Simulation Case for an Interprofessional group of Nursing, Physician Assistant and PharmD Students

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I. Title: The evaluation of a patient complaining of shortness of breath

II. Target Audience: Nursing, physician assistant and PharmD students

III. Learning Objectives or Assessment Objectives

A. Primary:
   1. Demonstrate appropriate discipline specific (nursing medicine, pharmacy) skills to assess a dyspneic patient.
   2. Identify correct diagnosis and develop and implement an appropriate initial treatment plan for the dyspneic patient

B. Secondary:
   1. Demonstrate professional communication skills and behaviors while working as a member of the healthcare team.
   2. Effectively communicate patient specific information by presenting a patient case for nursing change of shift and/or a clinical case presentation to a consultant or precepting physician.

IV. Environment

A. Timing: 15-20 minutes
B. Lab Set Up: ED monitored bed
C. Manikin set up: SimMan® in bed supine
D. Props: EKG, BP, Pulse and O₂ saturation monitoring. CXRs and PFTs were appropriate. Bedside equipment would include O₂ and airway adjuncts, nebulizer; medical record/chart; medications (beta-agonist inhaler, injectable steroids, Anticholinergic inhaler
E. Lab personnel needed in control room: I would be the voice of the patient.
F. Distracters: None need

V. Roles
A. PA student coordinates care and does initial evaluation of the patient after reviewing the chart information.
B. Nursing student assesses the patient and helps with making sure the IV is patent, O₂ is placed on the patient and advises regarding other things that are needed.
C. Pharmacy student advises regarding any potential drug interaction related to formulating and implementing a treatment plan.

VI. Case Narratives/Scenario Backgrounds

1. 60 year old man presents to the ER with a 4 day history of increasing shortness of breath. Nothing makes the breathing better except supplemental O₂. Over the last couple of years the patient has experienced dyspnea on exertion to the point of having some dyspnea at rest. He reports a morning cough with yellowish-brown sputum over the past year. Past Medical History: Type II diabetes, Hypertension. ROS: denies chest pain, fever, chills, or lower extremity edema. Smokes 1.5pk/per day of cigarettes and has done so since age 15. Does not drink alcohol.

Meds:  Ipratropium inhaler (MDI) 4 puffs q 6 hr,  
       Glyburide 5mg po tid  
       Metformin 500mg po bid  
       Albuterol inhaler (MDI) i-ii puffs q 4-6 hrs prn  
       Carvedilol 12.5mg ½ tablet po bid  
       Cozaar® 50mg ½ tablet po bid  
       Home O₂ therapy  
PE:  VS: BP 160/100, HR 115, Resp 30 Temp 99.0°F, O₂ Saturation 78% on room air.  
Appearance: lying in bed, tachypneic with perioral cyanosis. No cyanosis, clubbing or edema of the extremities  
Neck: no adenopathy, carotid bruits or JVD  
Lungs: Wheezes and rhonchi are heard bilaterally but no crackles  
Cardiac: Distant heart sounds with regular rate and rhythm.

2. A 62 year old male presents to the ER acutely short of breath and chest discomfort described as tightness and difficulty catching his breath. He
just returned last night from the Midwest where he had his left hip replaced 7 days before. He had the surgery in the Midwest since his daughter was there and better able to take care of him. Past medical history reveals mild systolic hypertension controlled with a diuretic. ROS: denies chest pain, or any other cardiac or pulmonary problems. Smokes 1pk/day of cigarettes and has 1 glass of red wine per evening.
Meds: HCTZ 25mg per day  
Aspirin 325mg per day
PE: VS BP 160/80, HR124 Resp 30 Temp 97.4°F, O₂ Saturation 90% on room air.
Appearance: Comfortably lying in bed but slightly anxious
Lungs: clear with occasional wheezes
Cardiac: tachycardia with (m) or extra heart sounds.
Left Hip: Small anterior surgical scar without sign of infection, tenderness to palpation popliteal area and posterior thigh with no palpable cord or redness

VII. Instructor’s Notes
A. Students will be briefed in advance about their particular roles
B. Simulator settings
C. Props
D. Supplies & equipment

VIII. Debriefing Plan
A. What happens in simulation stays in simulation
B. Honest self and group critique is essential
C. Instructor is only the facilitator (let students talk)
D. Specific debriefing questions
   1. Were the learning objectives met?
   2. What went well?
   3. What didn’t go so well?
   4. How did you feel about the experience?
   5. What did you learn about yourself?
E. Summarize the debriefing.
### Settings for SimMan® manikin

<table>
<thead>
<tr>
<th>1-5 MIN INITIAL STATE</th>
<th>5-10 MIN PE TREND</th>
<th>10-20 MIN</th>
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</thead>
<tbody>
<tr>
<td>Resp: 30, HR: 115 BP 160/100, temp 99, O₂ sat: 78%, EKG sinus tachycardia C/c SOB, “I can’t breathe” “Why are my lips blue”?</td>
<td>Resp: 22, HR: 95 BP 140/98, O₂ Sat: 90%, EKG sinus tachycardia, “I’m feeling a little better”, If O₂ not on or too high O₂ sat &lt;70%. “I don’t feel so good. PE: lungs wheezes &amp; rhonchi, no crackles Cardiac: tachycardia without (m) or other extra heart sounds</td>
<td>PE: distant heart and lung sounds. After treatment with bronchodilator resp: 20, BP 130/92, O₂ sat 94, EKG sinus rhythm, “I’m feeling much better”</td>
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### SimMan® actions (COPD) Run 1

<table>
<thead>
<tr>
<th>STUDENT ACTIONS #1 Nurse</th>
<th>Intro self, wash hands, IV, monitor, O₂ (make sure O₂ it works,)</th>
<th>Assess for signs of cyanosis and respiratory distress. Auscultate lung fields. Prop pt in semi-sitting position. Work with other practitioners</th>
<th>Work with the other students to formulate and implement an initial treatment plan. Pt stabilized gives a “change of shift” presentation.</th>
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<tbody>
<tr>
<td>STUDENT</td>
<td>Intro self, wash hands, IV,</td>
<td>HPI “what is different now?” meds,</td>
<td>Order &amp; interpret labs, PFTs, CXR,</td>
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<tr>
<td><strong>ACTIONS # 2</strong> Physician Assistant</td>
<td><strong>STUDENT ACTIONS PharmD #3</strong></td>
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<tr>
<td>monitor, O₂ (make sure O₂ it works,)</td>
<td>Intro self, wash hands, IV, monitor, O₂ (make sure O₂ it works,)</td>
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<td>allergies, hospitalizations, SH; smokes, drinks, PE: lips, fingers, resp, cardiac, “my legs look a little swollen”</td>
<td>Review historical findings in light of drug list and ask additional appropriate history questions</td>
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<tr>
<td>Treatment: nebulizer, albuterol, IV steroids, Pt stabilized, verbal report to MD (telephone)</td>
<td>Work with the other students to formulate and implement an initial treatment plan.</td>
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<td>Work with the other students to formulate and implement an initial treatment plan. Pt stabilized give a “change of shift” presentation</td>
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<td>STUDENT ACTIONS #2 Physician Assistant</td>
<td>Intro self, wash hands, IV, monitor, O₂ (make sure O₂ it works)</td>
<td>HPI “what is different now?” meds, allergies, hospitalizations, SH; smokes, drinks,</td>
<td>Order &amp; interpret labs, PFTs, CXR, Treatment: symptomatic, further workup, hospitalization, IV heparin, verbal report to MD (telephone)</td>
</tr>
<tr>
<td>STUDENT ACTIONS #3 Pharm D</td>
<td>Intro self, wash hands, IV, monitor, O₂ (make sure O₂ it works,)</td>
<td>Review historical findings in light of drug list and ask additional appropriate history questions</td>
<td>Work with the other students to formulate and implement an initial treatment plan.</td>
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