ED OBSERVATION UNIT:
ASTHMA GUIDELINES
NYC H+H KINGS COUNTY HOSPITAL CENTER

General Observation Guidelines apply for all ED observation patients.

INCLUSION CRITERIA
• History of asthma • Initial treatment (nebulizers, steroids, magnesium) and intermediate response (improvement but still wheezing) • Able to speak full phrases/sentences

EXCLUSION CRITERIA*	
Hemodynamic instability	• O_2 < 92%, HR >120, RR > 30, SBP < 90 mmHg • Pulsus paradoxus > 25 mmHg
Exam	• Absent breath sounds (silent chest) • Change in mental status - agitation, anxiety, lethargy, drowsy, confused • Unable to speak sentences or phrases • Accessory muscle use • Inability to lie in supine position • Cyanosis
Testing	• Peak expiratory flow rate < 40% of baseline or predicted** • Hypercapnia - $PaCO_2$ > 45 mmHg on VBG (if done) • Radiographic evidence of complication requiring inpatient treatment (ie, PTX, PNA) • Cardiac dysrhythmia (ie, SVT)
ER Interventions	• Mechanical or NIPPV*** • Epinephrine or terbutaline (excluding pre-hospital)
Other	• Any other need for inpatient admission • Any factor that will preclude discharge in 48 hours

***** Criteria extrapolated from Milliman admission guidelines and the National Heart, Lung, and Blood Institute's description of severe asthma and high risk features of imminent respiratory failure.[1-3]

******Refer to Mdcalc.com or Table 1 if height not available

The use of NIPPV in asthma is not standard care and is lacking in high quality evidence.[4-5] There is practice variation among ER providers and therefore whether or not a patient was placed on NIPPV should ***not independently rule out or rule in a severe asthma exacerbation. Please refer to exclusion criteria.

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INTERVENTIONS

- Bronchodilator nebulizers treatments q2-q4h
- Steroids
- Supplemental O2 prn
- Serial peak flow measurements
- ED Care management consult
- Asthma education - compliance, identifying triggers, MDI teaching, smoking cessation

Persistent or worsening symptoms < 48 hr L.O.S.

- Increase frequency of nebulizer treatments
- IV Magnesium sulfate
- IV steroids
- Consider continuous nebs/IM epinephrine and transfer to CCT for further stabilization if severe deterioration

DISPOSITION

Home:

- Major resolution of sob/wheezing
- Peak flow >70% of predicted/baseline or significant improvement from baseline
- Ambulating comfortably
- Ensured follow up (PMD or Asthma/Chest clinic)
- Medication prescribed
- Consider escalation of oupt controller meds using stepwise approach if already compliant

Admission:

- Clinical deterioration to severe asthma exacerbation or imminent respiratory failure

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Table 1: Suggested Peak Flow Rate When Height and Baseline measurements are not available [6]

Asthma Severity	Peak Flow (L/min)	
	Men	**Women**
Mild	>400	> 300
Moderate	250 - 399	200 - 299
Severe	150 - 249	120 - 200
Very Severe	<150	< 120

Sources

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3. Hodder R, Lougheed MD, Rowe BH, FitzGerald JM, Kaplan AG, McIvor RA. Management of acute asthma in adults in the emergency department: nonventilatory management. *CMAJ*. 2010;182(2):E55–E67. doi:10.1503/cmaj.080072
4. Landry A, Foran M, Koyfman A. Does Noninvasive Positive-Pressure Ventilation Improve Outcomes in Severe Asthma Exacerbations? Ann Emerg Med 2013;62(6):594-596
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