

## Exemplar 5B. Chronic Obstructive Pulmonary Disease (Medical-Surgical Nursing: Middle-Age Adult)

### Thinking Exercise 5B-1

A 47-year-old Caucasian female presents to the ED with an abrasion requiring stitches on her head. The client provides an overview of her health history, which includes 22 pack-years of cigarette smoking, dyspepsia, chronic obstructive pulmonary disease (COPD), cholecystectomy last year, and amputation of the two lateral fingers on her right hand due to an accident approximately 4 years ago. She provides an incomplete list of home medications to the nurse. **Choose the most likely options for the information missing from the table by selecting from the lists of options provided.**

Medication	Dose, Route, Frequency	Drug Class	Drug Action
Guaifenesin	200 mg orally every 4 hr	Mucolytic agent	<b>1</b>
Tiotropium	18 mcg as a dry powder inhalation once daily	Anticholinergic drug	<b>2</b>
Montelukast sodium	10-mg tablet orally once daily	<b>3</b>	Reduces bronchoconstriction and inflammation
Fluticasone Propionate	100 mcg via inhalation twice daily	<b>4</b>	Decreases inflammation
Albuterol	<b>5</b>	Beta <sub>2</sub> -adrenergic agonist	Reduces bronchoconstriction
<b>6</b>	40 mg orally once daily	Proton pump inhibitor	Reduces acid reflux

#### Options for 1

Reduces chest congestion  
Manages hay fever  
Reduces neurologic pain  
Decreases sinus pressure  
Reduces wheezing

#### Options for 2

Prevents asthma attacks  
Maintains relief of bronchospasm  
Replaces pancreatic enzymes  
Prevents pulmonary hypertension  
Manages urinary retention

#### Options for 3

Beta<sub>2</sub>-adrenergic agonist  
Leukotriene modifier  
Methylxanthine  
Mineralocorticoid  
Tricyclic antidepressant

#### Options for 4

Angiotensin-converting enzyme inhibitor  
Adrenergic blocker  
Glucocorticoid  
Histamine blocker  
Nonsteroidal anti-inflammatory drug (NSAID)

#### Options for 5

0.86 mg as a nebulizer inhalation every 6 hr  
1 puff as a dry powder inhalant PRN every 6–8 hr  
20 mg orally every 8 hr  
2 puffs as an inhalation PRN every 4–6 hr  
40 mg orally 30 min before exercising

#### Options for 6

Omeprazole  
Cimetidine  
Famotidine  
Magnesium phosphate  
Bismuth

### Thinking Exercise 5B-2

A 47-year-old Caucasian female presents to the ED with an abrasion requiring stitches on her head. The client provides an overview of her health history, which includes 22 pack-years of cigarette smoking, dyspepsia, chronic obstructive pulmonary disease (COPD), cholecystectomy last year, and amputation of the two lateral fingers on her right hand due to an accident approximately 4 years ago. The nurse's initial assessment findings include:

- Labored breathing
- Denies headache
- Oxygen saturation = 88% (on room air)
- Unable to read the admission paperwork without her glasses
- Pupils equal, round, and reactive to light
- Arterial blood gas = pH = 7.37, PaCO<sub>2</sub> = 48 mm Hg, PaO<sub>2</sub> = 81.2 mm Hg, HCO<sub>3</sub> = 20.6 mEq/L (20.6 mmol/L)
- Leaning forward with hands on upper thighs
- Chest symmetrically rises with each breath
- Respirations = 26 breaths/min
- Denies fever and chills
- Blood pressure = 142/57 mm Hg
- Heart rate = 95 beats/min

Highlight or place a check mark next to the assessment findings that require follow-up by the nurse.

Thinking Exercise 5B-3

A 47-year-old Caucasian female presents to the emergency department (ED) with an abrasion requiring stitches on her head. The client is a forklift operator for a local manufacturing company and was involved in a work-related accident. She is alert and oriented. Her speech is clear, but she becomes breathless when answering questions. The client provides an overview of her health history, which includes 22 pack-years of cigarette smoking, dyspepsia, chronic obstructive pulmonary disease (COPD), cholecystectomy last year, and amputation of the two lateral fingers on her right hand due to an accident approximately 4 years ago. She lives with a roommate and three dogs, enjoys grilling on the weekends, and drinks four to six beers a week. She is 5 feet 10 inches tall and weighs 123 lb. Which focused questions about the client's COPD will the nurse ask during the client's initial intake assessment? Select all that apply.

- A. "Do you have trouble doing things you enjoy due to shortness of breath?"
- B. "Does your employer follow OSHA protocols?"
- C. "What daily activities do you have difficulty performing?"
- D. "Do you have trouble digesting cholesterol and other fatty foods?"
- E. "Where do you sleep at night?"
- F. "Have you lost weight unexpectedly?"
- G. "Have you ever felt you should cut down on your drinking?"
- H. "Do you enjoy working as a forklift operator?"
- I. "What do you eat and drink on a typical day?"

Thinking Exercise 5B-4

A 47-year-old Caucasian female presents to the ED with an abrasion requiring stitches on her head and an exacerbation of chronic obstructive pulmonary disease (COPD). Her health history includes 22 pack-years of cigarette smoking, dyspepsia, cholecystectomy last year, and amputation of the two lateral fingers on her right hand 4 years ago. Indicate which nursing action listed in the far-left column is appropriate for each potential complication. Note that not all actions will be used.

Nursing Action	Potential Complication	Appropriate Nursing Action for Each Complication
1 Teach pursed-lip breathing technique.	Respiratory infection	12
2 Administer oxygen therapy.	Dysrhythmias	8,
3 Assist the client with ADLs.	Activity intolerance	3, 7
4 Provide five small meals each day.	Oral candidiasis	6, 9
5 Evaluate laboratory results for acid-base and electrolyte imbalances.	Hypoxemia	1, 2
6 Teach the client to swish and spit mouthwash three times a day.	Malnutrition	4, 11, 13
7 Encourage paced self-care with periods of rest.	Anxiety	10, 14
8 Implement continued electrocardiographic monitoring.		
9 Ask the client to rinse her mouth after administering corticosteroid inhalants.		
10 Turn off the lights and ask the client to take slow, deep breaths.		
11 Provide protein shake after each meal.		
12 Teach the client to drink at least 2 L of fluid daily.		
13 Weigh the client each morning on the same scale.		
14 Help the client develop a plan for what she should do when symptoms occur.		

## Thinking Exercise 5B-5

A 5-foot 8-inch, 265-pound male client is admitted to a telemetry unit with a diagnosis of pneumonia. He is 44 years old, lives with his wife and three children, quit smoking 8 years ago after smoking a pack of cigarettes a day for 18 years, and drives a semitruck long distances for a living. His past medical history includes gastrointestinal esophageal reflux disease, hyperlipidemia, metabolic syndrome, chronic obstructive pulmonary disease, and sleep apnea. He is alert and oriented, and reports feeling fatigue and discomfort in the right side of his chest. He is sitting up in a chair, refuses to lie in the bed, and asks for a BiPAP machine, which he uses at home, so that he can take a nap. Choose the most likely options for the information missing from the text below by selecting from the two lists of options provided.

Chronic obstructive pulmonary disease interferes with airflow and gas exchange, leading to increased \_\_\_\_\_ 1 \_\_\_\_\_, \_\_\_\_\_ 2 \_\_\_\_\_, and \_\_\_\_\_ 3 \_\_\_\_\_.  
 These physiologic changes increase the client's risk for \_\_\_\_\_ 4 \_\_\_\_\_, \_\_\_\_\_ 5 \_\_\_\_\_, and \_\_\_\_\_ 6 \_\_\_\_\_.

**Options for 1, 2, and 3**

- Bicarbonate levels
- Blood pressure
- Bronchodilation
- Carbon dioxide levels
- Oxygen levels
- Pulmonary pressure
- Respiratory rate
- Sputum production

**Options for 4, 5, and 6**

- Coronary artery disease
- Hypertension
- Hypoxemia
- Left-sided heart failure
- Metabolic acidosis
- Pulmonary infection
- Respiratory alkalosis
- Right-sided heart failure

**Thinking Exercise 5B-6**

A 44-year-old client is admitted with pneumonia and an exacerbation of chronic obstructive pulmonary disease. His past medical history includes gastrointestinal esophageal reflux disease (GERD), hyperlipidemia, metabolic syndrome, chronic obstructive pulmonary disorder, and sleep apnea. He quit smoking 8 years ago after having smoked a pack of cigarettes a day for 18 years and drives a semitruck long distances for a living. Current assessment findings include:

**Vital Signs**

Temperature	101.2°F (38.4°C)
Heart rate	106 beats/min
Blood pressure	144/79 mm Hg
Respirations	32 breaths/min
Oxygen saturation	84% (on room air)
PEF	52%

**Physical Assessment Findings**

Respiratory assessment findings	Bilateral wheezing Reports dyspnea, denies pain Thick, tenacious secretions Chest diameter ratio 1:1
Other assessment findings	Bilateral lower extremity pitting edema

**Laboratory Test Results**

Hemoglobin	18 g/dL (180 g/dL)
Hematocrit	42% (0.42 volume fraction)
Potassium	4.2 mEq/L (4.2 mmol/L)
pH	7.32
PaO <sub>2</sub>	67 mm Hg
Paco <sub>2</sub>	60 mm Hg
HCO <sub>3</sub>	22 mEq/L (22 mmol/L)

For each action below, use an X to specify whether the action would be **Indicated** (appropriate or necessary), **Contraindicated** (could be harmful), or **Non-Essential** (makes no difference or is not necessary) for the client's care at this time.

Nursing Action	Indicated	Contraindicated	Non-Essential
Obtain sputum samples for culture and sensitivity.	X		
Administer humidified oxygen via Venturi mask.	X		
Provide the client with smoking cessation education.			X
Type and cross for blood products.			X
Perform pulmonary function tests after administering bronchodilator.	X		
Administer 20 mEq oral potassium chloride.		X	
Administer albuterol nebulizer 15 minutes before each meal.	X		
Implement vibratory positive expiratory pressure therapy.		X	
Place the client on a 1200-mL fluid restriction.		X	

### Thinking Exercise 5B-7

A 5-foot 8-inch, 265-lb male client was admitted to a telemetry unit with a diagnosis of pneumonia. He is 44 years old, lives with his wife and three children, quit smoking 8 years ago after having smoked a pack of cigarettes a day for 18 years, and drives a semitruck long distances for a living. His past medical history includes gastrointestinal esophageal reflux disease (GERD), hyperlipidemia, metabolic syndrome, chronic obstructive pulmonary disorder, and sleep apnea. He is alert and oriented, refuses to lie in the bed, and states that he uses a BiPAP machine when he sleeps. Which statements will the nurse include in this client's health teaching? **Select all that apply.**

- A. "Lie on your back with a pillow against your stomach when performing coughing exercises."
- B. "Walk 20 minutes each day with periods of rest when you become too short of breath to continue."
- C. "It is okay to sleep in a recliner or with several pillows tucked behind your back."
- D. "Make sure your oxygen flow meter is never higher than 4 liters per minute."
- E. "There are many programs and products that can help you stop smoking."
- F. "Gargle and rinse your mouth with water after using your fluticasone propionate inhaler."
- G. "Use of a spacer with a dry powder inhaler improves administration into the lungs."
- H. "Wait 1 minute before taking a second dose of your albuterol inhaler."