

paediatric WATCH

Lessons from the frontline

A publication of the Clinical Excellence Commission
Edition 1/16

What's the 'point' of medication safety?

A 7 week old baby was admitted to the paediatric ward with Pyrexia of Unknown Origin (PUO). Symptoms included fever increased work of breathing, tachycardia, tachypnoea and decreased oral intake.

The baby's management plan included ongoing observations and monitoring of oxygen saturations, IV antibiotics and IV rehydration.

The IV gentamicin dose was prescribed on the National Paediatric Inpatient Medication Chart (NIMC) as 38.6 mg IV daily however on investigation it was revealed that the documentation was unclear and the order was interpreted as 386 mg not 38.6 mg.

The documentation was unclear and the order was interpreted as 386 mg not 38.6 mg.

An IV infusion of 386 mg of gentamicin was prepared and administered by two relatively junior registered nurses.

In this paediatric ward it is standard practice to check medications with a senior nurse, often the nurse-in-charge.

In this circumstance the nurse-in-charge was preoccupied with another child deteriorating on the ward while the gentamicin was being prepared and administered.

Just over 95 minutes later a nurse on night duty identified the incorrect dose documented on the gentamicin infusion

user-applied label during the bedside clinical handover.

The infusion was ceased immediately and the paediatric registrar was notified.

The paediatric consultant was also notified and Poisons Information Centre and a nephrology specialist from a tertiary facility were consulted regarding ongoing management. Open disclosure occurred with the parents.

Investigation:

It was determined that the dose in mg/kg was not checked by the two nurses nor was the concentration in units/mL of the drug included on the user-applied label.

It was also identified that the contents of the infusion were not discussed or checked as part of the initial bedside clinical handover from one shift to the other.

Lessons learnt:

Medication management is complex with 'medication-related clinical incidents being one of the leading causes of unintended harm to patients in hospital¹. This harm is considered to be largely preventable².

Where small volumes are required there is an increased risk of a ten-fold or greater dose error from miscalculation or misplacement of the decimal point.

Decimal points can be missed, leading to ten-fold errors

Decimal points can be missed, leading to ten-fold errors. It is often reasonable and safe to round the dose to

the nearest whole number (this may not be the case where the total dose is small).

In this case rounding to 40 mg would have been appropriate.

Failure to complete the dose calculation section on the paediatric NIMC was a missed opportunity to identify the incorrect dose during the independent second person check.

This section specific to the paediatric NIMC is designed to reduce dosing errors. Wrong dose errors were identified as the most common error associated with harm in the Clinical Excellence Commission's recent clinical focus report on paediatric medication safety.

Date	Medicine (Print Generic Name)	Time of Day	Time of Release
6/5	Paracetamol	0600	
PO	DOSE	Frequency & NOW enter times	
	150mg	6 hourly	
Pharmacy/Additional Information			
Indication	DOSE Calculation (eg. mg/kg per dose)		
Pain	15mg/kg		
Prescriber Signature	Print Your Name	Product/Strength	
Abrown	J Brown	2956	

For more information on the safe use of decimal points and dose calculations in prescribing see link:

[Australian Commission on Safety and Quality in Health Care: Guidelines for use of the National Inpatient Medication Chart](#)

[CEC - Medication Safety & Quality](#)

[CEC - Paediatric Quality Program](#)

References

- Mitchell R, Williamson A, Molesworth B. Use of a human factors classification framework to identify causal factors for medication and medical device-related adverse clinical incidents. *Safety Science*. 2015; 79:163-174.
- Sarkar S, Lodha R, Vatsa M. *Clinical Audit of Pediatric Medication in a Tertiary Care Hospital*. *The Nursing Journal of India*. 2013 Dec; (6):18-20.

The Paediatric Quality Program works across a range of areas to improve the quality and safety of health care for children and young people in NSW.