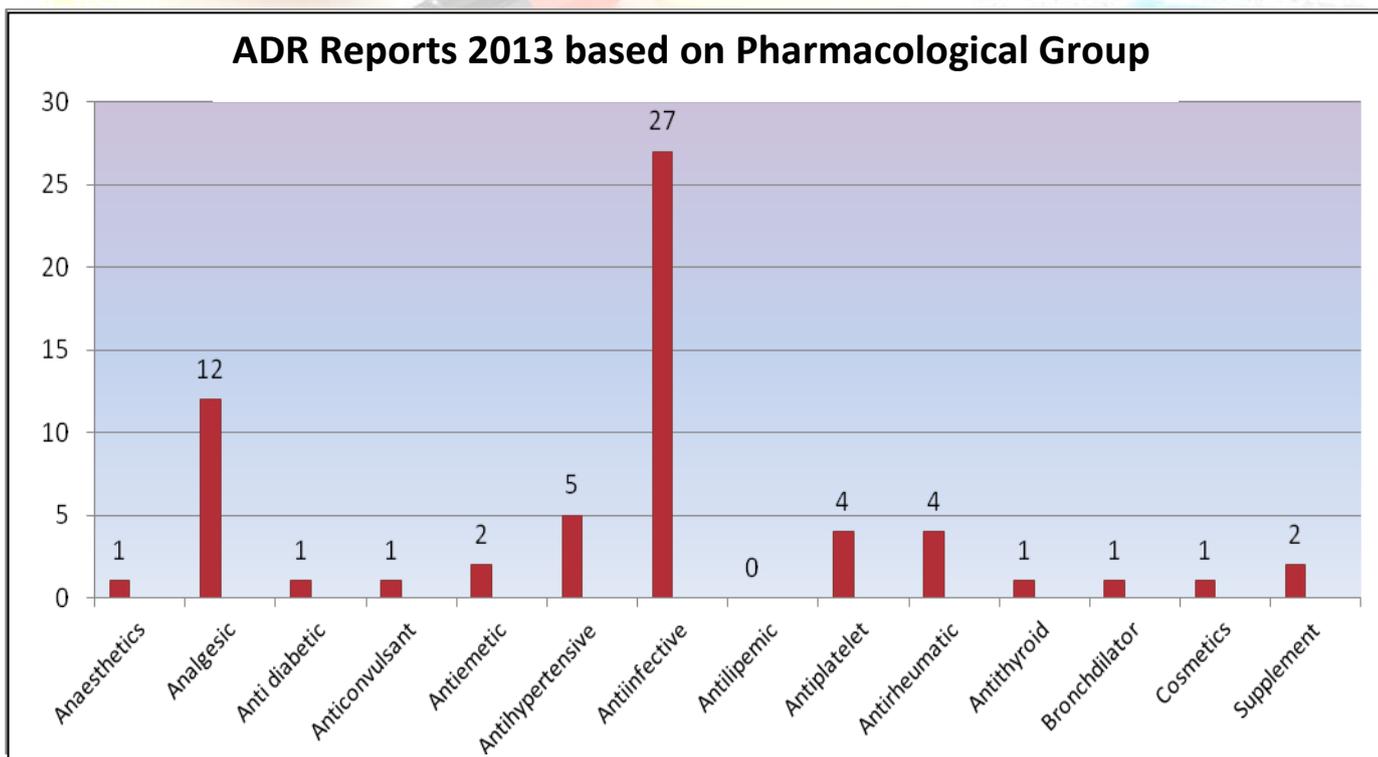
There was 1 report involving a cosmetic product, and 2 reports involving supplements. Other pharmacological groups that were reported are Anaesthetic (1 report), Anti-diabetic (1 report), Anti-convulsant (1 report), Anti-emetic (2 reports), Antihypertensive (5 reports),

Antiplatelet (4 reports), Antirheumatic (4 reports), Antithyroid (1 report), and Bronchodilator (1 report).

Hospital Putrajaya Pharmacists contributed to the majority of the ADR reports (59 reports). The majority of patients were Malay (53 reports), followed by Chinese and Indian. Most of the patients are adult with the age range of 18-60 years old. There were 10 reports each for patients in the age group of <12 year old (children) and >60 years old (elderly).

The severity of adverse reaction was assessed for all of the reports. Most of the reports were of moderate level of severity (28 reports). 24 reports were of mild severity level, and 10 reports were categorized as severe ADR reaction.

**ADR Reports 2013 based on Pharmacological Group**





The Naranjo Scale was used to categorize the likelihood of an adverse drug reaction caused by a drug. Based on this categorization, 47 reports were classified as having probable link between the adverse reaction and the causative drug, and 13 reports were categorized as having possible likelihood. Based on all 60 reports, most of the patients were not re-challenged with the causative drug, where only 7 cases were reported in which patients were re-challenged.

It is very important to report any ADR that occur during hospital visits and admissions. From these reports, we can then determine any undocumented adverse drug reactions, especially for drugs that are still new in the market. Local ADR reports are also important as the occurrence of documented ADR differs in different countries due to variations in genetics, diet, prescribing pattern and drug manufacturing processes, just to name a few. Patient safety should always be our priority, and ADR reporting could help to improve just that.

Reporters by Designation (n)	
Doctor	1
Pharmacist	59
Medical assistant	0
Unknown	0
<b>TOTAL</b>	<b>60</b>

ADR Characteristics (n)		
Severity of adverse reaction	Mild	24
	Moderate	28
	Severe	8
	Missing data	0
<b>TOTAL</b>		<b>60</b>
Onset of reaction	Within seconds	2
	Within minutes	13
	Within hours	19
	Within days	13
	Within weeks	3
	Within Months	3
	Unsure	7
<b>TOTAL</b>		<b>60</b>
Outcome of reaction	Recovered	39
	Not recovered at time of reporting	17
	Unknown	4
	Fatal	0
<b>TOTAL</b>		<b>60</b>

Patients Characteristics (n)		
Gender	Male	28
	Female	32
<b>TOTAL</b>		<b>60</b>
Ethnicity	Malay	53
	Chinese	5
	Indian	2
	Others	0
Age (years)	<12	10
	12 - 18	1
	18 - 60	39
	>60	10
	Missing data	0
<b>TOTAL</b>		<b>60</b>

ADR Relationship (n)		
Likelihood of ADR	Certain	0
	Possible	13
	Probable	47
	Unlikely	0
	Missing data	0
<b>TOTAL</b>		<b>60</b>
Re-challenged status	Re-challenged	7
	Not Re-challenged	53
<b>TOTAL</b>		<b>60</b>

