Created by Martin Wiese

LRI Emergency Department

Acute asthma

Version 72

Use in all adult patients with clinical features strongly suggesting an acute attack

NB: Asthma patients may present with DiB due to other causes e.g. PE; beware of labeling symptoms as 'asthma' in the absence of wheeze/bronchoconstriction

Disclaimer:
This is a clinical template; clinicians should always use judgment when managing individual patients

Re-approved by ED guidelines committee on 03Jul24
Review due Jul27 . Trust Ref C76/2016

Patient details

Full name

DoB

Unit number

(use sticker if available)

To prescribe in NC Meds, go to Emergency Medicine (ED) > Common scenarios (ED) > Asthma & COPD

Life-threatening features (see box 1)? Y / N

Complete boxes 2 and 3 and record obtained PEF measurements in box 6

Severe features (see box 3)? Y / N

Use 24h clock

HH:MM Time 1st neb given

Salbutamol 1 puff via spacer, then another puff every 60sec up to 10 puffs in total depending on response

Salbutamol 5mg via oxygen-driven neb within 5min

HH:MM Time 1st review due

HH:MM Time 1st review done

- Record time administered
- Prednisolone 50mg PO
- Repeat observations after 15-20min (record time due; review sooner if getting worse)

Life-threatening features (revisit box 1) or PEF <50%? Y / N

- Manage in resuscitation room
- O_2 to maintain SpO_2 94 – 98%
- ABCDE approach
- Involve ED senior **NOW**
- O_2-driven Salbutamol 5mg neb with Ipratropium 0.5mg
- Prednisolone 50mg PO (or Hydrocortisone 100mg IV QDS if too unwell to swallow)
- ABG

Normal obs and PEF >75%? Y / N

HH:MM Time 2nd neb given

- Salbutamol 5mg neb
- Record when administered

HH:MM Time 2nd review due

HH:MM Time 2nd review done

Repeat obs after 30min (record when review due)

Severe features (revisit box 3)? Y / N

- Salbutamol 5mg neb every 30min
- Add ipratropium 0.5mg (up to twice)
- IV access if not already established
- Consider magnesium IV 2G in 0.9% NaCl 100mL over 20min
- Address any fluid / electrolyte issues (especially hypokalaemia)
- Obtain CXR
- Repeat ABG (if patient getting worse, or life-threatening features initially)
- Consider salbutamol IV if not improved
  - 250MCG bolus over 5min:
    - Using a 2mL syringe, draw up 1mL (= 1mg) from a salbutamol 5mg in 5mL ampoule; add this to 9mL of 0.9% NaCl (= 100MCG/mL)
    - Expel 7.5mL, keeping 2.5mL only
    - Doctor to administer over 5min (i.e. 50MCG = 0.5mL per minute)
    - Repeat once if required
  - Infusion if no better after bolus x2 (**NB**: Requires ITU team presence)
    - Add one '5mg in 5mL' ampoule of salbutamol to 500mL of 0.9% NaCl (= 10MCG/mL solution)
    - Start at a rate of 5MCG/min (= 30mL/h) and adjust as per response and heart rate (range 3-20MCG/min = 18-120 mL/h)
    - Monitor for toxicity (lactate – VBG)

Normal obs and PEF >75%? Y / N

HH:MM Time 3rd review due

HH:MM Time 3rd review done

Repeat obs after 1h (record when review due)

Severe features (revisit box 3)? Y / N

Is discharge safe (see box 5)? Y / N

Consider observing for another hour if patient had been given nebuliser in ambulance

Critical care needs (box 4)? N / Y

Discharge care bundle (see box 7)

CDU is default destination but also consider ACB and AFU depending on transfer stability and frailty, and Maternity Assessment Unit if >16/40 pregnant

Refer patient for ICU assessment

① Life-threatening features?

☐ **YES** – as at least one of the below

- SpO_2 <92% even with supplemental O_2
- Silent chest
- Cyanosis
- Arrhythmia
- Hypotension
- Poor respiratory effort
- Exhaustion
- Altered consciousness
- PEF < 33% of best or predicted

ABG features (if also any of the above)

- PaO_2 <8 kPa
- 'Normal' $PaCO_2$ (4.6–6.0 kPa)

☐ **NONE** at presentation

☐ **NONE** at 1st review

② Peak expiratory flow (PEF)

If personal best PEF unknown

1. *Record relevant variables below*
2. *Use MD calc online calculator to obtain predicted PEF and % best of ED readings*

Sex: M F

Age

Height: ☐cm ☐inches

☐ personal best
☐ predicted

③ Severe features?

☐ **YES** – at least one at presentation

☐ **YES** – at least one at 2nd or 3rd review

- Respiratory rate ≥25/min
- Heart rate ≥110/min
- Cannot complete sentences in 1 breath
- PEF 33-50% of best or predicted

☐ **NONE** on arrival

☐ **NONE** at 2nd review

☐ **NONE** at 3rd review

④ Critical care needs?

☐ **YES** – as at least one of the below

- Mechanical ventilation instituted in ED
- Deteriorating PEF
- Persisting or worsening hypoxia
- Hypercapnia on repeat ABG
- Exhaustion / altered consciousness
- Poor respiratory effort
- Respiratory arrest

☐ **NO** – as none of the above

⑤ Will discharge be safe?

☐ **NO** – as at least one of the below

- Observations still abnormal
- Significant remaining symptoms
- Concerns about adherence
- Living alone / socially isolated
- Psychological problems
- Physical disability
- Learning difficulties
- Previous near-fatal asthma attack
- Asthma attack despite adequate dose steroid tablets prior to presentation
- Presentation at night
- Pregnancy

☐ **YES** – as none of the above

Assessed by

Print name | Signature | Role | Date | Time

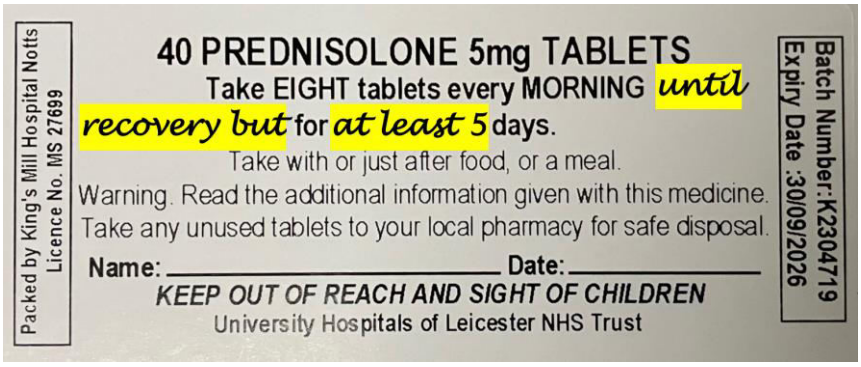
⑥ Peak expiratory flow (PEF) measurements *L/min; always record 3 attempts*

Time *use 24h clock*	example	HH:MM	HH:MM	HH:MM	HH:MM	HH:MM
PEF 1.	350					
2.	370					
3.	380					
% of ☐ ☐ personal best predicted *enter best of the three attempts into MDcalc or use the formula below: the formula below: 100 multiplied by [best attempt] divided by [best or predicted]*	*e.g. if PEF predicted to be 603:* *100 x 380 / 603* = 63					

⑦ Discharge care bundle

Prescribe

☐ TTO prednisolone
- If using TrustMed pharmacy, use the following phrase when completing the white TTO script: 'Prednisolone 5mg tablets (supply 3x28 tablets'); take EIGHT tablets (40mg) ONCE daily until recovery but for a minimum of 5 days'
- If dispensing TTO pre-packs from ED (e.g. overnight), use the phrase 'Prednisolone 40mg (supply 2 pre-packs of 40x 5mg tablets)'. On the pre-pack label, add the missing words shown in **BOLD** below so the sentence reads 'take EIGHT tablets every MORNING **until recovery but** for **at least 5** days' as shown below



☐ Supply of inhaled steroid & β_2 agonist (prescribe patient's regular medicines if run out **OR** appropriate new medicines as per LLR guideline; **NB**: we stock Qvar 50 MDI TTO pre-packs in our ED) **OR** tick here ☐ if enough supply at home

☐ Spacer **OR** tick here ☐ if patient already has a spacer

Provide

☐ The peak flow meter they were given to use in ED

☐ GP letter (print from NerveCentre)

From on-demand print menu 'Majors – other'

☐ PAAP - personal asthma action plan **OR** tick here ☐ if patient already has a PAAP (leave blank; to be completed by patient's primary care team)

☐ PEF diary - patient should record 'Best of 3' PEF twice daily

☐ 'Asthma flare up' - PIL

Advise

☐ Check pt has correct inhaler technique – video demos available by following the **QR code** or http://bit.ly/inhalerdemo

☐ Ask patient to try and get a GP appointment within 2 working days, remembering to take the blank PAAP with them

☐ Advise them to book an appointment with their practice nurse asthma clinic one month after their attendance

☐ Advise patient to return to ED if worsening symptoms not controlled despite 10 puffs of salbutamol 4-hourly

☐ Stress that they need to be aware of their own best PEF

☐ Advise smoking cessation and offer referral to a Stop Smoking Service **OR** tick here ☐ if patient is a non-smoker
NB: See ED NRT prescribing plus quitting advice for information on how to refer - go to print menu 'Majors – other'