

PATIENT WEIGHT FOR USE IN CALCULATIONS - PICU/CICU

PRACTICE GUIDELINE[®]

DOCUMENT SUMMARY/KEY POINTS

- All patients should be weighed and have an accurate weight recorded in the medical record.
- The weight should be rounded to the nearest 0.1kg for children < 10kg and to the nearest kg for children > 10kg.
- Neonates will often lose weight in the first week of life. For neonates, consideration should be given to using birth weight as a minimum for calculations, especially for nutrition, until this is exceeded.
- Medication dosing in children above a healthy weight should be in consultation with the ICU pharmacist or intensivist.

CHANGE SUMMARY

- Changes to the definition of above a healthy weight for children <2 years of age, now based on weight-for-length/height

READ ACKNOWLEDGEMENT

- PICU/CICU Clinical staff

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

Approved by:	SCHN Policy, Procedure and Guideline Committee	
Date Effective:	1 st June 2022	Review Period: 3 years
Team Leader:	Staff Specialist	Area/Dept: Intensive Care Unit CHW

Introduction

- Most PICU/CICU patients should have their weight measured and recorded on admission and regularly thereafter (ideally 2-3 times a week) unless otherwise indicated by the team leader/NUM or Intensivist
- Categories of patients who should not be weighed routinely include those on ECMO, on spinal precautions or with difficult/ precarious airways

Children < 10kg

Weight should be recorded to the nearest 0.1kg (i.e. round up or down)

e.g. 4.68kg would be recorded as 4.7kg

5.34kg would be recorded as 5.3kg

- Neonates will often lose weight in the first week of life - the physiological range is 3-10% but sick babies can lose larger amounts

For neonates, birth weight should be considered as the minimum weight for calculations, especially for nutrition, until this is exceeded.

Children >10kg

Weight should be recorded to the nearest whole kg (i.e. round up or down)

e.g. 15.7kg would be recorded as 16kg

23.4kg would be recorded as 23kg

- Medications and fluids should be calculated on rounded weights as per examples above
- Medication dosing should not exceed recommended adult doses without input from the intensivist and/or pharmacist
- Some drugs, e.g. chemotherapy agents and immunosuppressants, are calculated based on body surface area - consult relevant drug dosing guidelines and protocols
- Renal and liver impairment can affect drug clearance - consult intensivist/pharmacist regarding dose adjustment and apply particular caution when multiple medications affecting hepatic or renal clearance are prescribed
- In most circumstances, the same weight should be used for all infusion pumps, the electronic medical record, and medication calculations – seek clarification from intensivist/pharmacist when weaning medications in the case of weight gain or for children above a healthy weight (see section below)
- For some patients where fluid balance is critical, the intensivist may indicate that the recorded weights should not be rounded

- In patients with significant fluid overload, it may be appropriate to dose medications based on their “dry weight” and clarification should be sought from the intensivist /pharmacist

Special considerations for children above a healthy weight

- Up to 25% of Australian children are above a healthy weight.
- A child above a healthy weight is defined as:

< 2 years	Weight-for-length/height > 97 th centile ^[2]
2 years – 18 years	BMI > 85 th centile on the BMI chart ^[2]

- Medication dosing in this population depends on the pharmacokinetics and pharmacodynamics of the particular medication
- Properties of a medication such as lipophilicity may determine whether it is best dosed on actual body weight or ideal body weight
 - Ideal body weight (kg) = height (cm)² x 1.65 / 1000 (Formula is valid for children up to a height of 150cm. For children greater than this height, alternative formulas may be used)
- Dosing should be in consultation with the intensivist and pharmacist

References

1. NHMRC. (2012). *Infant Feeding Guidelines, Information for Health Care Workers* [PDF]. Retrieved from https://www.eatforhealth.gov.au/sites/default/files/files/the_guidelines/n56_infant_feeding_guidelines.pdf, accessed March 2022
2. World Health Organisation, *Weight-for-length/height charts*, Retrieved from <https://www.who.int/toolkits/child-growth-standards/standards/weight-for-length-height>, accessed March 2022

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