Shortness of Breath Scenario for an Emergency Medical Responder (EMR) and Primary Care Paramedic (PCP) in Alberta - Assessment and Treatment within Scope of Practice

Scenario Overviewed

You are dispatched to a 68-year-old female experiencing sudden shortness of breath while watching TV at home. Upon arrival, you find the patient sitting upright, gasping for air. She appears anxious and is using accessory muscles to breathe. Her daughter informs you that the patient has a history of COPD and congestive heart failure (CHF). She was doing fine until about 30 minutes ago when her breathing suddenly worsened.

Initial Assessment:

- Scene Safety: Ensure the scene is safe before approaching the patient.
- Primary Survey:
 - **Level of consciousness**: Patient is alert but visibly anxious and confused at times.
 - **Airway**: Patent, no visible obstruction.
 - **Breathing**: Respiratory rate of 28 breaths per minute with pronounced use of accessory muscles. Wheezing is audible, and the patient is unable to complete full sentences.
 - **Circulation**: Skin is cyanotic around the lips and extremities. Radial pulse is weak and rapid. No signs of external bleeding.

History Taking (SAMPLE):

- **Signs and Symptoms**: Severe shortness of breath, wheezing, and chest tightness. The patient denies chest pain but says she feels "air hungry."
- Allergies: None known.
- **Medications**: The patient is on Salbutamol (Ventolin) inhaler, Ipratropium (Atrovent) inhaler, Furosemide (Lasix), and Lisinopril. She has not taken any medications today because she felt fine in the morning.
- **Past medical history**: Chronic Obstructive Pulmonary Disease (COPD), Congestive Heart Failure (CHF), and hypertension.
- Last oral intake: Breakfast about 2 hours ago.
- **Events leading up to the emergency**: Shortness of breath began suddenly while watching TV. No physical exertion or recent illness noted.

Vital Signs:

- **HR**: 118 bpm (weak and irregular)
- **BP**: 160/95 mmHg

- **RR**: 28 breaths per minute
- **SpO2**: 88% on room air
- Skin: Cyanotic, cool, and diaphoretic
- **GCS**: 14 (E4, V5, M5)

Differential Diagnoses:

- Acute COPD exacerbation
- Congestive heart failure exacerbation (with possible pulmonary edema)
- Asthma exacerbation
- Pulmonary embolism (less likely, no signs of sudden collapse or chest pain)
- Pneumonia (no fever or productive cough present)

Interventions (EMR/PCP Scope of Practice in Alberta):

- 1. **Oxygen Therapy**: Administer high-flow oxygen via non-rebreather mask at 15 L/min to raise SpO2 to at least 92%. Monitor for oxygen saturation improvement and the patient's response, especially given her history of COPD.
- 2. Bronchodilators:
 - Assist the patient in using her Salbutamol (Ventolin) and Ipratropium (Atrovent) inhalers if she has them available. Alternatively, administer Salbutamol (Ventolin) 5 mg and Ipratropium (Atrovent) 500 mcg via nebulizer, if available, to relieve bronchospasm – appropriate PPE required.
- 3. **Cardiac Monitor**: Apply a 4-lead ECG to monitor for dysrhythmias, which can be secondary to hypoxia or CHF. Obtain 12 lead ECG if available.
- 4. **IV Access**: Establish IV access with a saline lock to prepare for possible fluid therapy or medication administration in case of deterioration –if within scope of practice.
- 5. **Transport Considerations**: Prepare for immediate transport to the nearest emergency facility. Initiate code 2 transport if the patient's condition worsens or if she remains in severe respiratory distress.
- 6. **Reassess**: Continuously monitor the patient's respiratory rate, effort, and SpO2, as well as cardiac status. Be prepared for potential decompensation (e.g., respiratory failure or cardiac arrest).
- 7. **Risk and Considerations**: Confirm with lung sounds and history, consider risk vs benefit. Have ALS enroute to location. Ventolin increases workload on the heart. If the patient has CHF, increased workload can negatively affect cardiac output.

Communication with Medical Direction:

Provide a concise radio report:

• "We are en route with a 68-year-old female presenting with severe shortness of breath. Vital signs include BP 160/95, HR 118, RR 28, and SpO2 88% on room air. History of COPD and CHF. We've administered oxygen via NRB, and bronchodilators. She is cyanotic, using accessory muscles, and has audible wheezing. ETA is 12 minutes."

Outcome:

After administration of oxygen and bronchodilators, the patient shows slight improvement in breathing. Her SpO2 rises to 92%. Upon arrival at the hospital, the patient is stabilized and prepared for further treatment, including diuretics for CHF or steroids for COPD exacerbation.

This scenario provides practice in managing patients with complex respiratory issues, highlighting the importance of rapid interventions like oxygen therapy, bronchodilators, all within the PCP scope in Alberta