Waitemata District Health Board

Best Care for Everyone

☑ = YES ☒ = NO

(PLACE PATIENT LABEL HERE)

SURNAME: _____ NHI: _____

FIRST NAMES: _____

Date of Birth: _____ /_____ /_____ SEX: _____

ADULT ASTHMA (FOR USE DURING THE COVID PANDEMIC)

Date: Time: Assessment nurse: Sign:

INCLUSION CRITERIA

- ☐ Known asthmatic **AND**
- ☐ Shortness of breath and / or wheeze

EXCLUSION CRITERIA

- ☐ Chronic lung disease other than asthma: *e.g: COPD / Cystic fibrosis / Bronchiectasis*
- ☐ Age > 65
- ☐ History of heart failure

- ☐ **Select Treatment Pathway on Whiteboard: # BCB Asthma**
  Enter actual time started
  Data collected for Ministry of Health

STOP!
Not suitable for this Best Care Bundle
Select 'BCB removed' Treatment Pathway
Continue usual nursing cares

NURSING ASSESSMENT *Aim < 30 minutes*

- ☐ History, examination and vital signs *Recorded on Nursing Assessment Record*
- ☐ Calculate % Peak Flow *'How to' guide on page 2*

Measured Peak Flow (best of three) / *Patient's 'Best' or 'Predicted' (see page 2)*	:		X 100 =	_____ **% Peak Flow**

- ☐ Assess severity & assign pathway using the 'Severity Assessment Tool' below
- ☐ Provide self assessment sheet on a 'Asthma Best Care Bundle clip board' *only if patient competent / able*
- ☐ Provide patient information sheet

RED FLAGS *ALL RED FLAG BOXES MUST BE POPULATED* ☑ = YES ☒ = NO

- ☐ Chest pain
- ☐ Drowsy
- ☐ Previous ICU admission *(Asthma)*
- ☐ Known 'brittle' asthmatic
- ☐ Pregnant
- ☐ Hypoxia < 94% on air
- ☐ Hypotension < 100 systolic
- ☐ Current / recent oral steroids

☐ **NO RED FLAGS**
Continue Best Care Bundle
follow pathway instructions page 3-5

☐ **RED FLAGS PRESENT (ANY)** → Senior Dr review ASAP *(SMO / Senior Registrar)*

Dr Name: _____ Sign: _____

☐ Continue Care Bundle. ☐ Move to monitored / Resus *(yes / no)*

☐ Exit Care Bundle: Reason: _____

↳ *Select 'BCB removed' in TP column, Electronic Whiteboard. This signals the medical staff*

SEVERITY ASSESSMENT TOOL *Default to higher severity if any doubt*

	☐ Mild	☐ Moderate	☐ Severe	☐ Life threatening
% Peak Flow	☐ > 70 %	☐ 50 - 70 %	☐ 33 - 50 %	☐ < 33 %
Speaking	☐ Full sentences	☐ Short sentences	☐ Words only	☐ Words or not speaking
Accessory muscles	☐ None / +	☐ ++	☐ +++	☐ + / -
Respiratory rate	☐ < 18 /min	☐ 19-24 /min	☐ ⩾ 25 /min	☐ Silent chest
Respiratory effort	☐ Normal	☐ ++	☐ +++	☐ Poor respiratory effort
Heart rate	☐ 50 - 99 /min	☐ 100 - 130 /min	☐ ⩾ 130 /min	☐ ⩾ 130 /min
SPO2	☐ ⩾ 94 %	☐ ⩾ 94 %	☐ 92 - 94 %	☐ < 92 %
Exhaustion	☐ None	☐ Tired	☐ +++	☐ Exhaustion, altered LOC

ASTHMA BEST CARE BUNDLE PATHWAY

7.7.200 A

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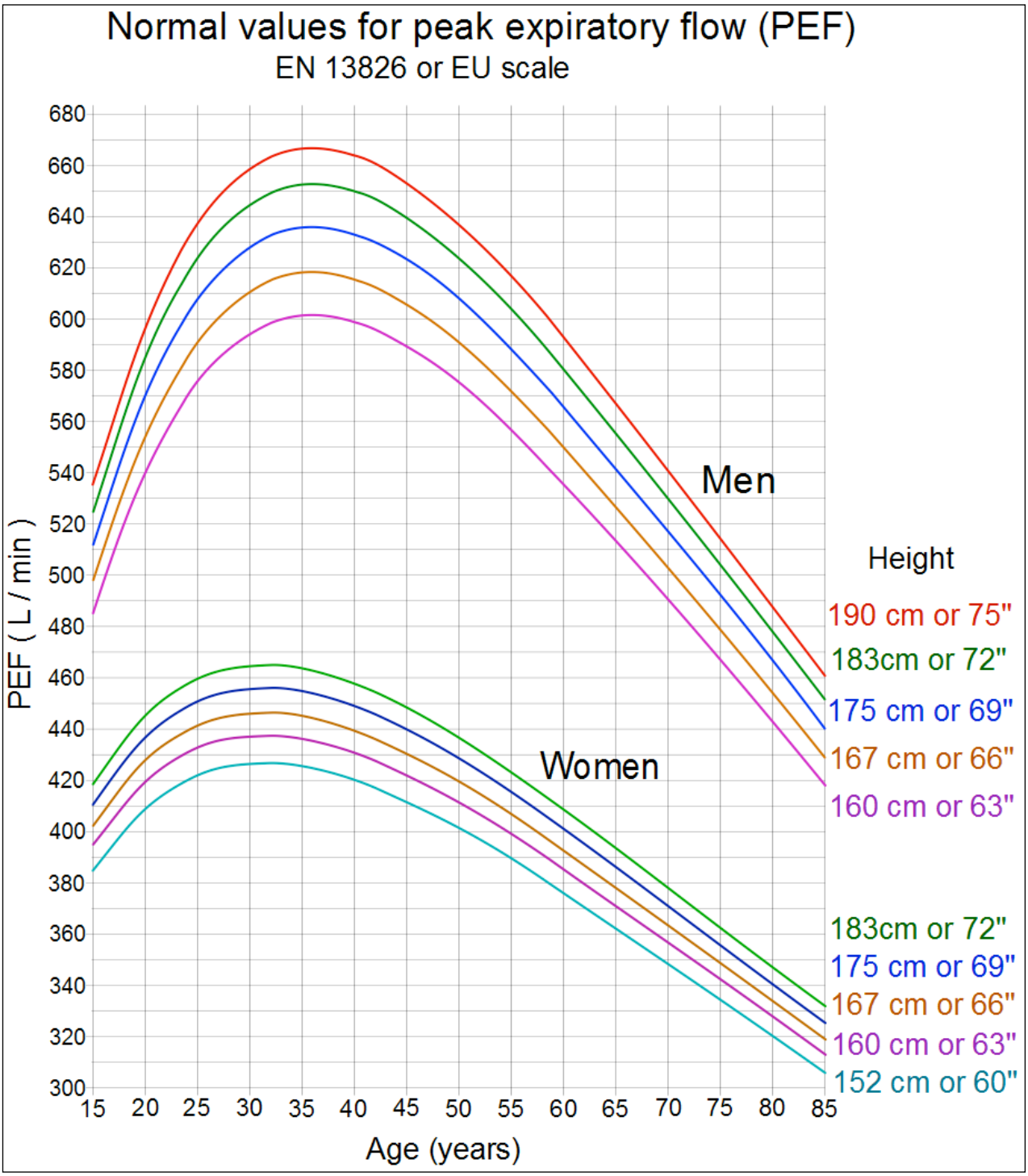
% PEAK FLOW CALCULATION 'HOW TO GUIDE'

Step1:	Measure Peak Flow : Use the best of 3 attempts. *Ideally the patient should be standing*
Step 2:	Best or Predicted Peak Flow. *Use the patient's 'Best' Peak Flow if known or calculate the 'Predicted Best' using the 'Normal Values Chart' below*
Step 3:	Calculate % Peak Flow *using the formula on page 1*



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NURSING

ASTHMA BEST CARE BUNDLE PATHWAY

MILD PATHWAY

Waiting room / Cubicles area

- Document all treatments below and on MedChart
  Self administered & nurse administered. KPI for this bundle
  This can be done in retrospect using the patient assessment form during the 60min & 2hr review
- All medications on this pathway are standing orders. Use SPACERS ONLY
- Patients may self-treat using the self assessment ONLY if they understand the instructions
  If not → nursing reviews every 20 mins

START

Time:
PF:
Sign:

- ☐ Salbutamol 6 puffs via spacer
- ☐ Prednisone 40mg oral *unless patient only ran out of inhalers. Standing order*
- ☐ Spacer technique taught / demonstrated
- ☐ Patient able to understand & follow instructions on self assessment sheet
  - ↳ ☐ Self assessment sheet given and explained

20 mins *after Rx started*

Time:
PF:
Sign:

- ☐ Better → Observe with no treatment
- ☐ Static → Salbutamol 6 puffs via spacer
- ☐ Worse → Moderate pathway

Spacer technique
- ☐ adequate
- ☐ not adequate

40 mins *after Rx started*

Time:
PF:
Sign:

- ☐ Better → Observe with no treatment
- ☐ Static → Salbutamol 6 puffs via spacer
- ☐ Worse → Moderate pathway

60 mins *after Rx started*

Nursing: ☐ Please review now → document all self administered doses above
Continue hourly reviews in ED, unless directed otherwise

Clinician: Consider discharge if only one treatment given. *Discharge criteria page 7*

Time:
PF:
Sign:

- ☐ Better → Observe with no treatment
- ☐ Static → Salbutamol 6 puffs - *further treatment individualised as per clinician or Lead SMO if no sign-on clinician*
- ☐ Worse → Moderate pathway

2 hrs *after Rx started*

Time:
PF:
Sign:

- ☐ Better → Observe with no treatment
- ☐ Static → Salbutamol 6 puffs - *further treatment individualised as per clinician or Lead SMO if no sign-on clinician*
- ☐ Worse → Moderate pathway

Nursing
- ☐ Nursing review now → document all self administered doses above
- ☐ **File self assessment sheet in the notes, if used** *For audit purposes*

Continue hourly reviews in ED, unless directed otherwise

Clinician:
- ☐ Consider stepping up Rx - Even if a mild exacerbation *see page 7 & 8*
- ☐ Review admission & discharge criteria page 7

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MODERATE PATHWAY

Most patients in Acutes / in highly visible area

- All medications on this pathway are **standing orders.** Document all treatments below and in MedChart
  Self administered & nurse administered
- Salbutamol / Ipratroprium: **Spacer to be used in all patients unless absolutely critical**
- Nebulisers **only** to be done in a negative pressure room or at minimum, closed door, full PPE, N95 mask
- ? COVID - discuss rapid test with ID team
- Patients may self-treat using the self assessment sheet ONLY if they understand the instructions

START

Time:
PF:
Sign:

☐ **Salbutamol** ☐ *6 puffs spacer or* ☐ 5 mg neb
If moved from Mild pathway repeat the Salbutamol

☐ **Ipratroprium Bromide** ☐ *4 puffs spacer or* ☐ 500 microgram neb

☐ **Prednisone 40 mg oral** *If not given already*

☐ **Spacer technique taught / demonstrated**

☐ **Patient able to understand and follow instructions on self assessment sheet**

↳ ☐ **Self assessment sheet given & explained** *only if applicable*

20 mins *after Rx started*

Time:	☐ Better →	Salbutamol *4 puffs*	☐ spacer *or* ☐ neb
PF:	☐ Static →	Salbutamol *6 puffs*	☐ spacer *or* ☐ neb
Sign:	☐ Worse →	Salbutamol *6 puffs*	☐ spacer *or* ☐ neb
	→ ☐ Dr review:		☐ move to monitored space

Spacer technique
☐ adequate
☐ not adequate

40 mins *after Rx started*

Time:	☐ Better →	Salbutamol *4 puffs*	☐ spacer *or* ☐ neb
PF:	☐ Static →	Salbutamol *6 puffs*	☐ spacer *or* ☐ neb
Sign:	☐ Worse →	Salbutamol *6 puffs*	☐ spacer *or* ☐ neb
	→ ☐ Dr review:		☐ move to monitored space

60 mins *after Rx started*

☐ Please review now → Document self administered doses above

Clinician: Consider early admission if little improvement in clinical picture. *Admission criteria p7*

Time:	☐ Better →	Observe with no treatment	
PF:	☐ Static →	Salbutamol *6 puffs*	☐ spacer *or* ☐ neb
Sign:	☐ Worse →	Salbutamol *6 puffs*	☐ spacer *or* ☐ neb
	→ ☐ Dr review:		☐ move to monitored space

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NURSING

BEST CARE BUNDLE - PATHWAY

MODERATE PATHWAY

continued

+/- 2 hrs *after Rx started*

Time:	☐ Better ➔ Observe: *OBS ward if discharge likely. Individualised care plan*
PF:	☐ Static ➔ Salbutamol *6 puffs* ☐ spacer *or* ☐ neb
Sign:	☐ Worse ➔ Salbutamol *6 puffs* ☐ spacer *or* ☐ neb
	➔ ☐ Dr review: ☐ move to monitored space

+/- 3 hrs *after Rx started*

Time:	☐ Better ➔ Observe: *OBS ward or discharge if meets criteria*
PF:	☐ Static ➔ Salbutamol *6 puffs* ☐ spacer *or* ☐ neb
Sign:	☐ Worse ➔ Salbutamol *6 puffs* ☐ spacer *or* ☐ neb
	➔ ☐ Dr review: ☐ move to monitored space

+/- 4 hrs *after Rx started*

Nursing:	☐ Nursing review now ➔ document all self administered doses above ☐ **File self assessment sheet in the notes, if used** *For audit purposes* ☐ Consider Respiratory CNS review in ED 42765 to request ☐ Continue hourly reviews in ED, unless directed otherwise
Clinician:	Disposition decision. *Admission criteria page 7*
Time:	☐ Better ➔ Observe: *OBS ward or discharge if meets criteria*
PF:	☐ Static ➔ Salbutamol *6 puffs* ☐ spacer *or* ☐ neb
Sign:	☐ Worse ➔ Salbutamol *6 puffs* ☐ spacer *or* ☐ neb
	➔ ☐ Dr review: ☐ move to monitored space

BEST CARE BUNDLE PRESCRIBED CARE CONCLUDED

Clinician:

☐ Document further instructions & plan in clinical notes

☐ **All patients on this pathway should be started on:**

ICS / LABA: *Inhaled Corticosteroid / Long Acting Beta Agonist or SMART Rx*
Even if they are not on ICS yet. See page 7&8 for guidance

☐ Review admission & discharge criteria page 7

☐ Discharge checklist page 7

CLINICIAN

ASTHMA BEST CARE BUNDLE PATHWAY

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SEVERE OR LIFE THREATENING ASTHMA GUIDE FOR DOCTORS

Important: This page serves as a guide for the clinician. It is not a rigid prescription

ALL PATIENTS

- ☐ Call for help ➔ Immediate Senior / SMO review *NSH: 43366 / 43777 WTH: 47799 / 48934*
- ☐ Manage in resus / negative pressure room under **direct** supervision of senior clinician
- ☐ Administer O_2 aim to keep Sats 92% - 96%
- ☐ Poor respiratory effort / decreased GCS ➔ MEDICAL EMERGENCY (777)

- ☐ **SALBUTAMOL** 5 mg nebulised back to back with oxygen x 3. *Aim SPO2 92 - 96%*
  Staff must don full PPE with N95 mask. Negative pressure room or closed door at minimum.
  For ? COVID patients discuss rapid testing with ID team
- ☐ **IPRATROPIUM BROMIDE** 500 mcg nebulised every 20 minutes x 3
- ☐ **PREDNISONE** 40mg oral stat *or* **HYDROCORTISONE** 200 mg IV
  Prednisone preferred if able to swallow.
- ☐ Arterial Blood Gas ASAP: Hypercapnoea → Medical Emergency Call

Poor response

POOR RESPONSE

- ☐ **MAGNESIUM SULPHATE** 50% (5 -10 mMol / 1.2 - 2.47 g)
  2.5 - 5 mL Slow IV push or infusion. Can be started earlier if severe

Poor response

- ☐ **SALBUTAMOL IV** Bolus 250-500 microgram

Poor response

- ☐ **SALBUTAMOL IV** Bolus 250-500 microgram PRN Q5 mins

Poor response

- ☐ **SALBUTAMOL IV** infusion *See page 8 or infusion book in resus*
  Dose range 3 - 20 mcg per minute. Usual starting dose 5 mcg per minute
  Rx: 5mg Salbutamol, dilute in 495 mL of 0.9% Sodium Chloride
  = 0.01mg / mL = 10 mcg / mL

Poor response

GOOD RESPONSE *(Clinical improvement)*

PREPARE FOR INTUBATION EARLY: ASK FOR SENIOR HELP

- ☐ Consider NIV as rescue intervention
- ☐ Early ICU involvement if deteriorating *or* not responding *ICU reg: 021 494 920*
  Ventilation settings: Rate: 6 / min, TV: 6-8 mL / kg, FiO2: 100%, PEEP 5
- ☐ *Consider Ketamine for induction agent 2 mg / kg. Consider delayed sequence intubation*
- ☐ Anaesthetist via operator at WTH or medical emergency via 777

Good response or clinical improvement at any time:

- ☐ Change nebulisers to spacers when able to *- Clinician decision*
- ☐ SMO to provide clear individualised care plan - *please document in Clinical Notes*
- ☐ All patients on this pathway - mandatory admission

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ASTHMA BEST CARE BUNDLE PATHWAY

DISCHARGE CRITERIA MUST MEET ALL

- ☐ Peak Flow at least > 70% of 'Best' or 'Predicted'
- ☐ Vital signs within normal limits
- ☐ SPO2 > 94% on air
- ☐ Spacer technique assessed as satisfactory
- ☐ Senior doctor agrees with discharge plan

ADMISSION CRITERIA

- ☐ Any severe / life threatening signs at any time
- ☐ Persistent abnormal vital signs
- ☐ Multiple medical co-morbidities
- ☐ Poor response to treatment
- ☐ Known high risk factors such as:
  - *Social isolation*
  - *Concern about compliance*
  - *Disability or learning difficulties*
  - *Previous life threatening / near fatal asthma / intubation*
  - *Presentation late at night*

DISCHARGE CHECKLIST

- ☐ Script for short course Prednisone
- ☐ Consider stepping up treatment: guide below
  - *Patient education video on CeDDS*
  - *Add link to education video to your EDS*
- ☐ Check compliance & technique - *educate if needed*
  - *Resp CNS available to review in ED in hours 42765*
- ☐ Patient information leaflet given and discussed
  In Bundle Pack or on BCB page, CeDSS
  Asthma action plans available on CeDDS
- ☐ Smoking cessation advice / support if relevant

FOLLOW UP - *please document this in the EDS*

- ☐ GP follow up *all patients. Recommend Influenza Vaccine*
- ☐ Asthma NZ referral
  - In hours: 09 623 0236
  - Asthma.org.nz/pages/patient-referrals
- ☐ Respiratory Nurse Specialist
  - Inpatient: 42765 *could see patient in ED in hours*
  - Outpatient clinics: *Electronic referral*
- ☐ Respiratory clinic referral: *fax 42348*
  - If > 3 attendances this year or clinician concern

Asthma + Respiratory FOUNDATION NZ

INDICATIONS TO STEP UP RX: ANY OF...

Acute exacerbation:

- ☐ All patients on this bundle - esp MODERATE Pathway
- ☐ Asthma symptoms / Salbutamol use > 2 times per week

Poor symptom control:

- ☐ ≥ 2 courses of steroids in the last 12 months
- ☐ ≥ 2 visits to ED this year

The National Asthma Foundation recommends that ICS therapy is introduced if patients have symptoms > 2 times in the last week, with evidence of benefit in patients with less frequent symptoms, or anyone who presents with severe exacerbation (i.e ED visit, hospital admit or needing a course of steroid)

HOW TO STEP UP & WHICH INHALER? *Formulary page 8 for options & dosages*

☐ **Not** on a preventer	→ ☐ Start Inhaled Corticosteroid (ICS)
☐ **Already** on a preventer OR ☐ Moderate / Severe pathway	→ ☐ Change to combination (ICS/LABA) Rx *see formulary p8* *or* ☐ Symbicort SMART *One inhaler instead of two. No separate SABA* *Good evidence this can lead to decreased ED returns & improved Sx control*
☐ **Already** on combination Rx (ICS / LABA) AND **poor** compliance	→ ☐ Consider Symbicort SMART *One inhaler instead of two. No separate SABA* *Good evidence this can lead to decreased ED returns & improved Sx control* → ☐ Respiratory Nurse Specialist referral: 42756 in hours. Otherwise Yellow referral
☐ **Already** on combination Rx (ICS / LABA) AND **good** compliance	→ ☐ Refer to Respiratory Outpatient clinic → ☐ Discuss with on call Respiratory team / Resp Nurse Specialist 42756 → ☐ Ensure ICS component is high dose *step 4. See guideline p8*

FORMULARY / MEDICATION OPTIONS

CHECK ALLERGY STATUS AND SEE MEDSAFE OR OTHER TEXT FOR FULL LIST OF CONTRAINDICATIONS**

ALL MEDICATIONS MUST BE CHARTED ON THE NATIONAL MEDICATION CHART

TREATMENT IN ED — ALL ARE NURSE INITIATED STANDING ORDERS

document first dose in e-prescribing and all other doses on the bundle

Medication	Dose	Route	Freq	Notes
Salbutamol MDI 100 mcg / actuation	6 puffs	Spacer	Q 20 min	*Standing Order see CeDDS* *As per pathway or clinician direction*
Salbutamol nebulised 5 mg	5 mg	Nebuliser	Q 20 min	*Clinician instruction only if absolutely necessary. Staff must don full PPE including N95 mask. Neg pressure room or an minimum closed door room*
Ipratropium MDI 20 mcg / actuation	4 puffs	Spacer	4 hourly	*Standing Order see CeDDS*
Ipratropium nebulised	500 microgram	Nebuliser		*Every 20 minutes x 3 in severe asthma (see note re nebulising above)*
Prednisone first oral dose	40 mg	Oral	Stat	*Standing Order see CeDDS*
Prednisone for discharge	40 mg	Oral	OD	*Script for 5 days to be given at discharge*

SEVERE ASTHMA — FOR USE IN RESUS ONLY AS DIRECTED BY DOCTOR. NOT STANDING ORDER

Hydrocortisone 100 mg / 2 ml	200 mg	IV	8 hourly	*Follow with oral dose within 6 hours*
Magnesium Sulphate 50%	2.5 - 5 mL	IV	/20 min	*(1.2-2.47 g, 5-10 mMol)*
Salbutamol IV bolus	250-500 microgram	IV	Q 5 min	*DOCTOR administration only*
Salbutamol Infusion	3-20 microgram/min	IV		*Usual starting dose 5 mcg / min* *Rx: 5mg Salbutamol, dilute in 495 mL of 0.9% Sodium Chloride. = 0.01mg / mL = 10 mcg / mL*
Adrenaline Nebulised 1mg / ml	5 mg	Nebuliser		*Nebulisation requires neg pressure room and full PPE*
Ketamine	2 mg / kg	IV	Stat	*For induction of anesthesia for RSI* *Consider delayed sequence induction if appropriate.* *Senior clinician guidance*

Asthma + Respiratory FOUNDATION NZ

STEP 1 SABA reliever Rx

STEP 2 STD dose ICS & SABA reliever Rx

STEP 3 STD dose ICS /LABA & SABA **OR** STD dose SMART Rx

STEP 4 HIGH dose ICS /LABA & SABA **OR** HIGH dose SMART Rx

STEP 5 HIGH dose ICS /LABA & SABA **OR** HIGH dose SMART Rx & Consider add-on Rx and specialist advice

PREVENTER: ICS: Inhaled Corticosteroids *usually taken in addition to short acting reliever. Standard doses*							
Floair ® / Flixotide ®	125 mcg	MDI	*Fluticasone*	1 puff	BD	*step 2*	
Beclazone ®	200 mcg	MDI	*Beclomethasone*	1 puff	BD	*step 2*	
Qvar ®	100 mcg	MDI	*Beclomethasone*	1 puff	BD	*step 2*	*No generic substitution*
Pulmicort ®	200 mcg	Turbuhaler	*Budesonide*	1 puff	BD	*step 2*	
COMBINATION RX: ICS / LABA (Long acting beta agonist & corticosteroid) *usually taken in addition to short acting reliever*							
Seretide ® / Rexair ®	50/25	MDI	*Fluticasone/Salmeterol*	2 puffs	BD	*step 3*	
Vannair ®	200/6	MDI	*Budesonide/Eformoterol*	1 puff	BD	*step 3*	
Seretide ®	100/50	Accuhaler	*Fluticasone/Salmeterol*	1 puff	BD	*step 3*	
Symbicort ®	200/6	Turbuhaler	*Budesonide/Eformoterol*	1 puff	BD	*step 3*	
Seretide ® / Rexair ®	125/25	MDI	*Fluticasone/Salmeterol*	2 puffs	BD	*step 4*	
Symbicort ®	200/6	Turbuhaler	*Budesonide/Eformoterol*	2 puffs	BD	*step 4*	
Breo Ellipta ®	100/25	Accuhaler	*Fluticasone/Vilanterol*	1 puff	OD	*step 4*	
Symbicort SMART (Single inhaler Maintenance And Reliever Therapy) *NO short acting reliever required* *This inhaler is ALSO used as a reliever. Maximum 12 doses total per day during initiation or exacerbation*							
Symbicort SMART ®	200/6	Turbuhaler	*Budesonide/Eformoterol*	1 puff	BD & PRN	*step 3. Funded for up to 3 inhalers/ month. Maximum 12 doses per day during initiation or exacerbation. Provide 2-3 OP. Remind patients to discard Salbutamol inhalers*	
Symbicort SMART ®	200/6	Turbuhaler	*Budesonide/Eformoterol*	2 puffs	BD & PRN		