

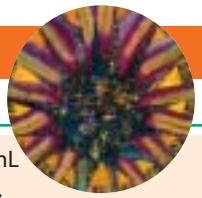
Nursing Care Plan

A Client with COPD

Anna Mercurio, known as “Happy” by all her friends, is an 83-year-old widow who lives with her two adult sons. Over the past 15 years, Mrs. Mercurio has become increasingly short of breath while gardening and walking, two favorite activities. She also has developed a chronic cough that is particularly bad in the mornings. Ten years ago, her family physician told her that she had emphysema. She is admitted to the hospital with possible pneumonia and acute exacerbation of COPD.

ASSESSMENT

Jeff Harris, RN, admits Mrs. Mercurio to the medical unit. In the nursing history, Mr. Harris notes that she denies ever smoking, but says that her husband and two sons have been smokers “for practically their whole lives.” She says she lived an active life before developing lung disease, but now her breathing and cough have progressed so that she now must rest after just a few minutes of housework or other activity. Her cough is productive of moderate to large amounts of sputum, particularly in the mornings. She



developed increasing shortness of breath and sputum 2 days ago; this morning, she could not complete her morning activities without resting, so she contacted her doctor.

On physical examination, Mr. Harris notes the following: skin very warm and dry, color dusky. Pauses frequently while speaking to breathe. Respiratory rate 36, fairly shallow; coughs frequently, producing large amounts of thick, tenacious green sputum. Other vital signs: P 115 and irregular, BP 186/60, T 102.4°F (39°C). Appears very thin; weight 96 lb (43.6 kg), height 63 inches (160 cm). Anteroposterior:lateral chest diameter approximately 1:1; moderate kyphosis noted. Chest hyperresonant to percussion. Auscultation reveals distant breath sounds with scattered wheezes and rhonchi throughout lung fields. Chest X-ray shows flattening of diaphragm, slight cardiac enlargement, prominent vascular and bronchial markings, and patchy infiltrates. Initial laboratory work reveals moderate erythrocytosis, leukocytosis, and low serum albumin. Arterial blood gas results: pH 7.19; PO_2 54 mmHg; PCO_2 59 mmHg; HCO_3^- 30 mg/dL, and O_2 saturation 88%. Admitting orders include sputum specimen for culture; intravenous penicillin G, 2 million units every 4 hours; ipratropium bromide (Atrovent) inhaler, two puffs every 6 hours; beclomethasone dipropionate (Vanceril) inhaler, two puffs every 6 hours; bed rest with bathroom privileges; oxygen per nasal cannula at 2 L continuously; and regular diet.

DIAGNOSES

Mr. Harris develops the following nursing diagnoses for Mrs. Mercurio.

- *Ineffective airway clearance* related to pneumonia and COPD
- *Impaired gas exchange* related to acute and chronic lung disease
- *Risk for impaired spontaneous ventilation* related to loss of hypoxic respiratory drive and respiratory muscle fatigue
- *Impaired home maintenance* related to activity intolerance

EXPECTED OUTCOMES

The expected outcomes specify that Mrs. Mercurio will:

- Expectorate secretions effectively.
- Return to level of pulmonary function prior to acute exacerbation.
- Demonstrate improved arterial blood gas and oxygen saturation values.
- Maintain spontaneous respirations without excess fatigue.
- Verbalize willingness to allow sons or a housekeeper to assist with daily household tasks.

PLANNING AND IMPLEMENTATION

Mr. Harris plans and implements the following interventions while Mrs. Mercurio is hospitalized.

- Assess respiratory status and level of consciousness every 1 to 2 hours until stable, then at least every 4 hours.
- Closely monitor response to oxygen therapy, including skin color, oxygen saturation, sputum consistency, and respiratory drive.

- Increase fluid intake to at least 2500 mL per day and provide bedside humidifier.
- Elevate head of bed to at least 30 degrees at all times.
- Teach “huff” coughing technique.
- Administer medications as ordered; providing ipratropium inhaler before beclomethasone inhaler. Provide mouth care after inhalers.
- Contact respiratory therapy for percussion and postural drainage following inhaler treatments.
- Provide for uninterrupted rest periods following treatments and procedures.
- Meet with Mrs. Mercurio and her sons to develop a postdischarge care plan.
- Refer to home health department for nursing follow-up.
- Refer to social services for possible assistance with home maintenance.

EVALUATION

After the first day in the hospital, Mrs. Mercurio’s condition begins to improve slowly. On discharge 6 days later, she is able to provide self-care with less fatigue and dyspnea. She is using oxygen at night only, admitting that it is just for security. Although a few scattered wheezes and rhonchi are still present in her lungs, Mrs. Mercurio’s sputum is thinner, white, and easily expectorated. She will continue taking oral penicillin V for an additional 10 days at home. She will also continue using the Atrovent and Vanceril inhalers as prescribed at home. Although Mrs. Mercurio’s sons admit they will probably never be able to quit smoking, they have agreed to smoke only in the garage or outside. A home health nurse will initially evaluate Mrs. Mercurio’s progress three times weekly. Arrangements have been made for a housekeeper to come twice a week for cleaning and laundry. Mrs. Mercurio is glad to be returning home and grateful for the arrangements that have been made.

Critical Thinking in the Nursing Process

1. Mrs. Mercurio has never been a smoker but had long-term exposure to secondhand smoke. How does secondhand smoke contribute to lung diseases in adults and children?
2. Mr. Harris’s nursing care plan included the nursing diagnosis, *Risk for impaired spontaneous ventilation* related to loss of hypoxic respiratory drive and respiratory muscle fatigue. Identify the normal physiologic events that stimulate breathing, and describe how these differ for the client with chronic hypoxemia and hypercapnia.
3. The client with an acute exacerbation of COPD is at risk for respiratory failure. What changes in Mrs. Mercurio’s assessment findings could indicate this complication?
4. Develop a nursing care plan for Mrs. Mercurio for the nursing diagnosis, *Deficient diversional activities* related to inability to continue preferred activities.

See Critical Thinking in the Nursing Process in Appendix C.