

	<i>Nurse Practitioner – Emergency Services</i> CLINICAL PRACTICE GUIDELINE Management of Paediatric Asthma	Swan Kalamunda Health Service
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Scope		Outcomes
Nurse Practitioner	<ul style="list-style-type: none"> Children with a known history of asthma presenting with mild respiratory distress 	Identify patients suitable for NP (Emergency) CPG
Medical Practitioner +/- Nurse Practitioner	<ul style="list-style-type: none"> Children with no history of asthma Children with a history of Asthma and has severe respiratory distress History of congenital cardiac or respiratory conditions <ul style="list-style-type: none"> Other chronic/congenital disease/syndrome Suspected aspiration/foreign body Anaphylaxis Severe respiratory distress 	Identify patients not suitable for NP (Emergency) CPG and redirect to usual ED care +/- NP in team.
Initial assessment and Interventions		Outcomes
Primary Survey	<ul style="list-style-type: none"> Airway Breathing Circulation Disability Environment 	Critical abnormality on primary survey identified → exit CPG and notify senior ED Doctor
History	<ul style="list-style-type: none"> Reason for presentation Time of onset of symptoms- duration, nature and any treatment received prior to presentation Allergies / Immunisation status Admission or ED presentation in past 1 month Past medical history including number of previous admissions including intensive care and mechanical ventilation Routine and recent medications including dose and delivery device 	Identify patients not suitable for NP (Emergency) CPG → exit CPG
Focused clinical assessment	<ul style="list-style-type: none"> General appearance and colour Respiratory assessment – see CPG Assess Asthma severity – see Pathway Haemodynamic signs including SaO₂ , cap refill Presence of drooling or stridor and assess quality of voice 	Determine problem. Identify patients for alternative CPG. If patient meets criteria for severe Asthma discuss immediately with EP
Working diagnosis and Investigations		Outcomes
Imaging	<ul style="list-style-type: none"> CXR is not generally required unless focal signs present , pneumothorax likely or not responding to treatment^(1, 2) 	
Pathology	<ul style="list-style-type: none"> Not generally required in mild or moderate asthma 	

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Wheeze in Children: Asthma Clinical Pathway

(for wheeze in children under 18 months of age please consult Bronchiolitis Clinical Pathway or discuss with senior ED doctor; this pathway does not include children with stridor)

NB: This pathway does not replace the clinical judgement of a senior clinician

Checklist (please tick):

Age 18 months to 16 years YES
Wheezing and/or breathing difficulty YES

Exclusions:

Severe respiratory distress, cyanosis or exhaustion NO
Abnormal mental state (agitated or drowsy) NO
Long-standing respiratory problem other than asthma NO

Triage & Nursing Process:

Triage Nurse or Primary Nurse:

Record baseline **observations** on triage sheet (HR, RR, Temp, SpO₂)

Weight: Actual (completely undress under 12 months): _____ kg
From parents, if known: _____ kg
Estimated [= (age+4)X2]: _____ kg

Assess need for Oxygen:

- | | |
|---|--|
| <input type="checkbox"/> SpO ₂ = 96% or more in room air → | NO need for immediate oxygen |
| <input type="checkbox"/> SpO ₂ = 92 to 95% in room air → | immediate oxygen only if significant ↑ work of breathing |
| <input type="checkbox"/> SpO ₂ = 92% or less in room air → | apply oxygen via face mask, 8L per minute |

Assess Asthma severity (see next page):

based on: **air entry on auscultation** (intensity of breath sounds)
use of accessory muscles (head nodding, posturing, sternomastoid muscle palpation)
retractions (intercostal / subcostal / sternal / suprasternal)
speech (in child of verbal age)
oxygen saturations
mental state
wheeze intensity on auscultation (often misleading)

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NB: Consider prior treatment at home and upgrade severity accordingly

Baseline Observations:

Time:	Heart rate:	Respiratory rate:	SpO2:
Accessory muscles:	Peak Flow (if 5yrs+):	Air entry:	Wheeze:
Retractions:	Speech:	Signature:	

NP to Consult with Senior ED Doctor if child meets criteria for moderate/severe/critical Asthma at any stage

MILD ASTHMA	MODERATE ASTHMA any of the following:	SEVERE ASTHMA any of the following:	CRITICAL ASTHMA any of the following:
<input type="checkbox"/> Wheeze with normal air entry	<input type="checkbox"/> Wheeze on auscultation ± reduced air entry	<input type="checkbox"/> Reduced air entry ± wheeze on auscultation	<input type="checkbox"/> Markedly reduced air entry -may have 'silent chest'
<input type="checkbox"/> Minimal use of accessory muscles	<input type="checkbox"/> Moderate use of accessory muscles	<input type="checkbox"/> Marked use of accessory muscles	<input type="checkbox"/> Exhausted
<input type="checkbox"/> Talks in full sentences	<input type="checkbox"/> Talks in phrases	<input type="checkbox"/> Talks in words	<input type="checkbox"/> Unable to speak
<input type="checkbox"/> SpO2 = 96% or more	<input type="checkbox"/> SpO2 = 92-95%	<input type="checkbox"/> SpO2 = 85-91%	<input type="checkbox"/> SpO2 usually below 85%
<input type="checkbox"/> Fully alert	<input type="checkbox"/> Fully alert	<input type="checkbox"/> Tiring or anxious	<input type="checkbox"/> Agitated or drowsy

**Initial Treatment (preferably within 10 minutes)
(quick medical assessment at this stage to confirm wheeze and baseline severity and to prescribe medications)**

		Call senior ED doctor	Call senior ED doctor and Paediatrician NOW
	Consider Oxygen at 8L/min	Oxygen at 8L/min if SpO2 less than 92%	Oxygen at 8L/min
Salbutamol via spacer (6 puffs for under 6 yrs age) (12 puffs for over 6yrs) -may only be required once	Salbutamol via spacer (6 puffs for under 6 yrs age) (12 puffs for over 6yrs) - every 20 min over 1 st hour	Salbutamol via spacer (6 puffs for under 6 yrs age) (12 puffs for over 6yrs) - every 20 min over 1 st hour OR nebulised salbutamol (5mg diluted with saline to 4 mL, for all ages) - every 20 min over 1 st hour	Continuous nebulised salbutamol (5mg diluted with saline to 4 mL, for all ages)
	± Ipratropium via spacer (4 x 21mcg puffs for under 6 yrs age) (8 x 21mcg puffs for over 6yrs) - every 20 min over 1 st hour	Ipratropium via spacer (4 x 21mcg puffs for under 6 yrs age) (8 x 21mcg puffs for over 6yrs) - every 20 min over 1 st hour	Nebulised ipratropium (250 micrograms diluted with saline to 4mL, all ages) - every 20 min over 1 st hour
Consider oral prednisolone (1 mg/kg once daily)	Oral prednisolone (1 mg/kg once daily)	Oral prednisolone (1 mg/kg once daily) or IV Hydrocortisone (4mg/kg	IV Hydrocortisone (4mg/kg 6hourly) Arrange transfer: PMH ICU

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		6hourly)	Consider IV salbutamol Consider IV adrenaline Consider IV aminophylline
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Early Re-Assessment (30 minutes)

Time:	Heart rate:	Respiratory rate:	SpO2:
Accessory muscles:	Peak Flow (if 5yrs+):	Air entry:	Wheeze:
Retractions:	Speech:	Signature:	

Ongoing Treatment (30 to 60 minutes)

<input type="checkbox"/> Await medical review, OR <input type="checkbox"/> Further salbutamol, OR <input type="checkbox"/> Upgrade severity to Moderate →→→	<input type="checkbox"/> Continue salbutamol every 20 min over 1 st hour, OR <input type="checkbox"/> Upgrade severity to Severe →→→	<input type="checkbox"/> Continue salbutamol and ipratropium every 20 min over 1 st hour, OR <input type="checkbox"/> Upgrade severity to Critical →→→	<input type="checkbox"/> Continuous nebulised salbutamol <input type="checkbox"/> Ipratropium 3 doses given
<input type="checkbox"/> ? Prednisolone given	<input type="checkbox"/> Prednisolone given	<input type="checkbox"/> Prednisolone given <input type="checkbox"/> Admission request done	<input type="checkbox"/> Steroid given <input type="checkbox"/> Senior doctor attending

Repeat Assessment (60 minutes)

Time:	Heart rate:	Respiratory rate:	SpO2:
Accessory muscles:	Peak Flow (if 5yrs+):	Air entry:	Wheeze:
Retractions:	Speech:	Signature:	

Assess Response to Treatment (60 minutes) in conjunction with Medical Assessment

<input type="checkbox"/> Excellent response to treatment <input type="checkbox"/> Partial response to treatment <input type="checkbox"/> Poor response to treatment

Disposition

Admit to children's ward <input type="checkbox"/> (new diagnosis asthma) <input type="checkbox"/> (other reasons)	<input type="checkbox"/> Admit to children's ward <input type="checkbox"/> admission request done <input type="checkbox"/> escort to ward	<input type="checkbox"/> Admit to children's ward <input type="checkbox"/> admission request done <input type="checkbox"/> ward handover done <input type="checkbox"/> escort to ward	<input type="checkbox"/> Transfer <input type="checkbox"/> ambulance booked <input type="checkbox"/> medical & nurse escort
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<input type="checkbox"/> Home: <input type="checkbox"/> Asthma information sheet and asthma Action Plan given <input type="checkbox"/> Follow-up planned <input type="checkbox"/> Parents happy	<input type="checkbox"/> Home: <input type="checkbox"/> Discussed with senior ED doctor <input type="checkbox"/> Asthma information sheet and asthma Action Plan given <input type="checkbox"/> Follow-up planned <input type="checkbox"/> Medications prescribed (if relevant)		
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Awaiting transfer to Children’s Ward: Ongoing observations and re-assessment every 30-60 minutes at least)
 Initial frequency of salbutamol treatments prescribed: 30 min 30-60 min 60-90 min 1-2 hrly 2-4 hrly

Ongoing Nursing observations

Referral	Referral to <ul style="list-style-type: none"> • Asthma Foundation/asthma educator ▪ Consider need for admission if psychosocial problems identified ▪ Consider need for referral to -social worker, aboriginal liaison officer, drug and alcohol counsellor, interpreter 	Referral to EP + Paediatric Unit for admission
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Patient Discharge Education	Outcomes
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When to return instructions	<ul style="list-style-type: none"> • Verbal instructions from NP • ED Information sheet • Asthma Action Plan 	Parents/Patient understands treatment and follow up and is discharged safely
Follow-up Appointments	<ul style="list-style-type: none"> • Verbal instructions from NP 	
Medication Instructions	<ul style="list-style-type: none"> • Verbal instructions from NP • 	
Letters	<ul style="list-style-type: none"> • GP Letter • 	
Certificates	<ul style="list-style-type: none"> • Absence from work certificate for parents if necessary • Certificate of attendance if necessary 	

Medication

Should pharmaceutical treatment be necessary, the prescriber should refer to the current version of the ‘Therapeutic Guidelines’
 All medication will be stored, labelled and dispensed in accordance with hospital policy and relevant legislation

Bronchodilator Beta2 Agonist
 Salbutamol

AntiCholinergic Bronchodilator
 Ipratropium

Corticosteroid
 Prednisolone

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Clinical Audit Evaluation Strategies	
Unexpected Representation	<ul style="list-style-type: none"> • Emergency Department attendance register • NP Clinical Log

References

1. Asthma (Acute) Clinical Practice Guideline. [Royal Children's Hospital] [cited 2006 Mar 29]; Available from: <http://www.rch.org.au>
2. Asthma Management Handbook: Paediatric Asthma Management. [National Asthma Council of Australia] [cited 2006 Mar 29]; Available from: <http://www.nationalasthma.org.au>
3. Hospital Medication Storage and Administration Policy.
4. eMIMS 2006 [cited 2006 Aug 17]; Available from JHC Emergency Department Desktop

Authors & Endorsement

This CPG has been reviewed and is endorsed by nurse practitioner clinical practice guidelines committee Swan/Kalamunda Health Service

Approved by Executive Committee for NP CPGs

Dr John Keenan
 Director of Clinical Services

Signature _____ Date _____

Annemarie Alexander
 Director of Nursing and Midwifery Services

Signature _____ Date _____

Halena Halton
 Nurse Practitioner

Signature _____ Date _____

Robin Moon
 Nurse Practitioner

Signature _____ Date _____

Key to terms

NP – Nurse Practitioner – Emergency Services
EP – Emergency Physician
S1 – S4- Schedule of the drug administration act
GP- General Practitioner
OP- Outpatients
CPG- Clinical Practice Guideline

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