

**Preconference Form**

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Medical Diagnosis/Disease: COPD

**NCLEX IV (8): Physiological Integrity/Physiological Adaptation**

Anatomy and Physiology  
Normal Structures  
Air enters the upper respiratory tract through the nose, the oropharynx to the laryngopharynx, then through the epiglottis to the larynx before moving into the trachea. The trachea divides into the right and left mainstem bronchi at the carina, located at the 4th and 5th thoracic vertebrae. Once the air passes the carina, it is in the lower respiratory tract which consist of the bronchi, bronchioles alveolar ducts, and alveoli. The right lung is divided into 3 lobes and the left lung into 2 lobes. The mainstem bronchioles subdivide to form the lobar, segmental and subsegmental bronchi. The bronchioles are encircled by smooth muscles that constrict and dilate. The alveoli are the small sacs that are the primary site of gas exchange for O<sub>2</sub> and CO<sub>2</sub>

Pathophysiology of Disease  
Chronic inflammation of the airways, lung parenchyma, and pulmonary blood vessels. Airflow limitation not fully reversible during forced exhalation. Cause: loss of elastic recoil and airflow obstruction, from mucus hypersecretion, mucosal edema, and bronchospasm. Inflammatory process starts with inhaling noxious particles and gases (cig smoke). With repeated exposure, chronic inflammation causes tissue destruction and disrupts normal defense mechanisms and repair process of the lungs. Inability to expire air due to main site of the airflow limitation is in the smaller airways. As peripheral airways become obstructed, air is progressively trapped during expiration. Chest hyper-expands and becomes barrel shaped bc the respiratory muscles cannot function effectively

**NCLEX IV (7): Reduction of Risk**

Anticipated Diagnostics  
Labs  
ABGs to assess abnormal oxygenation (o<sub>2</sub>, cO<sub>2</sub>, pH levels in blood) ★  
Complete Blood Count (CBC): May reveal elevated hemoglobin or hematocrit  
Additional Diagnostics ★  
Spirometry- confirms the diagnosis, presence of airflow obstruction and vital capacity  
CXR- show flat diaphragm due to hyperinflated lungs  
6 min walk test- measures o<sub>2</sub> - lower 88% - O<sub>2</sub> therapy  
ECG can show signs of rt HF  
Sputum culture to identify bacterial causes

**NCLEX II (3): Health Promotion and Maintenance**

Contributing Risk Factors ★  
Cig smoking - reduces ciliary activity and causes hyperplasia of goblet cells, increasing mucous production  
- Infection  
- Asthma  
- Air pollution  
- Occupational chemicals and dusts  
- Aging  
- Genetics

Signs and Symptoms  
Chronic cough  
dyspnea  
wheezing due to narrowed airways  
chest tightness ★  
sputum production  
barrel chest  
cyanosis  
fatigue - poor oxygenation ★  
weight-loss  
frequent respiratory infection  
hypoxia

**NCLEX IV (7): Reduction of Risk**

Possible Therapeutic Procedures  
Non-surgical  
oxygen therapy  
Nutrition therapy - lack of appetite, inc metabolic rate  
Surgical  
Lung volume reduction surgery - reduce the size of the lungs by removing diseased lung tissue  
Bronchoscopic lung volume reduction - placing 1-way valves by bronchoscopy allowing air to leave lung during exhalation  
lung transplant  
bullectomy- 1 or more bullae are removed to decrease WOB

Prevention of Complications  
(What are some potential complications associated with this disease process)  
Respiratory Infections: more susceptible  
Pulmonary Hypertension  
Cor pulmonale  
Hypoxemia, hypercapnia  
pneumothorax-collapsed lung  
weight loss, muscle wasting  
Acute exacerbations

**NCLEX IV (6): Pharmacological and Parenteral Therapies**

Anticipated Medication Management  
Bronchodilator drug therapy relaxes bronchial smooth muscle in the airway and improves ventilation of lungs  
Short acting b<sub>2</sub>-adrenergic agonist like albuterol  
Anticholinergics block action of ACTH on the muscarinic receptors in the smooth muscle of the broncho tracheal tree  
Short-acting muscarinic agent, long-acting muscarinic agent  
Inhaled corticosteroids: To reduce airway inflammation.  
Mucolytics: To thin mucus and ease expectoration.  
Antibiotics: May be prescribed during exacerbations to treat bacterial infections

**NCLEX IV (5): Basic Care and Comfort**

Non-Pharmacologic Care Measures  
Smoking cessation  
Pulmonary rehabilitation  
Breathing exercises - pursed lip, diaphragmatic  
Nutritional support  
Adequate hydration  
Psychosocial support- support groups, stress Management techniques  
Energy conservation

**NCLEX III (4): Psychosocial/Holistic Care Needs**

What stressors might a patient with this diagnosis be experiencing?  
Loss or change of job  
decreased energy for social activities ★  
impaired quality of life  
financial concerns  
body image issues  
uncertainty about the future  
physical limitations  
Difficulty coping ★

**Client/Family Education**

List 3 potential teaching topics/areas  
• Teach about effective breathing techniques  
• Teach about smoking cessation  
• Educate on the importance of vaccinations (flu), avoiding crowds, hand hygiene

**NCLEX I (1): Safe and Effective Care Environment**

Multidisciplinary Team Involvement  
(Which other disciplines do you expect to share in the care of this patient)  
Dietitian  
Physical therapist  
Social worker  
respiratory therapist  
pulmonologist  
pharmacist  
PCP  
Nurse