Medical Surgical / Cardiac / Pulmonary Edema (PE)

🚩**=Critical Situation. Call Rapid Response Team (RRT). Code may be Imminent. May need to go to the cath lab, the OR, or be transferred to the ICU.**
Definition: Pulmonary Edema is a critical condition. Fluid accumulates in the alveoli, impairing gas exchange and leading to hypoxia and inadequate ventilation. It represents life-threatening respiratory compromise requiring immediate medical and ventilatory support.

Subjective, Objective, Risk Factor Cues/Symptoms, and Analysis of Cues			
Subjective Cues/Symptoms	**Objective Cues/Symptoms**	**Risk Factor Cues/Symptoms**	**Analysis of Cues**
• Severe shortness of breath • Air hunger • "can't catch my breath." • Feeling of drowning or suffocation • Orthopnea (worse when lying flat, requires 1, 2, or 3 pillows to breathe) • Paroxysmal nocturnal dyspnea (PND) • Chest heaviness	• Hypoxemia (low SpO_2) • Crackles/rales on auscultation • Pink, frothy sputum • Tachypnea • Use of accessory muscles • Tachycardia	• History of heart failure or cardiomyopathy • Acute myocardial infarction • Hypertension • Renal failure/fluid overload • Valvular heart disease • Excess IV fluid administration	• 🚩Severe dyspnea, orthopnea, air hunger, anxiety, hypoxemia, crackles, tachypnea, pink frothy sputum, and use of accessory muscles indicate acute pulmonary edema progressing to respiratory failure. 🚩 This reflects rapid fluid accumulation in the alveoli with impaired gas exchange, signaling hypoxia, fatigue, and respiratory collapse without immediate ventilatory and hemodynamic support.
🚩**Potential Complications:** include acute hypoxic respiratory failure, cardiac arrest, multi-organ dysfunction, and death. Ongoing hypoxia may also lead to cerebral injury, dysrhythmias, and hemodynamic collapse.			

Prioritized Hypotheses	
• Acute Decompensated Heart Failure • Cardiogenic Pulmonary Edema from Myocardial Infarction • Fluid Overload (Renal Failure or Excess IV Fluids)	• Acute Respiratory Distress Syndrome (ARDS) • Hypertensive Emergency with Pulmonary Edema • Valvular or Structural Cardiac Failure (e.g., acute mitral regurgitation)

Possible Procedures or Surgeries	
• Noninvasive Ventilation (CPAP or BiPAP) • Endotracheal Intubation and Mechanical Ventilation	• Central Venous Access • Arterial Line Placement

Diagnostic Test & Purpose	
Arterial Blood Gas (ABG)	Evaluates oxygenation, ventilation, and acid–base status in respiratory failure.
Chest X-ray	Confirms pulmonary edema, assesses lung fields, and identifies cardiomegaly or alternative causes.
Pulse Oximetry	Provides continuous monitoring of oxygen saturation and response to therapy.
B-type Natriuretic Peptide (BNP)	Differentiates cardiogenic pulmonary edema from non-cardiac causes.
Echocardiogram	Assesses ventricular function and valvular disease-causing pulmonary edema.
Electrocardiogram (ECG)	Identifies ischemia or dysrhythmias precipitating decompensation.
Basic Metabolic Panel (BMP)	Evaluates renal function and electrolytes affecting fluid balance and ventilation.
Serum Lactate	Assesses tissue hypoxia and severity of systemic compromise.

Medication	Classification	Purpose
Furosemide (Lasix)	Loop Diuretic	Removes excess fluid, decreases pulmonary congestion, and improves oxygenation.
Nitroglycerin (Nitrostat)	Vasodilator (Nitrate)	↓ preload and afterload, pulmonary capillary pressure, and dyspnea.
Morphine (MS Contin)	Opioid Analgesic	Decreases anxiety, preload, and sensation of air hunger in acute pulmonary edema.

Albuterol (Proventil)	Bronchodilator (β_2-agonist)	Improves airflow and reduces bronchospasm, contributing to respiratory distress.
Norepinephrine (Levophed)	Vasopressor	Supports blood pressure in patients with cardiogenic shock or severe hypotension.
Dobutamine (Dobutrex)	Inotropic Agent	Improves cardiac contractility and output in cardiogenic pulmonary edema.
Methylprednisolone (Solu-Medrol)	Corticosteroid	Reduces inflammation in non-cardiogenic pulmonary edema or ARDS.

Acute Patient Centered Nursing Care Plan Solutions & Interventions Generated, Rationales, Actions Taken, and Evaluation

**Please note that the "related to" component of the Nursing Diagnosis has been removed from these sheets to accommodate the wide variability among patients and to align with The Joint Commission's emphasis on patient-centered care.*

Nursing Diagnosis*	Evidence-Based Nursing Interventions & Rationales	Evaluation/Expected Outcomes
Impaired Gas Exchange	Apply O_2; initiate CPAP/BiPAP as ordered, Position in high-Fowler's, Monitor SpO_2 and ABGs. Rationale: O2 Sat is a quick, accurate, noninvasive way to monitor respiratory status. Fluid in alveoli impairs diffusion; oxygen and positive pressure improve alveolar gas exchange.	SpO_2 ≥94%; ABGs improving; dyspnea reduced.
Ineffective Breathing Pattern	Assess RR, accessory muscle use. Coach slow, pursed-lip breathing. Prepare for intubation if fatigue or Altered Mental Status. Rationale: Tachypnea and fatigue precede respiratory collapse; early support prevents failure.	RR normalized; decreased accessory muscle use.
Excess Fluid Volume	Strict I&O; daily weights. Weigh daily with the same type of clothing, after voiding and before breakfast. Administer diuretics as ordered. Assess lung sounds and edema. Rationale: Removing excess volume lowers pulmonary capillary pressure and edema.	Crackles diminished; net negative balance achieved.
Decreased Cardiac Output	Continuous telemetry and hemodynamic monitoring. (blood pressure, heart rate, urine output, mentation). Administer vasodilators/inotropes as ordered. Assess perfusion (UOP, mentation). Rationale: Optimizing preload/afterload and contractility improves forward flow (cardiac output) and oxygen delivery. Hypotension, tachycardia, decreased urine output, or altered mental status can signal poor cardiac output and inadequate organ perfusion requiring immediate intervention.	MAP** ≥65; UOP ≥30 mL/hr; mentation improved.
Anxiety	Stay with the patient; provide clear explanations. Administer anxiolytics/morphine as ordered. Rationale: Anxiety increases sympathetic drive and oxygen demand; reassurance reduces the work of breathing.	Patient calmer; reports less distress.
Risk for Aspiration	Keep HOB ≥30°. Suction – only if necessary. Maintain NPO until stable. Rationale: Aspiration worsens hypoxia and lung injury; positioning and airway care reduce risk.	No aspiration events: lungs remain clear.

🚩 Failure to Rescue (FTR) Cues and Safety Alerts, Signs of Conditioning Worsening, & Escalation of Care

- If the patient is not improving or subtly getting worse, use 🚩 **Failure to Rescue (FTR)** guidelines that follow and notify the provider.
- **Definition**: FTR is when a patient has subtle signs of worsening (e.g., vital sign changes, new symptoms, decreased urine output), but the problem isn't recognized or acted upon in time — leading to a serious adverse outcome.
- 🚩 **What is the impact of this diagnosis on the FTR risk?** Pulmonary edema carries a very high FTR risk because patients can progress rapidly from dyspnea to hypoxic collapse, and any delay in recognizing worsening oxygenation, fatigue, or mental status changes can result in sudden respiratory arrest and death.

🚩Failure to Rescue Cues	🚩Potential Complications	Why FTR Could Have Happened	🚩Actions: Escalation of Nursing & Medical Care
🚩Falling SpO_2 despite oxygen therapy	🚩Acute hypoxic respiratory failure	Oxygen needs are underestimated; delayed respiratory support	🚩Increase O_2 delivery; initiate CPAP/BiPAP; notify provider; activate Rapid Response
🚩Rising respiratory rate with accessory muscle use	🚩Imminent respiratory fatigue and collapse	The work of breathing is not reassessed frequently	🚩Place patient in high-Fowler's; prepare for intubation; obtain ABG
🚩New confusion, agitation, or lethargy	🚩Cerebral hypoxia	Mental status change misattributed to anxiety or meds	🚩Perform focused neuro check; check SpO_2/ABG; escalate to provider/RRT
🚩Pink frothy sputum or worsening crackles	🚩Worsening pulmonary edema	Diuretic response not evaluated; fluid overload persists	🚩Administer IV diuretics; restrict fluids; obtain STAT CXR
🚩Hypotension after diuresis or vasodilation	🚩Cardiogenic shock	Hemodynamics are not closely monitored	🚩Start vasopressors/inotropes as ordered; insert arterial line; ICU transfer

🚩Persistent dyspnea despite therapy	🚩Impending respiratory arrest	Delayed airway decision	🚩Prepare for endotracheal intubation; call anesthesia/critical care
🚩Tachycardia with chest pain	🚩Myocardial ischemia precipitating failure	The cardiac cause was not addressed	🚩Obtain STAT ECG; notify cardiology; initiate ACS protocol

Resources:

- American Lung Association (1/12/2025), Everything You Need to Know About Pulmonary Edema. Retrieved 1/15/2026 from: https://www.lung.org/blog/pulmonary-edema
- Cleveland Clinic (2026). Pulmonary Edema. Retrieved January 2026 from: https://my.clevelandclinic.org/health/diseases/24218-pulmonary-edema
- Mayo Clinic (2026). Pulmonary edema. Retrieved January 2026 from: https://www.mayoclinic.org/diseases-conditions/pulmonary-edema/symptoms-causes/syc-20377009