Rural SimCenter Chico, CA

Rural SimCenter Scenario

Pt name Emilio Garcia DOB 1/24/XX

Scenario Name: Emilo Garcia: Asthma

High Fidelity X	Low Fidelity	Static Model

Target Group: ☒ **Student** ☐ **Professional**
Level: ☐ Advanced ☐ Intermediate ☒ Beginner

Learning Objectives:

Primary Objectives:

Students will:

1. Implement appropriate safety measures particularly related to assessment.
2. Identify the cultural needs of the patient and family, and implement these needs as appropriate in the care provided
3. Recognize respiratory distress and contributing triggers within 5 minutes
4. Determine and implement appropriate interventions.
5. Recognize need for education communicating effectively with the patient, family members and the health care team as required.

Secondary Objectives:

1. Maintain asepsis throughout assessment and interventions
2. Demonstrate safe practice particularly:
   a. ID & DOB
   b. Allergies
3. Demonstrate family centered care
4. Demonstrate professional communication

Learner Preparation Exercise:

Review: (Insert skills or reading students should review)

- ASTHMA vs ASTHMA ASTHMATICUS TRIGGERS TREATMENT PLAN & medications
  - Beta2-Agonists
  - Anticholinergics
  - Glucocorticosteroids
  - Bronchodilators
- Oxygen delivery
- Asthma care videos: http://www.chp.edu/our-services/pulmonology/services/asthma/resources/videos
- Diversity articles and videos

Insert Scenario Summary (Basic overview of Case)
Emilo Garcia is a 9-year-old Hispanic female with acute asthma exacerbation related to pet dander exposure. She was admitted to the hospital from her pediatrician's office on at Tuesday at noon.

Total Time Duration: 45 minutes

Set-up
Preparation
Simulation 10
Debrief 35

Revised 7/14

Initial Subjective Data:
Background Information: Lives with mom and dad on a ranch. Both mom and dad smoke but outside. On government aide.

Past History:
Three ED visits in frequent succession; all billing records indicated diagnoses of pneumonia. The boy also visited the ED another 13 times for asthma and 4 additional times for upper respiratory infections. The family has refused any home visits because they worried about being reported to the immigration authorities. Usually seen in ER due to parents work and fear of authorities being alerted to scheduled office visit. Transportation issue as well.

Presenting History:
Patient presented to the drop-in pediatric clinic this morning with difficulty breathing. His mother reported that Emilio got a new puppy 3 days ago and that the dog has been sleeping in the patient's bed. Multiple inhalers were administered at home, but his respiratory status did not improve. At the pediatric clinic, Emilio was given an albuterol nebulizer treatment, which resulted in some improvement of symptoms but wheezing persists.

Emilio was admitted from the clinic to the hospital at noon and is being managed with IV steroids and albuterol nebulizer treatments.

Patient Description and Image

Name Emilio Garcia
Age 9 years
Birthdate 1/24/XX
Gender male
Weight 110 lbs
Height 4'10
Allergies peanuts, eggs, and wheat

Scenario:* *Emilio Garcia 1/24/XX

Supplies	**Set-up Notes:** What is needed for the patient (simulator/actor) and what is needed for the patient room?
IV Set Up ☐Saline Lock ☒ IV ☒ IV Pump ☐Second IV Fluid Type: D5 ½ NORMAL SALINE WITH 20 mEq Potassium chloride Infusion Rate: 100ml/hr Tubing: Pediatric soluset **Medications** ☒ Med Dispense Medication List 1. **Albuterol** 2. **Methylprednisolone 1mg/kg/dose IV** 3. **Atrovent** 4. 5. 6.	**Setting:** ☐ICU ☐Emergency ☐Medical ☐ Surgery/OR ☐Out-Patient ☒Other __PICU_____ **Monitor Setup:** ☒Primary ECG ☐Secondary ECG ☒ Pulse ☒ Respiratory Rate ☒B/P ☒ SPO2 ☒ Temp ☐ CO2 Other Settings **Moulage: Signs of hypoxia** **Patient Actors Requested:** • Age • Gender • Clothing • Relationship to Patient **Paperwork*** ☒ Physician Orders ☒ Chart ☒ Lab Reports

Revised 7/14

Scenario: ***Emilio Garcia 1/24/XX***

Equipment: ☒ Nasal Cannula ☒ O2 Mask ☒ Non-Rebreather ☒PPE (goggles, gloves, etc) ☒ Penlight ☐ Crash Cart ☐ EMR ☒ Thermometer ☐ Accucheck ☐ NG Tube ☒ Suction ☐ Chest Tube ☐ Other Please Describe Additional Equipment Needs stuffed dog to use blow by with, inspirometer	***Attach Reports to the file** **Facilitator Notes:** will bring to day of class

Scenario:* *Emilio Garcia 1/24/XX

Scenario Progression: Admission Information

Initial State: **Frame 1**		Initial Patient History	
Vital Signs **Cardiac Rhythm**: NSR **Pulse**:94 **Respiratory Rate**:36 Breathing Pattern Chest Rise **Blood Pressure**: 110/70 **SPO2** 86% with oxygen but not connected **Temp** 99.5 F (37.5 C) **General Conditions to be in place for Scenario:** Parent in room with child.		Body System Assessment	Patient Finding
		• Neurological/Sensory	alert and oriented
		• Cardiac	regular sinus rhythm
		• Pulmonary	Inspiratory and expiratory wheezing; hacking, non-productive cough, circumoral cyanosis
		• Musculoskeletal	full rom
		• Gastrointestinal	normal
		• Genitourinary	voiding
		• Skin/Wound	clear
		• Vocal Complaint	mi duelle el pecho y mi brazo (it hurts) referring to chest & arm IV , crying off and on
Correct Action	Move to Frame: 2	• Initial Lab/Diagnostics	
Wrong Action	Move to Frame: 3		
No Action	Move to Frame:		

Facilitator Notes

Scenario: ***Emilio Garcia 1/24/XX***

Initial State: **Frame 2**		Change in Patient Condition	
Vital Signs Cardiac Rhythm:ST Pulse: 110 Respiratory Rate:36 Breathing Pattern Chest Rise Blood Pressure: 114/74 SPO2 90% if oxygen is connected Temp 99.7 F (37.6 C) General Conditions to be in place for Scenario:		Body System Assessment	Patient Finding
		• Neurological/Sensory	alert and oriented
		• Cardiac	regular sinus rhythm
		• Pulmonary	Inspiratory and expiratory wheezing; hacking, non-productive cough, circumoral cyanosis
		• Musculoskeletal	full rom
		• Gastrointestinal	normal
		• Genitourinary	voiding
		• Skin/Wound	clear
		• Vocal Complaint	no quiero when neb is offered
Correct Action	Move to Frame:	• New Lab Reports	
Wrong Action	Move to Frame:		
No Action	Move to Frame:		

Facilitator Notes:

Scenario: ***Emilio Garcia 1/24/XX***

Initial State: **Frame 3**		Initial Patient History	
Vital Signs Cardiac Rhythm:ST Pulse:110 Respiratory Rate:36 Breathing Pattern Chest Rise Blood Pressure:114/74 SPO2 O2 Sat = 88% (if 1 L/min via nasal cannula), O2 Sat = 92% (if 2 L/min via nasal cannula Temp 99.7 F (37.6 C) General Conditions to be in place for Scenario:		Body System Assessment	Patient Finding
		• Neurological/Sensory	alert and oriented
		• Cardiac	regular sinus rhythm
		• Pulmonary	less noises, poor non-productive cough, circumoral cyanosis
		• Musculoskeletal	full rom
		• Gastrointestinal	normal
		• Genitourinary	voiding
		• Skin/Wound	clear
		• Vocal Complaint	mi duelle mi pecho
Correct Action	Move to Frame:	• Initial Lab/Diagnostics	
Wrong Action	Move to Frame:		
No Action	Move to Frame:		

Scenario:* *Emilio Garcia 1/24/XX

Initial State: **Frame 4**		Change in Patient Condition	
Vital Signs Cardiac Rhythm: ST Pulse:122 Respiratory Rate:44 Breathing Pattern shallow Chest Rise Blood Pressure: 118/78 SPO2 78% (regardless of flow rate) Temp 99.5 F (37.5 C) General conditions to be in place for Scenario:		Body System Assessment	Patient Finding
		• Neurological/Sensory	lethargic
		• Cardiac	rapid, regular
		• Pulmonary	quite, No wheezing, no air movement; persistent, hacking cough, cyanosis
		• Musculoskeletal	limp
		• Gastrointestinal	normal
		• Genitourinary	history of voiding
		• Skin/Wound	mottled
		• Vocal Complaint	occasional grunt
Correct Action	Move to Frame:	• New Lab Reports	
Wrong Action	Move to Frame:		
No Action	Move to Frame:		

Scenario: ***Emilio Garcia 1/24/XX***

Initial State: **Frame 5**		Change in Patient Condition	
Vital Signs Cardiac Rhythm:ST Pulse:108 Respiratory Rate:26 Breathing Pattern Chest Rise Blood Pressure:117/84 SPO2 98% 4 liters after neb tx. Temp 99.5 (37.5C) General Conditions to be in place for Scenario:		Body System Assessment	Patient Finding
		• Neurological/Sensory	alert oriented
		• Cardiac	sinus tach
		• Pulmonary	less wheezes but good air exchange
		• Musculoskeletal	full rom
		• Gastrointestinal	normal
		• Genitourinary	normal
		• Skin/Wound	clear
		• Vocal Complaint	Mi siento mas bien
Correct Action	Move to Frame: end of scenario	• New Lab Reports	
Wrong Action	Move to Frame:		
No Action	Move to Frame:		

Facilitator Notes:

Scenario: ***Emilio Garcia 1/24/XX***

Initial State: **Frame 6**		Change in Patient Condition	
Vital Signs Cardiac Rhythm: Pulse: Respiratory Rate: Breathing Pattern Chest Rise Blood Pressure: SPO2 Temp General Conditions to be in place for Scenario:		Body System Assessment	Patient Finding
		• Neurological/Sensory	
		• Cardiac	
		• Pulmonary	
		• Musculoskeletal	
		• Gastrointestinal	
		• Genitourinary	
		• Skin/Wound	
		• Vocal Complaint	
Correct Action	Move to Frame:	• New Lab Reports	
Wrong Action	Move to Frame:		
No Action	Move to Frame:		

Facilitator Notes:

Scenario: ***Emilio Garcia 1/24/XX***

Scenario Progression Algorithm: **Copy and use images to create your algorithm**

FRAME:

Rhythm: SR Temp 99.5 F (37.5 C)
P = 94 RR = 36
O2 Sat = 86% room air

With <3 Liters or > than 5 minutes

FRAME: 3

Rhythm: Sinus Tachycardia
T = 99.7 F (37.6 C) BP = 114/74
P = 110 RR = 36

O2 Sat = 88% (if 1 L/min via nasal cannula),
O2 Sat = 92% (if 2 L/min via nasal cannula

Vocal Cue: Mi duelle

With 3 Liters in less than 3

With 3 Liters O2 in <6 minutes

FRAME:2

Temp 99.5 F (37.5 C)
Rhythm: SR Rate: 94
Resp: 24 B/P 114/74
SPO2: 93 with 3 liters of O2 via NC?

Culturally inappropriate care

FRAME: 4 -MOTHER TAKES CHILD AMA

O2 delayed more than 6 minutes

Nebulizer treatment

FRAME: 5 Rhythm: ST
Rate: 108

Resp: 26 B/P 117/84
SPO2: 98% with 3 liters after neb tx.
Temp 99.5 F (37.5 C)

FRAME: 4
Rhythm: ST Rate: 122

Resp: 44 B/P 118/78
SPO2: 78, no matter how much oxygen
Temp: 99.5 F (37.5 C) Vocal Cue: occ grunt

Scenario: ***Emilio Garcia 1/24/XX***

RURAL SIMCENTER

Routine MEDICATION ADMINISTRATION RECORD

NAME: Emilio Garcia **DOB: 1/24/XX** **GENDER: Male** **PT. ID #** **ALLERGIES: Peanuts, eggs, & wheat**	**ROOM # 604** **PHYSICIAN: Dr. Smith** **PATIENT NOTES & COMMENTS:**

Medication Order	Scheduled Time	Time Administered	Nurse Initials	Comments
D5 1/2 Normal Saline with 20 meq Potassium Chloride @ 100 ml/hr.				
Albuterol 2.5 mg / 3ml NS via nebulizer every 4 Hours				
Atrovent 250 mcg via nebulizer every 8 hours				
Singulair 4 mg PO every evening				
Solu-Medrol (methylprednisolone) ____ mg IV loading dose x 1 dose (4mg/kg/dose) , then _____ mg IV q 6 hrs (1MG/KG/DOSE)				

RURAL SIMCENTER
PRN MEDICATION ADMINISTRATION RECORD

NAME: Emilio Garcia **DOB: 1/24/XX** **GENDER: Male** **PT. ID #** **ALLERGIES: Peanuts, eggs, & wheat**	**ROOM # 604** **PHYSICIAN: Dr. Smith** **PATIENT NOTES & COMMENTS:**

Medication Order	Scheduled Time	Time Administered	Nurse Initials	Comments
Albuterol 2.5 mg / 3ml NS via nebulizer PRN WHEEZING EVERY 2 HOURS				
Tylenol _____ mg PO Every 6 Hours PRN for Fever > 100.6 (15MG/KG/DOSE EVERY 4 HOURS)				
Tylenol _____ mg PO Every 6 Hours PRN for Irritability (15MG/KG/DOSE EVERY 4 HOURS)				

RURAL SIMCENTER

PHYSICIAN'S ORDERS

NAME:

ROOM NO:

PATIENT ID NO

PHYSICIAN:

Drug Allergies

	Another brand of drug identical in form and content may be dispensed unless checked ☐	Nurse's Initials
1.	Admit to PICU	
2.	Condition Guarded:	
3.	Activity: Bedrest	
4.	Diet: NPO	
5.	D5 1/2 Normal Saline with 20 meq Potassium Chloride @ 100 ml/hr.	
6.	Labs: CBC, CMP, ABG;s, ESR	
7.	Diagnostics: C-Xray portable	
8.	O2 per Respiratory Care Protocol • Adjust O2 to maintain SpO2 > 92%. Call physician for O2 usage > 4 L/min or > 40%. • Reassess daily, wean O2 to maintain SpO2 > 94%.	
9.	Aerosol Medications: Albuterol __2.5 mg / 3ml NS_____ via nebulizer every __4_____ Hours Atrovent ___500mcg_____via nebulizer every 12 hours	
10.	Solu-Medrol (methylprednisolone) ____ mg IV loading dose x 1 dose (4mg/kg/dose) , then _____ mg IV q 6 hrs (1MG/KG/DOSE)	
11.	Tylenol _____ mg PO Every 6 Hours PRN for Fever > 100.6 (15MG/KG/DOSE EVERY 4 HOURS)	
12.	Tylenol _____ mg PO Every 6 Hours PRN for Irritability (15MG/KG/DOSE EVERY 4 HOURS)	
13.	Singulair 4 mg PO every evening	
14.		
15.		
16.		
17.		
18.		
19.		
20.		

PHYSICIAN'S ORDERS

PATIENT CHART

Name:

GENDER: DOB: PATIENT ID:	ALLERGIES:	PRIMARY PHYSICIAN:

Case Details:

Emilo Garcia is a 9-year-old Hispanic female with acute asthma exacerbation related to pet dander exposure. he was admitted to the hospital from his pediatrician's office on at Tuesday at noon.

Shift Report:

Patient presented to the pediatric clinic this morning with difficulty breathing. His mother reported that Emilio got a new puppy 3 days ago and that the dog has been sleeping in the patient's bed. Multiple inhalers were administered at home, but her respiratory status did not improve. At the pediatric clinic, Emilio was given an albuterol nebulizer treatment, which resulted in some improvement of symptoms. Emilio was admitted to the hospital at noon and is being managed with IV steroids and albuterol nebulizer treatments.

O2 saturations are 92%-96% on 1 L/min via nasal cannula. His IV infiltrated about an hour ago. The IV team was just here and replaced the IV. He got really worked up when they placed it. His mother is trying to calm him down, but he is very upset. He seems to get scared when he is confronted by a health care worker, especially when it involves some type of treatment. he really needs her nebulizer treatment as soon as the IV team is done. I called 5 minutes ago for the pediatric respiratory therapy team to come and give a breathing treatment, but they have a situation in the emergency department and aren't available for at least an hour. I don't think he can wait that long.

Patient Actors Roles:

Suggested Dialogue for each Actor

Mom

His name is Emilio
He is 9.
His birthday is January 24th.
Allergic to peanuts and eggs and wheat

Post IV start

Emilio: Crying inconsolably.
No more owies. Mi duelle . (That shot hurt)

Regarding the nebulizer left by RT to give due to emergency in ER

Emilio: No quiero!! Pulls away when nurse tries to give
Nurse should suggest mom give it and demonstrate how

Regarding medication IV

Emilio: No, No , No, !!!!! mi van a picar! (they are going to poke me)
Mom: no mi hijo, te van a dar en el suero. No picete. Sera tus ojos. (They are going to give it to you in the IV. As she cuddles him)

Nurse might show how she is going to give med in the IV tubing
Might use the teddy bear with the IV in to demonstrate.

Regarding oxygen

Emilio: no quiero but will wear the nasal cannula
If blow by is used mom to hold
Perhaps have a puppy with the oxygen being delivered.

In regards to questions on triggers

Mom: smokes outside
Run out of medicine every month, could we get more?
Live in an orchard where my husband runs a farm
Emilio: asking for his puppy

Key Points to emphasize:
Triggers around child
How to manage them
Goal for mgt.

Suggested Character Development:
Consider education of family once crisis is past

DEBRIEFING
Points

Status asthmaticus is an acute exacerbation of asthma that remains unresponsive to initial treatment with bronchodilators. Status asthmaticus can vary from a mild form to a severe form with bronchospasm, airway inflammation, and mucus plugging that can cause difficulty breathing, carbon dioxide retention, hypoxemia, and respiratory failure.

Patients report chest tightness, rapidly progressive shortness of breath, dry cough, and wheezing and may have increased their beta-agonist intake (either inhaled or nebulized) to as often as every few minutes.

Typically, patients present a few days after the onset of a viral respiratory illness, following exposure to a potent allergen or irritant, or after exercise in a cold environment. Is it appropriate to ask when the asthma events occur? At home?

Frequently, patients have underused or have been under-prescribed anti-inflammatory therapy. Also consider medication dosage, timing and how long it lasts?

Risk factors for developing severe or persistent status asthmaticus include the following:

History of increased use of home bronchodilator treatment without improvement or effect
History of previous intensive care unit (ICU) admissions, with or without intubation and mechanical ventilator support
Asthma exacerbation despite recent or current use of corticosteroids
Frequent emergency department visits and/or hospitalization (implies poor control)
Less than 10% improvement in peak expiratory flow rate (PEFR) from baseline despite treatment
History of syncope or seizures during acute exacerbation
Oxygen saturation below 92% despite supplemental oxygen

Determine whether the patient has a severe asthma exacerbation without wheezing (ie, the silent chest). Such patients may have such severe airway obstruction or be so fatigued that they are unable to generate enough airflow to wheeze. This is an ominous sign of impending respiratory failure.

Treatment goals

Management goals for status asthmaticus are (1) to reverse airway obstruction rapidly through the aggressive use of beta2-agonist agents and early use of corticosteroids, (2) to correct hypoxemia by monitoring and administering supplemental oxygen, and (3) to prevent or treat complications such as pneumothorax and respiratory arrest.

Fluid replacement

Replace insensible losses
Electrolyte monitoring
Hypokalemia may result from either corticosteroid use or beta-agonist use.

Beta2-Agonists

The first line of therapy is bronchodilator treatment with a beta2-agonist, typically albuterol. Handheld nebulizer treatments may be administered either continuously (10-15 mg/h) or by frequent timing (eg, q5-20min), depending on the severity of the bronchospasm.

Levalbuterol 0.63-mg

Nonselective beta2-agonists: epinephrine or terbutaline

Anticholinergics -suppress conduction in vestibular cerebellar pathways/

Ipratropium bromide (Atrovent)

Glucocorticosteroids- can decrease mucus production, improve oxygenation

Take 4-6 hours for action so need supportive therapy oral or IV
Methylprednisolone 1mg/kg/dose every 6 hours

In addition, corticosteroids can decrease bronchial hypersensitivity, reduce the recovery of eosinophils and mast cells in bronchioalveolar lavage fluid, decrease the number of activated lymphocytes, and help to regenerate the bronchial epithelial cells.

Bronchodilators- higher incidence of side effects and not as strong as Beta 2 -Agonist

Theophylline
Aminophylline
Magnesium sulfate - relax smooth muscle and hence cause bronchodilation by competing with calcium at calcium-mediated smooth muscle binding sites.

Noninvasive Ventilation & Mechanical ventilation

Antibiotics

The routine administration of antibiotics is discouraged.

Oxygen monitoring and therapy

Arterial blood gas (ABG) values are usually used to assess hypercapnia during the patient's initial assessment.
Oxygen saturation
Oxygen therapy is essential, with hypoxia being the leading cause of death in children with asthma.
Oxygen therapy can be administered via a nasal canula or mask, although patients with dyspnea often do not like masks.
With the advent of pulse oximetry, oxygen therapy can be easily titrated to maintain the patient's oxygen saturation above 92%
In the event of significant hypoxemia, non-rebreathing masks may be used to deliver as much as 98% oxygen.
Tracheal intubation and mechanical ventilation are indicated for respiratory failure.

Nitrate oxide

Nitrate oxide has been employed in a child with refractory asthma. The future role of this therapy remains to be determined.

Leukotriene modifiers

Leukotriene modifiers are useful for treating chronic asthma but not acute asthma.
Should be taken at night.

Patient education

Asthma is a chronic illness.
Asthma education is family centered to impart information regarding maintenance, monitoring and measures for environmental control.

Appropriate use of inhalers, compliance
stress-avoidance measures.
Stress factors (ie, triggers of asthma attacks) include pet dander, house dust, and mold.
Strongly discourage smoking.

DIVERSITY DEBRIEFING:

NAME:

ROOM NO: