# **Emergency Room Asthma Management Algorithm**

The Emergency Room Asthma Management Algorithm is to be used for any patient seen in the Emergency Room with the diagnosis of asthma. (The initial history should be documented on the standard Triage/Emergency Room Form.) Each sheet is to be used to document patient risk factors, physical examination findings, levels of pulmonary function and oxygenation, asthma severity level and physician orders. In addition, the algorithm is designed to facilitate hospital admission based on written criteria. The order forms provide a severity-based algorithm to improve efficiency and to standardize care in the Emergency Room. Each page allows the Emergency Room physician to document continuation of care in the Emergency Room or final patient disposition.

Inhaled beta<sub>2</sub>-agonists are the mainstay of acute bronchodilator treatment. Most experts advocate the use of albuterol by frequent or continuous nebulization. There is little evidence favoring the use of beta<sub>2</sub>-agonists other than albuterol; however, metaproterenol (5% solution using 0.3 cc + saline 2.0 cc) is a reasonable alternative. Other drugs, such as isoetharine, are not recommended because they are less beta<sub>2</sub> selective. The majority of patients will improve with beta<sub>2</sub>-agonists nebulization q20 minutes x 3 over the first hour. At times the use of subcutaneous epinephrine may be indicated.

The use of albuterol through an MDI (4 puffs) delivered with a spacer or reservoir bag q20 minutes has been shown to be as effective in the treatment of acute asthma as albuterol given by nebulization for adult patients. However, severely dyspneic patients or those with severe coughing may prefer the nebulizer. The use of albuterol via MDI has not been widely adopted in acute management of asthma because more coordination is required, breath holding is more critical and more instruction and supervision is required.

The patient's response to therapy within the first hour in the Emergency Room is one of the most reliable ways to predict need for hospitalization.

Severely ill patients should receive oral or intravenous corticosteroids immediately in the Emergency Room. The minimum duration required to see improvement after corticosteroids is 4 hours. Less severely ill patients may be observed for their response to inhaled beta-agonist therapy over the first hour. However, if the patient remains moderately ill (severity index = 2) after the first hour, corticosteroids should then be given STAT.

Supplemental oxygen (1-2 liters/minute via nasal cannula) is recommended for any patient undergoing Emergency Room treatment for asthma unless the oxygen saturation is demonstrated to be consistently >92% on room air.

Intravenous theophylline or aminophylline are generally not recommended for treatment in the Emergency Room, and their use in hospitalized patients has also declined over the past decade. However, these drugs may provide some benefit in terms of respiratory drive, improved respiratory muscle function or prolonging or sustaining the response to beta<sub>2</sub>-agonists between doses.

A chest x-ray is recommended for any patient with a severity index = 3 and for any patient who is hospitalized. A standard PA and lateral chest x-ray is preferred; however, if this requires transport to a radiology department, the patient's respiratory status must be monitored at all times.

#### Emergency Room Severity-Based Treatment Algorithm: Severity Index = 3

Patients with severe illness (Severity Index = 3) on entry to the Emergency Room must be assessed and treatment instituted quickly. An arterial blood gas (ABG) should be obtained to document the degree of hypoxemia and the acid-base status. The criteria for hospitalization should be reviewed, including those based on abnormalities in the ABG. Most patients who meet criteria for hospitalization within the first hour in the Emergency Room should be confined in the ICU. A bolus of corticosteroids should be given intravenously as a STAT order, since any delay in this treatment may increase the likelihood of serious sequelae, such as the need for mechanical ventilation.

### **Triage Flow Sheet**

The Triage Officer must have a basic understanding of symptoms and signs of respiratory distress and asthma. The principal duty of the Triage Officer is to prioritize the entry of patients into the Emergency Room based on acuity and severity of illness. When appropriate, the Triage Officer may also discharge patients from the Triage Department without being seen in the Emergency Room.

Discharge of an asthmatic from the Triage Department is permissible only if:

- 1. symptoms are acute but mild, or
- 2. symptoms are moderate but have been present chronically (>72 hours), and
- 3. the patient can be directed to an appropriate care facility within 24 hours, or if the Triage Officer believes the patient can be managed by phone by the Asthma Case Worker.

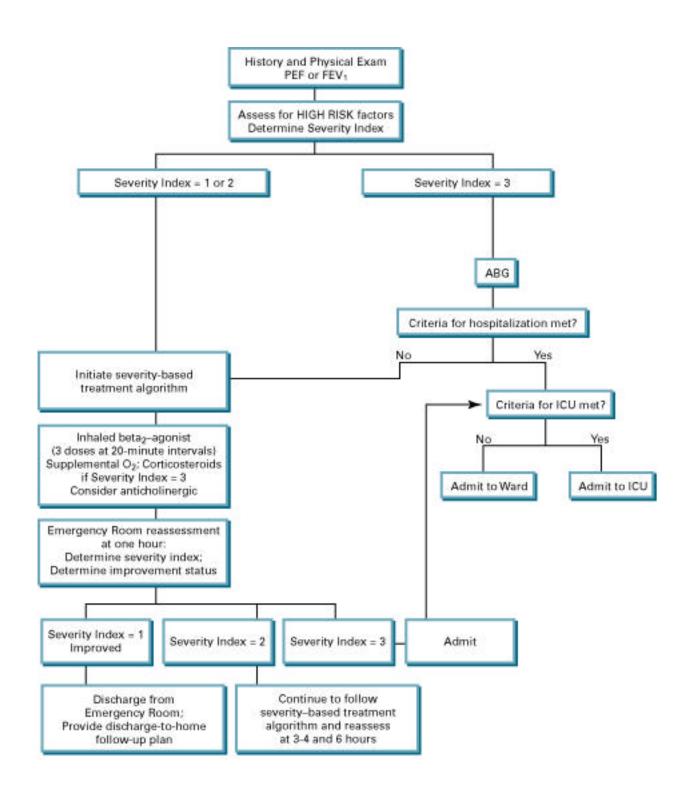
Discharge from the Triage Department after hours or on weekends must be weighed against the risk of prolonging medical evaluation greater than 24 hours.

# **Severity Index Scoring Method**

(1=	mild, 2=moderate, 3=severe)
Use	this rating to evaluate the patient for each of the 4 criteria:
_	
	highest individual score becomes the patient's severity index rating.  rnately: The patient has a severity index of 3 if he or she meets any of the following 6 criteria:
	Pulses paradox >12 mm Hg Diaphoresis
_	Inability to recline
	PEF or FEV <sub>1</sub> < 40% predicted
	O <sub>2</sub> saturation <88%
	Patient deteriorating in Emergency Room

Emergency Room Pr	otocols and Forms	
Emergency Room Flow	v Sheet	
Name:		
ID Number:		
Date:		
Time:		
Chief Complaint:		
Vital Signs: Temp	Pulse BP	Resp
Acuity/Severity Index:	☐ Chronic, mild or moderate☐ Acute, mild	Patient discharged from Emergency Room without evaluation (must complete Discharge Form)

Attach standard Emergency Room form to this page.



# Criteria for Hospitalization: Adult Patients

The main purpose for establishing criteria for hospitalization is to minimize the risks of inappropriate discharges from the Emergency Room leading to potentially serious exacerbations of asthma outside the hospital setting and repeated Emergency Room visits. The criteria change with elapsed time in the Emergency Room in order to account for the patient's changing medical condition. When appropriate, hospitalization should be specified to the ICU.

At entry to the Emergency Room, the criteria for hospitalization are:

- 1. Respiratory arrest (ICU)
- 2. Impending respiratory arrest due to extreme fatigue (ICU)
- 3. Unconsciousness or significantly altered mental state (ICU)
- HIGH RISK patient with Severity Index = 3 (ICU) (High risk is defined on initial assessment form.)
- 5. Tachyarrhythmia (other than sinus tachycardia) (ICU)

At the one hour asthma reassessment in the Emergency Room, the criteria for hospitalization are:

- 1. Earlier admission criteria are met
- 2. Severity Index = 3
- 3. Pulse oximeter < 88% despite supplemental O<sub>2</sub>
- 4. PEF OR FEV<sub>1</sub> < 40%
- 5. HIGH RISK AND WORSENING IN Emergency Room (ICU)

At the 3-4 hour asthma reassessment in the Emergency Room, the criteria for hospitalization are unchanged. At the 6 hour asthma reassessment in the Emergency Room, a final disposition must be made. Any patient with a Severity Index = 2 should be admitted.

There may be unusual circumstances which warrant hospitalization of patients with less severe disease. The Emergency Room physician should use his/her best judgment in such circumstances and document the special circumstances in the Emergency Room note.

### Criteria for Hospitalization: Pediatric Patients

The main purpose for establishing criteria for hospitalization is to minimize the risks of inappropriate discharges from the Emergency Room leading to potentially serious exacerbations of asthma outside the hospital setting and repeated Emergency Room visits. The criteria change with elapsed time in the Emergency Room in order to account for the patient's changing medical condition. When appropriate, hospitalization should be specified to the ICU.

At entry to the Emergency Room, the criteria for hospitalization are:

- 1. Respiratory arrest (ICU)
- 2. Impending respiratory arrest due to extreme fatigue (ICU)
- 3. Unconsciousness or significantly altered mental state (ICU)
- 4. HIGH RISK patient with Severity Index = 3 (ICU)
- 5. Tachyarrhythmia (other than sinus tachycardia) (ICU)

At the one hour asthma reassessment in the Emergency Room, the criteria for hospitalization are:

- 1. Earlier admission criteria are met
- 2. Severity Index = 3
- 3. Pulse oximeter < 88% despite supplemental O<sub>2</sub>

At the 3-4 hour asthma reassessment in the Emergency Room, the criteria for hospitalization are unchanged. At the 6 hour asthma reassessment in the Emergency Room, a final disposition must be made. Any patient with a Severity Index = 2 should be admitted.

There may be unusual circumstances which warrant hospitalization of pediatric patients with less severe disease. The Emergency Room physician should use his/her best judgment in such circumstances and document the special circumstances in the Emergency Room note.

Emergency Roo	m Assessment: Initial		Adı	ult Patients	
Name:					
ID Number:					
Initial Assessment	Date:	_ Ti	me:		
HIGH RISK Patient:		Ad	lmit to Hospital if:		
Recent hospita	alization for asthma		Patient intubated		
-	ency Room for asthma in previou	S	☐ ABG: PaO₂ <50 o	-	)
72 hours	-4:		Respiratory arres	t (ICU)	
Previous intubi	ations awal from oral steroids		Extreme fatigue		
On chronic ora			HIGH RISK Patien		lex = 3
			Altered mental st		
	ompliance with medications or erlay to asthma		☐ Tachyarrhythmia,	angina or myoca	rdial ischemia (ICU)
Physical Exam		Severity In	ndex		
	Resp:		2=moderate, 3=se	vere)	
	Temp:	_	tory distress	Decreased	air movement
	Suppl O <sub>2</sub> (L/min):	•	accessory muscles		
	FVC:		core = S everity I		
PEF:		should be			-
		Pulses p	paradox >12 mm Hg	☐ PEF or FEV₁	<40% predicted
		Diaphor	esis	☐ O₂ saturatio	on <88%
		☐ Inability	to lie supine	☐ Inability to	speak
Orders (Initial)	4.0	_	<b>.</b>	_	
Severity Index =			J Severity Index =		
	solution using 0.5 cc and normal ser every 20 minutes for 1 hour or al			6 solution using 0.9 Julizer every 20 mi	5 cc and normal saline
MDI with space	cer 4 puffs and repeat every 20 mir				acer 4 puffs and repea
	aled anticholinergic			ıtes for 1 hour; plu	s inhaled anticholiner-
	liters/minute via		gic		
nasal cannula			2. Oxygen		ite via nasal cannula
<ul><li>□ 3. Finger pulse o</li><li>□ 4. Start IV Acces</li></ul>			3. Finger pulse of		
_			4. Start IV Acces		
5. Spirometry, in	•	MD 4-	5. Spirometry, in	•	
reassess patie	1 hour then notify Emergency Ro ent and write orders		to reassess pa	atient and write or	
			7. Arterial blood = Admit), ele	gas (if pH $<$ 7.2, P ctrolytes, theophyl	
9.			8. Methylprednis 40-60 mg STA	solone sodium suc NT and q6h x 4 dos	
			9. Chest x-ray		
			<b>1</b> 0.		
☐ Admit to ☐ Ho	spital 🔲 ICU 🏻 I	MD Signati	ure:		Date:
	apitai 🗀 ICO - I	Jigilali	uı <del>c</del>		vale

	Room Proto	cols and Forms ment: 1 Hour		Adult Patients	
Name: ID Number:			_		
ib Number.					
1 Hour Reasse	ssment	Physician Commo	ents		
Date:		☐ Improved	☐ Not iı	mpr oved	Deteriorating
Time:	_				
Physical Exam		Severity Index		Admit to Hospital	if
P:	Resp:	(1=mild, 2=moderate	, 3=severe)	☐ Earlier admission of	criteria are met
BP:	Temp:	Respiratory distr	ess	☐ Severity Index = 3	3
	PEF:	Use of accessor	y muscles	☐ HIGH RISK and wo	rsenina in
	FVC:	Decreased air m	ovement	Emergency Room	· ·
Suppl O <sub>2</sub> (L/min):		Drowsiness, con	fusion	,	
		Highest score = Sevential Severity Index shoul			
		Pulses paradox			
		Diaphoresis			
		Inability to recline	;		
		$\Box$ PEF or FEV, $<40^\circ$	% predicted		
		$\Box$ 0 <sub>2</sub> saturation < 88	3%		
		Patient deteriorat Room	ing in Emergency	,	
Orders					
Severity Index =	= 1 Observe for	60 minutes, then:			
PEF or FE	$V_{_1} > 70\%$ predicted	→ Discharge			
PEF or FE	$V_{_1}$ < 70% predicted	→ Treat as Severity Index 2			
Severity Index =	<b>= 2</b>				
		ng 0.5 cc and normal	☐ 6. Arterial	blood gas (if pH <7.2, PaO <sub>2</sub>	<60, PaCO <sub>2</sub> > 45=
saline :	2.0 cc via nebulizer	q 1 hour or albuterol MDI		electrolytes, theophylline	
	pacer 4 putts and rep plinergic	peat q 1 hour; plus inhaled	☐ 7. Solumed	drol 60 mg IV STAT (if not a	already given)
_	n liters/minute	e via nasal cannula			
_	pulse oximeter	o via madar darimala	9		
4. IV Acc	•		<b>1</b> 0		
☐ 5. Spirom		notify Emergency Room d write orders			
Severity Ind	ex = 3 → ADMIT				
Admit to	Hospital	ICU MD Sigr	nature:		Date:
- Admint to -	- Hospitai -	iso ivib sigi			<b>Date.</b>

Physical Exam    P:				cols and Forms	y Room Protoco	Emergen
Date:   Impr oved   Not impr oved   Deteriorated   Deteri		Adult Patients		nent: 3-4 Hour	Room Assessmo	Emergend
Physician Comments						Name:
Date:   Improved						ID Numbe
Date:   Improved						
Physical Exam    P:			ents	Physician Comme	ssessment	3-4 Hour Re
Physical Exam    P: Resp:	iting	impr oved Deteriorati	☐ Not im	☐ Impr oved		Date:
P: Resp: Respiratory distress						Time:
P: Resp: Respiratory distress						
P: Resp: Respiratory distress						
BP: Temp: Use of accessory muscles Severity Index = 3  0, Sat: PEF: Decreased air movement HIGH RISK and worsening in FEV; FVC: Drowsiness, confusion Emergency Room (ICU)  Suppl 0, (L/min): Highest score = Severity Index or Severity Index should be 3 if:  Pulses paradox >12 mm Hg  Diaphoresis Inability to recline PEF or FEV, <40% predicted 0, saturation <88% Patient deteriorating in Emergency Room  Orders  Severity Index = 1 Observe for 60 minutes, then: PEF or FEV, >70% predicted → Discharge PEF or FEV, <70% predicted → Treat as Severity Index 2  Severity Index = 2  1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic  2. Oxygen liters/minute via nasal cannula  3. Finger pulse oximeter		Admit to Hospital if		Severity Index	1	Physical Exa
BP: Temp: Use of accessory muscles	et	☐ Earlier admission criteria are met	266	Resniratory distr	Resp:	P:
O; Sat: PEF: Decreased air movement		$\square$ Severity Index = 3		<del></del>		BP:
FEV.: FVC:		HIGH RISK and worsening in				
Suppl 0, (L/min): Highest score = Severity Index or Severity Index should be 3 if:    Pulses paradox > 12 mm Hg     Diaphoresis     Inability to recline     PEF or FEV, <40% predicted     O, saturation <88%     Patient deteriorating in Emergency Room     Severity Index = 1		ŭ	fusion	Drowsiness, con		
Pulses paradox > 12 mm Hg   Diaphoresis   Inability to recline   PEF or FEV, < 40% predicted   O, saturation < 88%   Patient deteriorating in Emergency Room   PEF or FEV, > 70% predicted → Discharge   PEF or FEV, < 70% predicted → Treat as Severity Index 2   Severity Index = 2   1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic   Q. Oxygen liters/minute via nasal cannula   Q. Singer Pulse oximeter   Discharge   Discharge			•	•	:	Suppl O <sub>2</sub> (L/m
Inability to recline   PEF or FEV, <40% predicted   O₂, saturation <88%   Patient deteriorating in Emergency Room   Per or FEV, >70% predicted → Discharge   PeF or FEV, <70% predicted → Discharge   PeF or FEV, <70% predicted → Treat as Severity Index 2   Severity Index = 2   1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic   Q. Oxygen				_		
PEF or FEV₁ < 40% predicted  □ 0₂ saturation < 88% □ Patient deteriorating in Emergency Room  Severity Index = 1 Observe for 60 minutes, then: □ PEF or FEV₁ > 70% predicted → Discharge □ PEF or FEV₁ < 70% predicted → Treat as Severity Index 2  Severity Index = 2 □ 1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic □ 2. Oxygen □ liters/minute via nasal cannula □ 3. Finger pulse oximeter  □ PEF or FEV₁ < 40% predicted □ 0₂ saturation < 88% □ Patient deteriorating in Emergency Room  □ 6. Arterial blood gas (if pH < 7.2, PaO₂ < 60, PaCO₂ · Admit), electrolytes, theophylline □ 7. Solumedrol 60 mg IV STAT (if not already given) □ 8. □ 9. □ 10				Diaphoresis		
Orders    Description   Patient deteriorating in Emergency				Inability to recline		
Patient deteriorating in Emergency Room  Severity Index = 1  Observe for 60 minutes, then:  □ PEF or FEV₁ > 70% predicted → Discharge □ PEF or FEV₁ < 70% predicted → Treat as Severity Index 2  Severity Index = 2 □ 1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic □ 2. 0xygen □ liters/minute via nasal cannula □ 3. Finger pulse oximeter □ 10			6 predicted	$\Box$ PEF or FEV <sub>1</sub> < 40%		
Orders  Severity Index = 1  Observe for 60 minutes, then:  □ PEF or FEV₁ > 70% predicted → Discharge □ PEF or FEV₁ < 70% predicted → Treat as Severity Index 2  Severity Index = 2 □ 1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic □ 2. Oxygen liters/minute via nasal cannula □ 3. Finger pulse oximeter  Observe for 60 minutes, then: □ 6. Arterial blood gas (if pH < 7.2, PaO₂ < 60, PaCO₂: Admit), electrolytes, theophylline □ 7. Solumedrol 60 mg IV STAT (if not already given) □ 8. □ 9. □ 10						
Orders  Severity Index = 1  Observe for 60 minutes, then:  □ PEF or FEV₁ > 70% predicted → Discharge □ PEF or FEV₁ < 70% predicted → Treat as Severity Index 2  Severity Index = 2 □ 1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic □ 2. Oxygen liters/minute via nasal cannula □ 3. Finger pulse oximeter  Observe for 60 minutes, then:    6. Arterial blood gas (if pH < 7.2, PaO₂ < 60, PaCO₂ Admit), electrolytes, theophylline □ 7. Solumedrol 60 mg IV STAT (if not already given) □ 8. □ 9. □ 10		,	ng in Emergency			
Severity Index = 1 Observe for 60 minutes, then:  □ PEF or FEV₁ > 70% predicted → Discharge □ PEF or FEV₁ < 70% predicted → Treat as Severity Index 2  Severity Index = 2 □ 1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic □ 2. Oxygen liters/minute via nasal cannula □ 3. Finger pulse oximeter  Observe for 60 minutes, then:  □ 6. Arterial blood gas (if pH < 7.2, PaO₂ < 60, PaCO₂ : Admit), electrolytes, theophylline □ 7. Solumedrol 60 mg IV STAT (if not already given) □ 9. □ 10				noom		
Severity Index = 1 Observe for 60 minutes, then:  □ PEF or FEV₁ > 70% predicted → Discharge □ PEF or FEV₁ < 70% predicted → Treat as Severity Index 2  Severity Index = 2 □ 1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic □ 2. Oxygen liters/minute via nasal cannula □ 3. Finger pulse oximeter  Observe for 60 minutes, then:  □ 6. Arterial blood gas (if pH < 7.2, PaO₂ < 60, PaCO₂ : Admit), electrolytes, theophylline □ 7. Solumedrol 60 mg IV STAT (if not already given) □ 9. □ 10						
<ul> <li>PEF or FEV₁ &gt;70% predicted → Discharge</li> <li>PEF or FEV₁ &lt;70% predicted → Treat as Severity Index 2</li> <li>Severity Index = 2</li> <li>1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic</li> <li>2. Oxygen liters/minute via nasal cannula</li> <li>3. Finger pulse oximeter</li> <li>6. Arterial blood gas (if pH &lt;7.2, PaO₂ &lt;60, PaCO₂ Admit), electrolytes, theophylline</li> <li>7. Solumedrol 60 mg IV STAT (if not already given)</li> <li>8</li> <li>9</li> </ul>					4 0	
<ul> <li>□ PEF or FEV₁ &lt;70% predicted → Treat as Severity Index 2</li> <li>□ Severity Index = 2</li> <li>□ 1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic</li> <li>□ 2. Oxygen liters/minute via nasal cannula</li> <li>□ 3. Finger pulse oximeter</li> <li>□ 6. Arterial blood gas (if pH &lt;7.2, PaO₂ &lt;60, PaCO₂ : Admit), electrolytes, theophylline</li> <li>□ 7. Solumedrol 60 mg IV STAT (if not already given)</li> <li>□ 8.</li> <li>□ 9.</li> <li>□ 10</li> </ul>				•		•
Severity Index = 2  1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic  2. Oxygen liters/minute via nasal cannula  3. Finger pulse oximeter  6. Arterial blood gas (if pH <7.2, PaO <sub>2</sub> <60, PaCO <sub>2</sub> Admit), electrolytes, theophylline  7. Solumedrol 60 mg IV STAT (if not already given)  8 9				<del>-</del>	·	_
<ul> <li>1. Albuterol 0.5% solution using 0.5 cc and normal saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic</li> <li>2. Oxygen liters/minute via nasal cannula</li> <li>3. Finger pulse oximeter</li> <li>6. Arterial blood gas (if pH &lt;7.2, PaO<sub>2</sub> &lt;60, PaCO<sub>2</sub>: Admit), electrolytes, theophylline</li> <li>7. Solumedrol 60 mg IV STAT (if not already given)</li> <li>8.</li> <li>9.</li> </ul>				Treat as Severity muck 2	tv <sub>1</sub> < 70% predicted ***	TET UI
saline 2.0 cc via nebulizer q 1 hour or albuterol MDI with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic  2. Oxygen liters/minute via nasal cannula  3. Finger pulse oximeter  Admit), electrolytes, theophylline  7. Solumedrol 60 mg IV STAT (if not already given)  8 9.					= 2	Severity Inde
with spacer 4 puffs and repeat q 1 hour; plus inhaled anticholinergic  2. Oxygen liters/minute via nasal cannula  3. Finger pulse oximeter  7. Solumedrol 60 mg IV STAT (if not already given)  8 9 10	, >45=					
anticholinergic  2. Oxygen liters/minute via nasal cannula  3. Finger pulse oximeter  3. Finger pulse oximeter	,		_		-	
2. Oxygen liters/minute via nasal cannula 3. Finger pulse oximeter 9.				out q 1 mour, prao minarou		
_ 0. 1 mgs. pass symmetry				via nasal cannula	en liters/minute vi	☐ 2. 0xy
			<u> </u>		•	
			<del>_</del>			_
<ul> <li>Spirometry in 1 hour then notify Emergency Room</li> <li>MD to reassess patient and write orders</li> </ul>						-
To will a ADMIT						J
☐ Severity Index = 3 → ADMIT					dex = 3 → ADMIT	→ Severity I

Emergency	Room Prot	ocols and Forms	
Emergency I	Room Asses	sment: 6 Hour	Adult Patients
Name:			
ID Number:			
6 Hour Reasses	ssment		
Date:			
Time:			
Physician Com			
☐ Improved	☐ No	ot improved	
			<del></del>
			<del></del>
			<del></del>
Physical Exam		Severity Index	Admit to Hospital if
P:	Resp:	(1=mild, 2 = moderate, 3=severe)	Earlier admission criteria are met
BP:	Temp:	Respiratory distress	☐ Severity Index = 3
0, Sat:	PEF:		
FEV <sub>1</sub> :			
Suppl O <sub>2</sub> (L/min):		Drowsiness, confusion	
		Highest score = Severity Index or Severity Index should be 3 if:	
		Pulses paradox >12 mm Hg	
		Diaphoresis	
		Inability to recline	
		PEF or FEV, <40% predicted	
		$\square$ 0 <sub>2</sub> saturation <88%	
		Patient deteriorating in	
		Emergency Room	
Orders			
☐ Severity Index	x = 1 Observe fo	or 60 minutes, then:	
PEF or FI	EV <sub>1</sub> >70% predic	ted → Discharge	
PEF or FI	EV <sub>1</sub> <70% predic	ted → Admit	
☐ Severity Index	x = 2 → ADMIT		
☐ Admit to	☐ Hospital	☐ ICU MD Signature:	Date:

Emergency Room Assessment: Initial	Pediatric Patients
Name:	
ID Number:	
Initial Assessment Detail	<b>T</b>
Date:	_ Time:
HIGH RISK Patient:	Admit to Hospital if:
Recent hospitalization for asthma	Patient intubated, unconscious (ICU)
Seen in Emergency Room for asthma in previou 72 hours	
Previous intubations	Respiratory arrest (ICU)
Recent withdrawal from oral steroids	Extreme fatigue
On chronic oral steroids	HIGH RISK Patient with Severity Index = 3
Extreme noncompliance with medications or	Altered mental status (ICU)
psychiatric overlay to asthma	☐ Tachyarrhythmia, angina or myocardial ischemia (ICU)
Physical Exam	Severity Index
P: Resp:	(1=mild, 2=moderate, 3=se vere)
BP:	Respiratory distress Decreased air movement
O <sub>2</sub> Sat: Suppl O <sub>2</sub> (L/min):	☐ Use of accessory muscles ☐ Drowsiness, confusion
FEV <sub>1</sub> : FVC:	Highest score = $S$ everity Index or $S$ everity Inde $x$
PEF:	should be 3 if:
	Pulses paradox >12 mm Hg PEF or FEV, <40% predicted
	☐ Diaphoresis ☐ 0₂ saturation <91%
	☐ Inability to lie supine ☐ Inability to speak
Orders (Initial)	
☐ Severity Index = 1-2	☐ Severity Index = 3
<ul><li>1. Albuterol .15 mg/kg/dose (max 5 mg/dose)</li><li>3 doses at 20 min intervals for 1 hour</li></ul>	<ul><li>1. Albuterol .15 mg/kg/dose (max 5 mg/dose)</li><li>3 doses at 20 min intervals for 1 hour</li></ul>
$\square$ 2. Oxygen to maintain $0_2$ sat $> 95\%$	$\square$ 2. Oxygen to maintain $O_2$ sat $> 95\%$
3. Finger pulse oximeter	3. Finger pulse oximeter
4. Start IV Access	4. Start IV Access
☐ 5. Spirometry, initial, repeat in 1 hour	☐ 5. Spirometry, initial, repeat in 1 hour
6. Spirometry in 1 hour then notify Emergency Room MD to reassess patient and write	<ul> <li>6. Spirometry in 1 hour then notify Emergency Room MD to reassess patient and write orders</li> </ul>
orders	$\Box$ 7. Arterial blood gas (if pH < 7.2, PaO <sub>2</sub> < 60, PaCO <sub>2</sub> > 45 = Admit
☐ 7. ☐ °	
□ 8	
9	9. Chest x-ray
	<u> </u>
	☐ 11.
☐ Admit to ☐ Hospital ☐ ICU I	MD Signature: Date:

Emergency Room Protocols and Forms					
Emergency Room Assessme	nt: 1 Hour	Р	ediatric Patients		
Name:					
ID Number:					
1 Hour Reassessment	Physician Commo	ents			
Date:	☐ Improved	☐ Not im	pr oved 🔲 🗅	Deteriorating	
Time:					
Physical Exam	Severity Index		Admit to Hospital	if	
P: Resp:	(1=mild, 2=moderate	. 3=severe)	☐ Earlier admission c	riteria are met	
BP: Temp:	Respiratory distr	•	☐ Severity Index = 3		
O <sub>2</sub> Sat: PEF:	Use of accessor		☐ HIGH RISK and wor		
FEV <sub>1</sub> : FVC:	Decreased air m	ovement	Emergency Room (	•	
Suppl 0 <sub>2</sub> (L/min):	Drowsiness, con	fusion	Emorgonoy noom (	1007	
	Highest score = Seven Severity Index should	•			
	☐ Pulses paradox	>12 mm Hg			
	Diaphoresis				
	☐ Inability to recline	•			
	$\Box$ PEF or FEV <sub>1</sub> < 40	% predicted			
	$\Box$ 0 <sub>2</sub> saturation < 9	1%			
	Patient deteriorat	ing in Emergency			
	Room				
Orders					
Severity Index = 1 Observe for 60 minut	es, then:				
☐ PEF or FEV <sub>1</sub> >70% predicted →					
$\square$ PEF or FEV <sub>1</sub> <70% predicted $\longrightarrow$ 7	Treat as Severity Index 2	2			
☐ Severity Index = 2		☐ 5 Snirometr	y in 1 hour then notify Emo	ergency Room MD to	
1. Albuterol .15 mg/kg/dose (max 5	ma/dose) 3 doses		patient and write orders	organoy mooni wib to	
at 20 min intervals for 1 hour. Co	nsider inhaled		ood gas (if pH $<$ 7.2, Pa $0_2$	$<$ 60, PaCO $_2>$ 45 $=$	
anticholinergic and/or 0.01 cc p ous epinephrine subcutaneously			ectrolytes, theophylline		
$\Box 2. \text{ Oxygen to maintain } O_2 \text{ sat } > 95$			ol 1-2 mg per kg IV STAT (i		
☐ 3. Finger pulse oximeter	· · -				
4. IV Access					
		<b>—</b> 10			
☐ Severity Index = 3 → ADMIT					
☐ Admit to ☐ Hospital ☐ ICU	MD Sigr	nature:		Date:	

ame:		
Number:		
number.		
4 Hour Reassessment Physician C	Comments	
ate:	ed 🔲 Not	timpr oved Deteriorating
me:		
<del></del>		
ysical Exam Severity Inde	ex	Admit to Hospital if
Resp: (1=mild, 2=mo	oderate, 3=severe)	Earlier admission criteria are met
_	ory distress	☐ Severity Index = 3
Sat: Use of ac	ccessory muscles	☐ HIGH RISK and worsening in
EV <sub>1</sub> :	ed air movement	Emergency Room (ICU)
ıppl O <sub>2</sub> (L/min): Drowsine	ess, confusion	go, ()
	e = Severity Index or x should be 3 if:	
	radox >12 mm Hg	
Diaphores	_	
☐ Inability to		
	V <sub>1</sub> < 40% predicted	
Q <sub>2</sub> saturat	•	
<del></del>	teriorating in Emergenc	v
Room		•
rders		
Severity Index = 1 Observe for 60 minutes, then:		
☐ PEF or FEV <sub>1</sub> >70% predicted → Discharge		
$\square$ PEF or FEV <sub>1</sub> <70% predicted $\rightarrow$ Treat as Severity	Index 2	
Severity Index = 2		
1. Albuterol .15 mg/kg/dose (max 5 mg/dose) 3 dos	es at 🔲 6. Arteria	I blood gas (if pH $<$ 7.2, PaO <sub>2</sub> $<$ 60, PaCO <sub>2</sub> $>$ 45 :
20 min intervals for 1 hour and consider inhaled a	anti Admit)	, electrolytes, theophylline
cholinergic		edrol 1-2 mg per kg IV STAT (if not already given
☐ 2. Oxygen to maintain O₂ sat > 95%	<b>4</b> 8	
3. Finger pulse oximeter	9.	
<ul><li>4. IV Access</li><li>5. Spirometry in 1 hour then notify Emergency Roc</li></ul>	<b>□</b> 10	
MD to reassess patient and write orders	ווונ	

Name:	ssessment: 6 Hour		
		Pediatric Patients	
		7	
ID Number:			
6 Hour Reassessment			
Date:			
Гіте:			
i iiiie			
Physician Comments			
☐ Improved	☐ Not improved ☐ Do	eteriorating	
			<del></del>
Physical Exam	Severity Index	Admit to Hospital if	
	(1=mild, 2=moderate, 3=s		eria are met
	Respiratory distress  Use of accessory mu	Severity Index = 3	
0 <sub>2</sub> Sat: PEF:	<del></del>		
FEV <sub>1</sub> : FVC:	Decreased all movem Drowsiness, confusion		
Suppl O <sub>2</sub> (L/min):	Highest score = Severity		
	Severity Index should be		
	Pulses paradox >12	mm Hg	
	Diaphoresis		
	Inability to recline		
	PEF or FEV <sub>1</sub> $<$ 40% pre	edicted	
	$\bigcirc$ 0 <sub>2</sub> saturation < 91%		
	Patient deteriorating in	ı	
	Emergency Room		