

NGN NCLEX 2026 · CARDIOLOGY

Heart Failure

Left-Sided · Right-Sided · Acute Decompensated · Priority Nursing Care

Cardiac

Fluid & Electrolytes

Pharmacology

NCJMM Framework

High Yield



SECTION 01

Definition & Overview

- ▶ **Heart Failure (HF)** is a clinical syndrome in which the heart cannot pump sufficient blood to meet the body's metabolic demands *or* can only do so at elevated filling pressures.
- ▶ **Two main types:** Left-sided HF (most common — forward failure causes low CO; backward failure causes pulmonary congestion) and **Right-sided HF** (backward failure causes systemic venous congestion).
- ▶ **Why it matters on NCLEX:** HF requires constant hemodynamic monitoring, tight fluid management, and rapid recognition of acute decompensation (ADHF) — a common clinical judgment scenario in NGN.



SECTION 02

Pathophysiology (Simplified)

Myocardial Injury / Chronic Overload

MI, HTN, valve disease, cardiomyopathy



↓ Cardiac Output

Less blood pumped → compensatory SNS activation + RAAS activation



Neurohormonal Compensation (short-term)

↑ HR, ↑ SVR, Na+/water retention → fluid overload over time



BACKWARD FAILURE — blood backs up into:

LEFT-sided HF

→ Pulmonary congestion
Dyspnea, crackles, orthopnea, PND

RIGHT-sided HF

→ Systemic venous congestion
Peripheral edema, JVD, hepatomegaly, ascites



SECTION 03

Signs & Symptoms

Feature	Left-Sided HF 🫁	Right-Sided HF 🦶
Primary Backup Site	Lungs (pulmonary)	Systemic venous system
Breath Sounds	Crackles/rales (bilateral bases)	Usually clear (unless bilateral)
Breathing Pattern	Dyspnea, orthopnea, PND, Cheyne-Stokes	May have mild dyspnea
Edema	Pulmonary edema (frothy pink sputum 🩸)	Pitting edema (ankles → ascites)
Neck Veins	Normal or slightly elevated	JVD (jugular vein distension) 🩸
GI Signs	Nausea (low CO)	Hepatomegaly, anorexia, RUQ pain
Urine Output	↓ Oliguria (poor renal perfusion)	↓ Oliguria
LOC/Neuro	Confusion, fatigue (↓ CO to brain)	Fatigue



ACUTE DECOMPENSATED HF (ADHF) — Immediate Action Required

Frothy pink (blood-tinged) sputum + severe dyspnea + $\text{SpO}_2 < 90\%$ = pulmonary edema. Position HIGH FOWLER'S immediately → call HCP → O_2 → diuretics STAT. This is your #1 priority action on NGN.



SECTION 04

Priority Nursing Interventions



POSITION

High Fowler's (90°) for acute dyspnea. Elevate legs for peripheral edema — but NOT if in acute pulmonary edema (increases venous return → worsens lungs).



DAILY WEIGHT (PRIORITY!)

Weigh every morning — same scale, same time, same clothing. Report gain of
>2 LB/DAY OR >5 LB/WEEK
to HCP. Best early indicator of fluid retention.



RESPIRATORY MONITORING

Assess lung sounds every shift. Monitor SpO₂ continuously. Administer O₂ to maintain SpO₂ ≥ 94%. Prepare for BiPAP/CPAP in severe cases.



DIET EDUCATION

Sodium restriction (<2 g/day). Avoid canned foods, processed meats, fast food. Fluid restriction as ordered. Small, frequent meals to reduce cardiac workload.



ACTIVITY & REST BALANCE

Space activities. Schedule rest periods. Cardiac rehab for stable patients. Energy conservation is key. Avoid Valsalva maneuver (straining, heavy lifting).



FLUID & I&O

Strict I&O. Fluid restriction typically 1.5–2 L/day. Monitor for negative fluid balance with diuresis. Replace K⁺ as ordered with loop diuretics.



MONITOR LABS & VS

BMP (K⁺, Na⁺, BUN/Cr), BNP level (elevated = HF severity), digoxin level if applicable. Watch for orthostatic hypotension with diuretics and ACE inhibitors.



DIGOXIN SAFETY PROTOCOL

Check apical pulse for **1 FULL MINUTE BEFORE** giving. Hold if HR < 60. Monitor for toxicity (N/V, yellow-green halos). Therapeutic level: 0.5–2 ng/mL.



SECTION 05

Pharmacology

NO NSAID!!!!!!!!!!!!!! BECAUSE IT CONTRIBUTE TO SODIUM RETENTION, THEREFORE WATER RETENTION

Furosemide (Lasix)

Loop Diuretic

Action: Blocks Na/K/Cl in loop of Henle → massive diuresis

Use: Reduce fluid overload, pulmonary edema

Monitor: K⁺ (hypokalemia 🚫), BP, urine output, BUN/Cr

⚠️ Ototoxic at high doses. Give K⁺ supplements.

Digoxin (Lanoxin)

Cardiac Glycoside

Action: ↑ contractility (+ inotrope); ↓ HR (– chronotrope)

Use: HF with reduced EF, atrial fibrillation

Monitor: Apical HR ×1 min; toxicity level >2 ng/mL

⚠️ Hold if HR <60. Yellow/green halos = toxicity!

Lisinopril / Enalapril

ACE Inhibitor

Action: Blocks RAAS → ↓ afterload + preload

Use: First-line HF — reduces mortality

Monitor: BP (hypotension), K⁺ (hyperkalemia), creatinine

⚠️ Dry cough is common. Angioedema = STOP drug!

Carvedilol / Metoprolol

Beta-Blocker

Action: ↓ HR, ↓ BP, blocks SNS → reduces cardiac workload

Use: Stable HF (NOT acute ADHF)

Monitor: HR (bradycardia), BP, blood glucose (masks hypoglycemia)

⚠️ NEVER abruptly stop. Contraindicated in acute HF.

Spironolactone

K⁺-Sparing Diuretic

Action: Aldosterone antagonist → diuresis without K⁺ loss

Use: HF — reduces mortality (reduces remodeling)

Monitor: K⁺ (hyperkalemia), gynecomastia in men

⚠️ Avoid with ACE inhibitor if K⁺ already high!

Dobutamine (Dobutrex)

Inotrope — Titrated

Action: β₁ agonist → ↑ contractility, ↑ CO

Use: Acute/severe HF — IV drip only (ICU)

Monitor: BP, HR, urine output (does NOT harm kidneys)

⚠️ Must be on IV pump. Titrate by BP + urine output.



SECTION 06

NCLEX Test Traps



TRAP: Elevating legs in ALL HF patients

Elevating legs is appropriate for right-sided HF (peripheral edema). In acute LEFT-sided HF/pulmonary edema, elevating legs ↑ venous return → worsens pulmonary congestion. Correct: HIGH FOWLER'S ONLY.



TRAP: Giving beta-blockers for acute decompensated HF

Beta-blockers (carvedilol, metoprolol) are used in STABLE, chronic HF only. They are CONTRAINDICATED during acute decompensation because they further reduce an already-low cardiac output.



TRAP: Ignoring the apical pulse before digoxin

You MUST auscultate the apical pulse for a full 60 seconds before giving digoxin. If HR < 60, HOLD the dose. Do NOT rely on a radial pulse — apical is mandatory.



TRAP: Missing hypokalemia with Lasix → Digoxin toxicity

Furosemide causes K⁺ loss. Low K⁺ potentiates digoxin toxicity even at "normal" digoxin levels. ALWAYS check K⁺ before giving digoxin to a patient on loop diuretics.



TRAP: Choosing urine output over daily weight for monitoring

NCLEX loves to ask how to best detect early fluid retention. The answer is DAILY WEIGHT — more sensitive and practical than hourly urine output in outpatient/stable settings.



TRAP: Left vs. Right — forgetting which goes where

Left = Lung problems (both start with L). Right = Rest of the body (Peripheral edema, JVD, liver). Right HF is often CAUSED by Left HF (the left backs up into the right).



SECTION 07

Clinical Judgment — NCJMM Framework

STEP 01

Recognize Cues

- Crackles (bilateral bases)
- Weight ↑ > 2 lb overnight
- SpO₂ dropping below 94%
- Orthopnea / PND

STEP 02

Analyze Cues

- Pulmonary vs systemic congestion?
- Is K⁺ low with diuretics?
- Digoxin level therapeutic?

STEP 03

Priority Actions

- High Fowler's position NOW
- O₂ to maintain SpO₂ ≥ 94%
- Notify HCP immediately
- Administer IV Lasix (STAT)

STEP 04

Expected Outcomes

- SpO₂ ≥ 94% within 30 min
- Crackles diminish after diuresis
- UO ≥ 30 mL/hr (adequate perfusion)

- JVD, peripheral edema
- Frothy pink sputum
- BNP > 100 pg/mL

- Fluid gain = worsening HF
- ↓ UO = ↓ perfusion/renal failure
- Frothy sputum = ADHF emergency

- Hold digoxin if HR <60
- Strict I&O, daily weights
- IV pump for dobutamine drip

- Daily weight stable or ↓
- BNP trending down
- Patient verbalizes understanding of Na/fluid restriction



SECTION 08

Memory Boosters

MNEMONIC

"LMNOP" for ADHF

Lasix (furosemide) IV

Morphine (reduces preload/anxiety)

Nitrates (vasodilate, reduce preload)

Oxygen (maintain SpO₂)

Position (High Fowler's 90°)

PATTERN RECOGNITION

Left = Lung / Right = Rest

Left HF → problems in the **L**ungs: crackles, dyspnea, frothy sputum.

Right HF → problems in the **R**est of body: ankle edema, JVD, hepatomegaly, ascites.

QUICK ASSOCIATION

Digoxin Safety = "A.P.E."

Apical pulse ×1 full minute

Potassium must be checked (↓K⁺ = toxicity risk)

Eyes: yellow-green halos = STOP & call HCP

NUMBER ANCHOR

The "2-5 Rule" for Fluid

Report weight gain of **>2 lbs in 1 day** or **>5 lbs in 1 week**.

Na restriction: **<2 g/day**.

Fluid restriction: **1.5–2 L/day**.