



# Clinical Practice Procedures: Assessment/Paediatric

<b>Policy code</b>	CPP_AS_PA_0619
<b>Date</b>	June, 2019
<b>Purpose</b>	To ensure a consistent procedural approach to the clinical assessment of the paediatric patient.
<b>Scope</b>	Applies to all Queensland Ambulance Service (QAS) clinical staff.
<b>Health care setting</b>	Pre-hospital assessment and treatment.
<b>Population</b>	Applies to all ages unless specifically mentioned.
<b>Source of funding</b>	Internal – 100%
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<b>Review date</b>	June, 2022
<b>Information security</b>	UNCLASSIFIED – Queensland Government Information Security Classification Framework.
<b>URL</b>	<a href="https://ambulance.qld.gov.au/clinical.html">https://ambulance.qld.gov.au/clinical.html</a>

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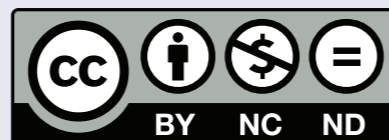
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QAS clinical practice defines a **paediatric patient** as 12 years of age or less.

Children are not to be considered small adults due to marked anatomical and physiological differences. Further to this, their exceptional ability to compensate well for significant injury or illness means that the severity of their condition may be overlooked or underestimated.<sup>[1]</sup>

The assessment of a paediatric patient requires a high level of clinical knowledge and judgement, incorporating not only the patient's age, development and social circumstances, but also their anatomical, physiological and psychological status.



This is pertinent to all paediatric age groups, but it is of particular relevance in patients under 2 years of age where signs and symptoms of serious injury or illness may be subtle and rapid deterioration is common.<sup>[1]</sup> It is therefore strongly recommended that all paediatric patients be transported by QAS for further assessment.

## Indications



- A detailed patient assessment is required on all paediatric patients irrespective of the nature of case.

## Contraindications



- Nil in this setting

## Complications



- When paediatric compensatory mechanisms fail they can do so rapidly, catastrophically and often irreversibly.<sup>[1]</sup>

The process of paediatric assessment includes the same elements as the assessment of an adult. However, assessment is performed with consideration of **four** key categories that encompass the primary differences:

- weight
- anatomy
- physiology
- psychology

### 1. Weight

- Most paediatric drugs or therapies are administered on a per kilogram of weight basis. The QAS preferred paediatric weight estimation method – the Luscombe formula – is more accurate than the Argall and Advanced paediatric life support formulas, as well as the ‘best guess’ method.<sup>[2]</sup>
- Several studies have shown that it is the most accurate estimation formula for paediatrics in developed countries:

$$(\text{Age} \times 3) + 7 = \text{weight in kilograms}$$

### 2. Anatomy

#### a) Airway

- There are significant differences between adult and paediatric airways, including:
  - narrow nostrils
  - large tongue
  - loose teeth
  - compressible mouth floor
  - horseshoe-shaped epiglottis
  - high anterior larynx
  - narrow and collapsible trachea.

#### b) Breathing

- A small amount of airway obstruction can have significant effects on airflow.
- Infants are considered diaphragmatic breathers, therefore rapid gastric decompression can improve respiratory function.<sup>[3]</sup>
- Muscles can fatigue quickly.
- A compliant chest wall means significant underlying injury can occur without rib fracture.

#### c) Circulation

- Small blood or fluid loss in the infant or small child may be clinically significant due to a small total blood volume.<sup>[1]</sup>
- Hypotension is a serious and late sign in the paediatric patient.<sup>[3]</sup> The decision to resuscitate should be primarily based on other clinical signs such as:
  - heart rate
  - capillary refill
  - appearance.

### 3. Physiology

The expected vital signs throughout paediatric age groups differ to that of the adult patient. These are summarised as follows:

	Neonate	6 Months	AGE IN YEARS												
			1	2	3	4	5	6	7	8	9	10	11	12	
Weight (kg)	3.5	7	10	13	16	19	22	25	28	31	34	37	40	43	
Heart rate	100 – 160	100 – 160	90 – 150	80 – 140						70 – 120					
Respiration	25 – 50		20 – 30						15 – 25						
Systolic BP	60 – 70	70 – 100	80 – 110						90 – 115						

### 4. Psychology

- Clinicians must consider stages of child development and behaviour when assessing paediatric patients.
- Specific challenges lie in communication and alleviation of a child’s fear.
- Parents and carers should be involved in the assessment process whenever practical.
- A great deal of the primary assessment of a small child can be achieved by observation alone while the child remains held and secure in the arms of a parent/care giver.