

## CHILDREN'S ASTHMA CARE PLAN

- The objective of this care plan is to minimize unnecessary investigations and procedures in patients with known history of asthma during hospitalisations for exacerbations.
- The end-points are a reduction in hospital bill size and a shorter duration of stay.
- The target population: Known or previously diagnosed asthmatic children admitted for management of an exacerbation. This may also be clinically applied to new cases of asthma but the data analysis will only include known asthmatics (not necessarily previously managed or diagnosed in NUH).

### At Admission:

#### A) Assessment Guidelines (Criteria for severity)

<b>SYMPTOMS</b>	<b>MILD</b>	<b>MODERATE</b>	<b>SEVERE/LIFE-THREATENING</b>
<b>Altered consciousness</b>	No	No	Agitated <b>Confused/drowsy</b>
<b>Accessory muscle use/recessions</b>	No	Minimal	Moderate <b>Severe</b>
<b>SaO<sub>2</sub> in room air</b>	>94%	90-94%	<90%
<b>Talks in</b>	Sentences	Phrases	Words <b>Unable to speak</b>
<b>Pulsus paradoxus</b>	Absent	May be present	Present (≥20mmHg)
<b>Pulse rate</b>	Not tachycardic	+/- tachycardia	Tachycardic
<b>Central cyanosis</b>	Absent	Absent	Likely to be present
<b>Wheeze intensity</b>	Variable	Moderate - loud	Often quiet
<b>Peak expiratory flow pre-neb</b>	>80%	60-80%	<60% <b>Unable to perform</b>

Adapted from Asthma management Handbook 2002, National Asthma Council, Australia

#### B) Investigations:

1. FBC Not necessary unless toxic or suspect pneumonia. Not indicated with fever alone.
2. Not necessary unless on nebulized steroids more frequently than one hourly intervals x 4
3. ABG Not necessary unless impending respiratory failure/ +/- in severe attacks
4. CXR Not necessary unless a pneumothorax/ pneumomediastinum are suspected
5. UFEME Not necessary unless a UTI is strongly suspected.

#### C) Medications:

1. Start prednisolone 1mg/kg/dose bd for all with moderate to severe asthma.
2. There is no role for nebulized corticosteroids in asthma.
3. If patient has received more than 3 courses of prednisolone (of 3 days or more duration per course) in the last 12 months, start inhaled steroids or review maintenance therapy.
4. If the patient is on maintenance inhaled steroids, do not discontinue and may consider stepping up dose even when on systemic steroids for the acute attack.
5. Supplemental oxygen therapy is only necessary if oxygen saturations are consistently less than 90% on pulse oximetry.
6. Singulair is not indicated in acute attacks.

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### D) Inpatient care and monitoring:

1. Refer patient to asthma nurse and asthma service on Day 1 of admission.
2. Asthma Nurse will look into education, environment control and inhaler technique.
3. If patient has frequent episodic asthma, inhaled beta-agonists and corticosteroids are indicated. Decide on the inhalers and the spacer device early and order them from pharmacy on Day 1 of admission or ask parents to bring from home.
  - a. <5 Mask-chamber eg. Aerochamber, Babyhaler or Space chamber
  - b. >5 Holding chamber with Mouth-piece eg. Volumatic Spacer
    - i. (ask if able to suck on straw and blow a balloon)

NB. Choice of spacer should be individualized
4. Change to ventolin inhaler via spacer when patient can be weaned to 4 hourly nebulization doses.
5. Routine PEFr monitoring in patients 6 years or older (see reference charts for expected norms or formula:  $(5 \times \text{height in cm}) - 380 \text{ L/min}$ ).

### At point of discharge:

1. Patient is fit for discharge if PEFr >80% of predicted and tolerating 4 hourly bronchodilator inhalers x 2 doses.
2. **Please note that the child need not be totally wheeze-free at point of discharge.** Parents must understand how to continue reliever medication use at home and what symptoms/signs to observe and who to contact (asthma nurse pager number/or doctor's name).
3. Discharged patients need an action plan provided by the asthma service, an information leaflet and an asthma diary if necessary.
4. All patients are to be followed up in the clinic by one of the doctors in the asthma service (see list below).

### **Please contact any member of the CMI Children's Asthma Service if you have any queries:**

Assoc Prof Daniel Goh, Dr Lynette Shek, Dr Nicola Ngiam, Dr Cindy Hia, Dr Chng Seo Yi  
This programme takes effect from 22/4/02.

### **ASTHMA CARE PLAN**

<b>STEPS</b>	<b>DONE (✓)</b>
1. Assess severity	
2. Do PEFr in children 6 years or more pre-treatment and document expected peak flow	
3. Monitor PEFr bd in all children 6 years or older	
4. Start prednisolone 1mg/kg/dose bd for all moderate to severe asthma	
5. Do not stop inhaled steroids	
6. No supplemental oxygen unless SaO <sub>2</sub> persistently less than 90%	
7. Refer to asthma nurse next working day	
8. Refer to asthma service before round next working day	
9. Obtain inhalers and spacer device from pharmacy or ask parents to bring from home on Day 1	
10. Change to Ventolin MDI once able to wean to 4 hourly	
11. Discharge if PEFr > 80% and tolerating MDI 4 hourly 2 times	
12. Action plan given	
13. Information leaflet given	
14. Follow up with asthma service	