Acute Asthma Guideline

Assess Asthma Severity

(Do they have any one of the features below)

Mild

- Can speak full sentences
- Mildly increased work of breathing (WOB)
- SpO2 > 94%

Moderate

- Speaking in short sentences or phrases
- HR 100 - 120
- RR 24 - 29

Severe

- HR >120
- SpO2 <90%
- RR >30
- Normal mental status

Life-Threatening

- HR >120 or Bradycardia
- SpO2 <90%
- RR >30
- Altered Mental Status

Consider Differentials

- Anaphylaxis
- Pneumothorax
- Mechanical airway obstruction
- Vocal Cord Dysfunction
- Inducible Laryngospasm
- COPD
- CCF
- Other

If the patient meets <u>any one</u> criteria for Moderate to Life-Threatening Asthma please refer to the Respiratory Team.

Acute Asthma Guideline
Treatment according to Severity

Mild
GP Follow-up

Salbutamol* 6-12 puffs stat via spacer

Reassess 60 minutes after first dose

Inadequate Response?
Escalate to Moderate treatment pathway

Good Response?
If no further Salbutamol required for 2 hours discharge home with
1. Asthma Education handout
2. Salbutamol & Spacer
3. GP referral for follow-up

Moderate
Respiratory referral

Salbutamol 12 puffs via spacer 20 minutely x3 (60 mins) with reassessment after each dose
+
Give Prednisolone 50mg PO

Ensure regular reassessment

Good Response?
If no further Salbutamol required for 2 hours then discharge home with
1. Asthma Education
2. Budesonide/Formoterol 100/3microg MDI (Symbicort Rapihaler) + Spacer
3. E-referral to Respiratory

Inadequate Response?
Salbutamol via Spacer 20 minutely PRN
+
Ipratropium 21microg/dose 8 puffs via spacer 20 minutely x 3 (60min) with reassessment after each dose

Inadequate response?
Escalate to Severe treatment

Severe
Respiratory Review in ED

Immediate Senior involvement and early Respiratory review.
Continous assessment in ED Resus

Salbutamol 12 puffs via spacer 20 minutely

<u>OR</u>

Salbutamol 5mg nebules
+
Ipratropium 500microg nebules 20 minutely

<u>AND</u>

Prednisolone 50mg PO OR Hydrocortisone 100mg IV

Good Response?
Continue Salbutamol 60minutely and admit to Respiratory team

Inadequate Response?
Treat as Critical Asthma

*Salbutamol refers to Salbutamol 100microg/dose MDI unless otherwise specified

Acute Asthma Guideline

Critical/Life-Threatening

If this patient is not rapidly improving
Senior presence at the bedside is required and consideration made for intubation.
Contact ED FACEM.

ED Duty Consultant #77255
Duty Anaesthetist #71242
ICU Senior Reg #76891
Respiratory via Switch

If you have identified Critical/Life-threatening Asthma

Continuous Salbutamol 10mg nebuliser + 20 minutely Ipratropium 500microg nebuliser (nebs can be mixed)

+

Magnesium Sulfate IV 10mmol in 100mL Sodium Chloride 0.9% over 20 minutes

+

Hydrocortisone IV 100mg stat (If not given already)

IV Salbutamol load 250microg over 1 minute then commence infusion

Ensure concurrent volume resuscitation, pre-empt medication side-effects (e.g. Hypokalaemia from Salbutamol), appropriate patient position and reassurance

Have you considered alternate diagnoses or other scenarios?

<u>Periarrest</u>
Adrenaline: 0.5ml (500mcg) of 1:1000 IM
OR
5ml (500mcg) of 1:10000 IV (Slow Push)

Consider Adrenaline infusion

<u>Cardiac Arrest</u>

- Revert to ALS including 4Hts, 4Ts
- Intubate and Ventilate
- Consider Critical Asthma treatment above
- Consider Adrenaline infusion post-ROSC
- Assessment should target appropriate differentials (e.g. Pneumothorax)

<u>Deterioration on Ventilator</u>

- Disconnect ventilator and ensure expiration
- Consider for expiratory maneouvres
- Attach BVM 15L/min O2 and ventilate

Seek and treat cause

- Common causes in Asthma include breath-stacking, bronchospasm, obstructive shock
- Consider ECMO

Please note that guidance on Non-invasive ventilation, Delayed or Rapid Sequence Induction and specific infusion doses (Salbutamol, Adrenaline, Ketamine) do not fall within the scope of this guideline and senior level input should be sought in these circumstances.

Acute Asthma Guideline

Ongoing Management and Discharge

Asthma Education	**In Hours** Asthma Educator (Dect 71753) **Out of hours** E-referral: Respiratory Medicine -> Asthma Educator
Asthma Follow Up Referral	**GP Follow Up (Mild)** Include relevant results and action plan **Asthma Specialist** E-referral: Respiratory Medicine -> Asthma
Asthma Medication	**Consider** • <u>1st line therapy</u>: Combined reliever and preventer (Symbicort Rapihaler) + Spacer +/- PO Prednisolone (see Page 5 and 6) • If not suitable, consider ○ Reliever (Salbutamol) AND Preventer (Symbicort/Fostair*) • D/w Respiratory Team if further advice is required
Asthma Discharge Pack	• SCGH Discharge Asthma Plan (handout) • Spacer use & care (handout) • Ensure patient has metered dose inhaler (MDI) & spacer +/- Prednisolone (please see link for example prescription)

*Ensure PBS Authority Clinical Criteria are met

Emergency Department Discharge Asthma Plan

My inhaler is:
Budesonide/Formoterol MDI 100/3 microg (Symbicort Rapihaler).
Using a spacer will help the medicine reach the small airways where it is most needed.
This is my preventer AND reliever

My Regular Maintenance Treatment Every Day Is:
- 2 puffs in the morning
- 2 puffs in the evening

My Reliever
- I should take 2 puffs of my inhaler whenever needed for relief of my asthma symptoms
- I can use up to 24 puffs per day

My Asthma is stable if:
- I do not wake up at night or in the morning because of asthma
- My asthma has not interfered with my usual activities

Asthma Flare Up:
If over a period of 2-3 days
- My asthma symptoms are getting worse/not improving

OR
- I am using more than 12 reliever puffs a day

I SHOULD
- Continue to use my inhaler
- Contact my doctor

Asthma Emergency:
I SHOULD SEEK URGENT MEDICAL CARE IF:
- My asthma is getting worse quickly
- I am finding it very hard to breathe or speak
- My inhaler isn't helping
- I need more than 24 puffs (total) in a day

Discharge delivery location: _____ Ward/clinic ED Discharge date: / / Time: am/pm

NOTE: This is an example script for a PBS subsidised SMART regimen +/- prednisolone. Choice of device, dose, frequency and duration of treatment need to be reviewed for each individual

Hospital prescription

77283988
SIR CHARLES GAIRDNER HOSPITAL
Hospital Avenue
NEDLANDS WA 6009
Phone: 08 6457 3333

0070990J

UR number: _____ **Ward:** _____

Name: _____

Address: _____

_____ **DoB:** _____

Insert patient sticker on patient / pharmacist copy, Medicare copy and medical records copy

Fill in or attach the patient label

Patient's Medicare number

[ ][ ][ ][ ] – [ ][ ][ ][ ][ ] – [ ] Patient's Ref number [ ]

Pharmaceutical benefits entitlement or DVA number

[ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Print patient's name Complete

Tick appropriate box (one scheme only per form)

PBS Safety Net entitlement cardholder [ ] Concessional or dependant, RPBS beneficiary or PBS Safety Net concession cardholder [ ] PBS [✓] RPBS [ ] Chemo Access [ ]

Patient Weight .....

Drug name and form	Strength	Dose, route and frequency	Quantity	Rpts	Supply Y/N	☎ Approval number if required
Budesonide / Formoterol MDI	100/3 microg	2 puff BD regularly. Take an additional 2 puffs prn for relief of asthma symptoms (up to a maximum total of 24 puffs in a day)	2	2		10482*
(Symbicort Rapihaler)						
+ / - (if clinically appropriate)						
Prednisolone Tablet	25 mg	50 mg mane with food for 5 days	10	Nil		

Drug hypersensitivities

DO NOT LEAVE BOX BLANK
If patient has no allergies enter N/A in box.

Complete

Prescriber's name: Complete Prescriber number: Complete

Prescriber's type: Resp Pager number: Complete Clinical unit: _____

Signature: Complete Date: / / Complete

Turn over for privacy notice

I certify that I have received this medication and the information relating to any entitlement to free or concessional pharmaceutical benefits is not false or misleading.

Date of supply / / Patient's or agent's signature ✍ Agent's address

PB041.2008

Authority required items ONLY (refer to approved authority indications in *Schedule of Pharmaceutical Benefits*)
(Authority prescription applications 24 hour service PBS **1800 888 333** RPBS **1800 552 580**)

Disease or purpose(s) for which benefit required or clinical justification for use of item _____

*Rapihaler is PBS Authority (Streamline). Patients must be diagnosed with mild asthma, requiring an anti-inflammatory reliever therapy AND patient must not be on a concomitant single LABA. Please see PBS website for additional information.

Next visit: GP/outpatients in _____ (days/weeks/months)

Pharmacy recommendation: _____

Patient's weight (paediatric): _____ kg

Patient's age if child: _____

Did an ADR occur during hospitalisation? No [ ] Yes [ ]

If YES, Drug: _____

Details:

Medication chart done: No [ ] - Yes [ ]

Medication counselling by:

Patient or pharmacist copy

Spacer use and care

What is a spacer?

A spacer is a holding chamber usually made of plastic and shaped like a football or tube. It makes it easier to take asthma or COPD medication from the type of puffer called an MDI (metered dose inhaler).

Spacers help the medication get straight to where it's needed in your lungs, with less medication ending up in your mouth and throat where it can lead to irritation or mild infections. A spacer can also make it easier to coordinate breathing in and pressing your puffer.

Spacers should be used by:

- all children – kids aged under 4–5 years will need a mask attached
- all adults taking a corticosteroid preventer medication (e.g. Flixotide, Symbicort) using an MDI/puffer
- adults who have trouble coordinating the 'press and breathe' technique when using an MDI/puffer
- anyone taking a reliever medication (e.g. Ventolin) during an asthma attack.

Why not use a nebuliser?

All the latest research shows that a puffer with spacer works just as well as a nebuliser for treating asthma symptoms, including during an asthma attack. A puffer with spacer is also simpler, cheaper and handier, is much more portable, and has fewer side-effects.

Choosing a spacer

There are many different brands and sizes of spacers available. Ask your pharmacist, nurse or asthma educator about which spacer might be best for you or your child. Look for one that you can put together easily and that will be convenient for everyday use.

Tips for using your spacer

- Fire only one puff into your spacer at a time
- Breathe in from your spacer as soon as you've fired a puff into it – the medication settles on the bottom very quickly
- For each puff, you can either:

  take one big breath in - breathe in slowly, deeply and fully and hold breath for about 5 seconds (recommended) OR

  breathe in and out normally for 4 breaths (tidal breathing) if you are unable to take 1 big breath in.

Remember to shake your puffer before firing each puff.

Check you have the steps right by watching a short video showing how to use a puffer and spacer correctly in our How-to video library.

Cleaning your spacer

Clean your spacer about once a month and after you have recovered from any cold or respiratory infection. Your spacer may become a bit cloudy over time, but it shouldn't be mouldy or brown.

To clean your spacer:

- Dismantle your spacer, if necessary
- Wash all the parts in clean warm water with liquid dishwashing detergent
- Allow the parts to air dry without rinsing – drying with a cloth or paper towel can result in static building up on the inside of the spacer, which makes the medication stick to the sides
- Wipe the mouthpiece clean of detergent, if needed
- When completely dry, reassemble if necessary

New plastic spacers (e.g. *Able Spacer Universal, Breath-A-Tech, Volumatic*) also need to be washed before you use them for the first time. If a new spacer has to be used immediately, you can 'prime' the spacer by firing multiple (at least 10) puffs into it to begin with to help reduce the static build-up inside. You can then take your medication dose as usual.

Spacers made from antistatic polymers (e.g. *Able A2A, AeroChamber Plus, Breathe Eazy, La Petite E-Chamber, La Grande E-Chamber, OptiChamber Diamond)* do not need to be primed or washed before first use, nor do disposable cardboard spacers.

Your spacer should be checked by your pharmacist, nurse or asthma educator every 6–12 months to check the structure is intact (e.g. no cracks) and the valve is working properly.

To watch a video on spacer use, click here:
nationalasthma.org.au/living-with-asthma/how-to-videos