

Policy Compliance Procedure



Health
Hunter New England
Local Health District

Acute Management of Infants and Children with Asthma – Emergency Departments

Sites where PCP applies	All HNELHD Emergency Departments
This PCP applies to:	
1. Adults	No
2. Children up to 16 years	Yes
3. Neonates – less than 29 days	Yes
Target audience	Clinicians in ED where Children present with shortness of breath.
Description	Acute management of asthma in infants and children

[Hyperlink to Procedure](#)

Keywords	Acute, management, asthma, children, infants.
This PCP relates to NSW Ministry of Health Policy Directive	PD2012_056 Infants and Children: Acute Management of Asthma third edition
PCP number	PD2012_056:PCP 1
Replaces existing PCP?	Yes
Document number, name and dates of superseded document/s	PD2012_056: PCP 1 Version 1 from 30 October 2012; PD2012_030:PCP 1 from 19 June 2012; PD2005_386:PCP 1 from April 2010; PD2005_386:PCP 2 from April 2010
Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:	<ul style="list-style-type: none"> NSW Health Paediatric Clinical Practice Guidelines
Tier 2 Director responsible for Policy	Professor Trish Davidson, Director, Children Young People and Families
PCP Contact Position and Network or Service etc. responsible for the PCP	Rhonda Winskill, Paediatric Rural Outreach CNC, HNE LHD/Northern Child Health Network
Contact Details	Mob: 0438 809 688 or Email Rhonda.Winskill@hnehealth.nsw.gov.au
Authorised by	Professor Trish Davidson, Director, Children Young People and Families
Date authorised	9 July 2014
This PCP contains advice on therapeutics	Yes, as per PD2012_056
Issue date	27 August 2014
Review date	27 August 2017
TRIM number	14/37-2-68

Note: Over time links in this document may cease working. Where this occurs please source the document in the PPG Directory at: <http://ppg.hne.health.nsw.gov.au/>

Summary

This PCP is a guideline in the assessment of the severity and management of asthma in infants and children:

- provides guidelines on appropriate transfer/retrieval based on clinical assessment and response to treatment or discharge planning
- promotes evidence based practice in the use of bronchodilators via Metered Dose Inhaler (MDI) and spacer

Risk statement

This PCP has been developed to provide current clinical practice guidelines to clinical staff in the assessment, management and discharge planning for infants and children with asthma. Non-compliance to this PCP may result in paediatric patients with asthma receiving care that is not based on best practice guidelines. **Risk Category:** Clinical Care & Patient Safety.

Compliance, Implementation and Monitoring

This PCP establishes evidenced based best practice for HNELHD based on the policy PD2012_056 which requires mandatory compliance. The document will be implemented in all HNE Health EDs and compliance monitored by IIMS.

Feedback

Any feedback on this document should be sent to the Contact Officer listed on the front page.

Assessment and initial management

Reconsider diagnosis if the child is < 1 year, has high fever or responds poorly to Asthma treatment

Initial Severity Assessment			
Treat in the highest category in which any symptom occurs			
Symptoms	Mild	Moderate	Severe and Life Threatening
	Likely to go home	Possibly be admitted	Will be admitted or transferred
Oximetry in Air	>94%	90-94%	<90%
Heart rate*	Within normal range for age	Mild-Moderate Tachycardia for age	Marked Tachycardia - beware relative Bradycardia for age
Ability to talk in: (age appropriate)	Sentences or Long vigorous Cry	Phrases or Shortened Cry	Words / Weak Cry or Unable to Speak / Cry
Accessory Muscle use	None	Mild to Moderate	Moderate to Severe
Altered Consciousness	Alert Age Appropriate	Easily Engaged Age Appropriate	Agitated, Drowsy, Confused
Cyanosis in air	None	None	Any Cyanosis
Treatment			Get consultant help and/or Call NETS 1300 36 2500
Oxygen	No	To maintain SaO ₂ >94%	To maintain SaO ₂ >94% Consider High flow Oxygen
Salbutamol 100 micrograms Metered Dose Inhaler(MDI) & Spacer	<6 years 6 x puffs stat ≥6 years 12 x puffs stat review frequently and repeat when required	<6 years 6 x puffs ≥6 years 12 x puffs Give 20 minutely x 3 then repeat as required Re-asses the need for further Salbutamol doses every 15 minutes during the subsequent hour	Severe – see page 10 <6 years 6 x puffs ≥6 years 12 x puffs Give 20 minutely x 3 with Ipratropium Reassess
Salbutamol Nebulised	Not recommended	No recommended	OR Life Threatening - Continuous nebulised Salbutamol (using 2x 5mg/2.5mL nebules undiluted) with Ipratropium (3 doses as below) until improvement Reassess
Ipratropium (Atrovent) 20 micrograms (3 doses always together with Salbutamol)	No	Consider 20 minutely x 3 <6 years 4 puffs MDI >6 years 8 puffs MDI	Yes - 20 minutely x 3 <6 years 4 puffs MDI or 250mcg neb Ipratropium >6 years 8 puffs MDI or 500mcg neb Ipratropium
No or Poor response to Treatment	Check diagnosis and treat as per Moderate	Check diagnosis and treat as per Severe and Life Threatening	Immediate Senior Review -Consult PICU (via NETS if outside a children's hospital
If contemplating giving any of IV Salbutamol, IV Aminophylline or IV Magnesium Sulphate	Not applicable	Not applicable	If no or poor response to Nebulised Salbutamol, contact senior help or PICU via (NETS 1300 36 2500) for discussion regarding retrieval
Systemic corticosteroids	Consider Oral Prednisone 1-2mg/kg depending on history and response to treatment	Oral Prednisone 1-2mg/kg	Hydrocortisone IV 4mg/kg or Methylprednisone IV 1mg/kg
Investigations	Nil (routine) required	Nil routine required Consider Chest X-ray if focal signs	Measure Blood Gases, Chest X-Ray, UEC & Lactate
Observation & Review	Observations (HR, RR and O ₂ Sats) pre and post treatment – minimum hourly for 3 hours. MO review prior to discharge	Continuous observations (HR, RR and O ₂ Sats). Observations pre and post treatment –initially Q 30min then MO review within 1 hour	Continuous cardiorespiratory monitoring (HR, RR and O ₂ Sats) Regular medical review
Disposition	Home if Salbutamol requirement >3hourly See 'Discharge Criteria'	Observe for 3 hours after last dose. If not suitable for discharge then – Admit or Transfer. Otherwise home.	Admit to Level 4 facility or above if improving or retrieve to Paediatric ICU (call NETS)

1. Instructions for the administration of Salbutamol Nebule 5mg/2.5mL, for continuous Nebulised Salbutamol.

- Product Name: Salbutamol Nebule 5mg/2.5mL
Single patient use only.
FOR USE IN NEBULISER ONLY
- Indications: For severe or life threatening Asthma in infants and children in accordance with NSW Health PD2012_056 'Infants and children: Acute Management of Asthma third edition.'
- Administration: Empty two (2) Salbutamol Nebules 5mg/2.5mL strength undiluted, into the nebuliser bowl and run continuously with oxygen at a minimum flow rate of 6-8 litres/minute. This will require regular (at least 10-15 minutely) 'top ups' into the nebuliser bowl with more undiluted Salbutamol Nebule 5mg/2.5mL solution.

2. Instructions for the administration of Intravenous Salbutamol using Salbutamol Obstetric Injection.

- Product Name: Salbutamol Intravenous for Injection 5mg/5mL
FOR INTRAVENOUS USE ONLY
- Indications: For *persistently* severe or life threatening Asthma in infants and children in accordance with NSW Health PD2012_030 'Infants and children: Acute Management of Asthma second edition.'
- Administration: 1. Draw up 50mls of Salbutamol Intravenous 5mg/5mL [this is 10 vials] for injection undiluted strength.
2. Weight [kg] x 0.06mL/hr = 1 microgram/kg/minute
3. Infusion: 5micrograms/kg/minute for 1 hour.
4. After 1 hour turn down the infusion to 1microgram/kg/minute continue this as necessary.
5. Deliver IV infusion via a syringe pump.

For patients 40kg and over the maximum dose of 5micrograms/kg/minute is 200micrograms which = 12mLs/hr.

Measure BSL and Serum Potassium regularly

Principles of Oxygen Therapy:

1. All patients receiving oxygen therapy require continuous oxygen saturation monitoring.
2. For Initial resuscitation and stabilization use high flow oxygen.
3. Oxygen therapy should be back titrated after initial resuscitation and stabilization to maintain oxygen saturations within the range of 93% - 98% in the acute phase. Oxygen delivery methods:
 - Standard Nasal Prongs provide the lowest % of supplemental oxygen maximum oxygen flow rates are:
 - Under 12months of age 2L/min, delivers maximum FiO₂ 28%
 - Greater than 12months (including adolescents) 3L/min, delivers maximum FiO₂ 32%.
 - Use a partial non-rebreather mask with reservoir (rather than a Hudson mask) when nasal prongs are insufficient or not tolerated.
 - Minimum flow of 6L/min delivers FiO₂ 35%
 - Flow of 10L/min delivers Fi O₂ 65%
 - **Units currently using Humidified High Flow Nasal Cannula Oxygen Therapy follow local Protocols.**

Asthma Parent Information Pack must be given to parent/carer upon discharge