

NGN NCLEX 2026 · CRITICAL CARE · SHOCK STATES

Septic *Shock*

A life-threatening organ dysfunction triggered by a dysregulated host response to infection — the most lethal form of distributive shock. Mortality climbs to 40% without rapid recognition and Hour-1 bundle intervention.

Distributive Shock

Sepsis-3 Criteria

Hour-1 Bundle

qSOFA / SOFA

MAP $\geq$ 65 mmHg

NCJMM Framework

01 Definition & Overview

SEPSIS

SIRS+

Life-threatening **organ dysfunction** from a dysregulated host response to infection

SEPTIC SHOCK

MAP < 65

Persistent hypotension needing **vasopressors** + lactate > 2 mmol/L despite adequate fluids

MORTALITY

~40%

Highest mortality of all shock states. Each hour without antibiotics increases risk by **~7%**

Why It Matters

- Septic shock is a **time-sensitive emergency** — early recognition saves lives
- Common sources: **lungs (pneumonia), urinary tract, abdomen, bloodstream** (central lines), wounds
- High-risk clients: **elderly, immunocompromised, neonates, diabetics**, post-surgical, indwelling device patients
- Progresses through **SIRS → Sepsis → Septic Shock → MODS → Death** if untreated

qSOFA — Quick Bedside Screen

Score ≥ 2 of the following = high risk for sepsis mortality

- **Respiratory rate** $\geq 22/\text{min}$
- **Altered mental status** (GCS < 15)
- **Systolic BP** ≤ 100 mmHg

Remember: "**Fast-Low-Slow**" — fast RR, low BP, slow thinking.

02 Pathophysiology — Step by Step

1

Infection Invades the Host

Pathogens (**gram-negative** most common, also gram-positive, fungal, viral) release endotoxins/exotoxins into the bloodstream.

2

Massive Inflammatory Response ("Cytokine Storm")

Immune system releases TNF- α , IL-1, IL-6, histamine, nitric oxide → **widespread inflammation**.

3

Massive Vasodilation + Capillary Leak

↓ Systemic vascular resistance (SVR), fluid shifts from vessels into tissues → **relative hypovolemia** and third-spacing.

4

Maldistribution of Blood Flow

Even though cardiac output may initially be **high** (warm/hyperdynamic phase), blood is shunted incorrectly — tissues are underperfused.

5

Cellular Hypoxia & Lactic Acidosis

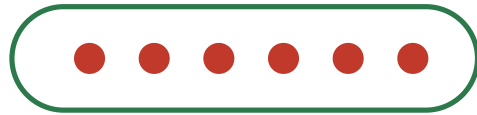
Cells switch to **anaerobic metabolism** → lactate > 2 mmol/L. Coagulation cascade activates → risk of DIC.

6

Multi-Organ Dysfunction Syndrome (MODS)

Kidneys (AKI), lungs (ARDS), brain (encephalopathy), liver, heart fail progressively. **Cold/hypodynamic phase** → death.

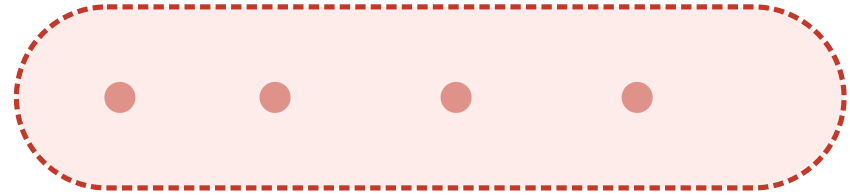
NORMAL VESSEL



Normal SVR · Normal BP · Normal Flow



SEPTIC SHOCK



↓ SVR · Vasodilation · Capillary Leak
↓ MAP · ↑ Lactate · Tissue Hypoxia

Distributive shock: widespread vasodilation + capillary leak → relative hypovolemia and tissue hypoperfusion.

03 Signs & Symptoms — Warm vs Cold Phase

🔥 Warm / Hyperdynamic

EARLY · COMPENSATED

Skin: Warm, flushed, dry, pink

HR: Tachycardia (> 100) · bounding pulses

BP: Normal or slightly ↓ · widened pulse pressure

RR: Tachypnea (> 22)

❄️ Cold / Hypodynamic

LATE · DECOMPENSATED

Skin: Cold, clammy, mottled, cyanotic

HR: Tachycardia · weak, thready pulses

BP: Severe hypotension · MAP < 65

RR: Labored, crackles (ARDS)

Temp: Fever $> 38^{\circ}\text{C}$ *or* hypothermia $< 36^{\circ}\text{C}$

Mental: Restless, anxious, confused

UOP: Decreasing

Cardiac output: HIGH (hyperdynamic)

SVR: LOW

Temp: Often hypothermic

Mental: Lethargic $\rightarrow$ obtunded $\rightarrow$ comatose

UOP: Oliguria / anuria $\cdot$ AKI

Cardiac output: LOW

SVR: Variable $\cdot$ organs failing $\rightarrow$ MODS

● RED FLAGS — Recognize Immediately

These findings demand instant escalation and the Hour-1 Bundle:

MAP < 65

MMHG

Lactate > 2

MMOL/L (>4 CRITICAL)

SBP < 90

OR DROP > 40 FROM BASELINE

UOP < 0.5

ML/KG/HR

AMS

ALTERED MENTAL STATUS

qSOFA ≥ 2

SEPSIS SCREEN POSITIVE

04 Priority Nursing Interventions



Hour-1 Sepsis Bundle

COMPLETE ALL WITHIN 60 MINUTES OF RECOGNITION

1

Measure Lactate

Remeasure in 2–4 hrs if > 2 mmol/L

2

Blood Cultures

BEFORE antibiotics — x 2 sites

3

Broad-Spectrum Abx

Within 1 hr · IV · do not delay

4

Fluid Bolus

30 mL/kg crystalloid (NS or LR)
for $\downarrow$ BP or lactate ≥ 4

5

Vasopressors

If MAP < 65 after fluids · target
MAP ≥ 65

ABCs + Ongoing Care

AIRWAY / BREATHING

- **Administer** supplemental O₂ to keep SpO₂ $\geq 94\%$
- **Prepare** for intubation / mechanical ventilation (ARDS risk)
- **Monitor** ABGs, work of breathing, lung sounds

CIRCULATION

- **Establish** 2 large-bore IVs (18G or larger) — central line for vasopressors
- **Insert** arterial line for continuous BP
- **Insert** Foley for hourly UOP (goal > 0.5 mL/kg/hr)

Monitoring & Safety

CONTINUOUS ASSESSMENT

- **Monitor** VS q15 min during resuscitation
- **Trend** lactate, WBC, procalcitonin, CBC, BMP
- **Assess** mental status, cap refill, skin temp every shift
- **Track** strict I&O hourly

PREVENT COMPLICATIONS

- **Glucose control** target 140–180 mg/dL (insulin drip if needed)
- **VTE prophylaxis** — SCDs + heparin/enoxaparin
- **Stress ulcer** prophylaxis (PPI or H₂ blocker)
- **HOB elevated** 30–45° to prevent VAP

05 Pharmacology

DRUG / CLASS	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Norepinephrine (Levophed) — 1st line vasopressor	Potent α -agonist $\rightarrow$ vasoconstriction $\uparrow$ SVR $\uparrow$ MAP	Extravasation necrosis, dysrhythmias, peripheral ischemia, HTN	Central line preferred. Titrate to MAP ≥ 65 . Never stop abruptly. Antidote for extravasation: phentolamine .
Vasopressin (adjunct)	V1 receptor vasoconstriction — non-adrenergic	Bradycardia, ischemia (cardiac, mesenteric, digital), hyponatremia	Added to norepi when MAP still < 65 . Fixed low dose — do not titrate .
Epinephrine (refractory)	$\alpha + \beta$ agonist $\rightarrow \uparrow$ SVR, $\uparrow$ HR, $\uparrow$ contractility	Tachycardia, lactic acidosis, hyperglycemia, dysrhythmias	Used when norepi + vaso not enough. Monitor cardiac rhythm closely.
Dobutamine (inotrope)	β_1 -agonist $\rightarrow \uparrow$ contractility (for cardiac dysfunction)	Tachycardia, dysrhythmias, hypotension	Monitor BP & UOP. Add if poor cardiac output despite fluids/vasopressors.
Broad-Spectrum Antibiotics (piperacillin-tazobactam, vancomycin, meropenem, ceftriaxone)	Kill suspected pathogens empirically until cultures return	Nephrotoxicity, ototoxicity (vanc), C. diff, allergic reactions	Draw cultures FIRST , then give within 1 hr. Monitor renal function & drug levels (e.g., vanc trough).
Hydrocortisone (refractory shock)	Stabilizes vascular tone when catecholamines fail	Hyperglycemia, immunosuppression, GI bleeding	Given when vasopressors alone can't achieve MAP ≥ 65 . Monitor glucose, infection signs.
Crystalloids (NS 0.9%, Lactated Ringer's)	Expand intravascular volume	Fluid overload $\rightarrow$ pulmonary edema, hemodilution	30 mL/kg in first 3 hours. Reassess after each bolus — lungs, JVD, SpO ₂ .
Regular Insulin (drip)	Lowers blood glucose	Hypoglycemia, hypokalemia	Target glucose 140–180 mg/dL . Accu-check q1h.

06 NCLEX Test Traps ⚠️



Cultures BEFORE Antibiotics



Early Sepsis = WARM Skin

Always draw blood cultures **first**. BUT — do *not* delay antibiotics more than 45 min to get them. Life comes before the perfect culture.

Students expect cold/clammy in every shock. Early septic shock is **warm, flushed, and hyperdynamic**. Cold skin = late/decompensated = ominous.

⚠️ Norepinephrine Is First-Line

Not dopamine. Guidelines updated — **norepinephrine (Levophed)** is the drug of choice. Watch for extravasation and never stop abruptly.

⚠️ Fever May Be ABSENT

Elderly, immunocompromised, and neonates may present with **hypothermia** or normothermia. Low temp in sepsis is actually worse — it signals a failing response.

⚠️ Don't Wait for Hypotension

Septic shock is diagnosed **after** BP crashes. Recognize early cues (tachycardia, AMS, ↑ RR, rising lactate) and treat *before* they decompensate.

⚠️ MAP — Not SBP — Is the Goal

Target **MAP ≥ 65 mmHg** for tissue perfusion. A "normal" SBP of 110 means little if MAP is 58 — check the calculated MAP on the monitor.

⚠️ Fluids FIRST, Then Pressors

Give 30 mL/kg crystalloid bolus before starting vasopressors (unless already overloaded). Pressors on a dry tank = organ damage.

⚠️ Lactate > 4 = Tissue Starving

Lactate is the earliest lab marker of hypoperfusion — it climbs **before** BP drops. Always act on lactate ≥ 4, even if BP looks okay.

★ NCJMM — Clinical Judgment Framework

STEP 1

Recognize Cues

- ▶ Temp > 38° or < 36°C
- ▶ HR > 100 bpm
- ▶ RR > 22 / min

STEP 2

Analyze Cues

- ▶ Distributive shock — not hypovolemic or cardiogenic
- ▶ qSOFA ≥ 2 → high risk
- ▶ Lactate > 2 → tissue hypoxia

STEP 3

Prioritize / Take Action

- ▶ ABCs — secure airway, O₂
- ▶ Hour-1 Bundle: lactate, cultures, antibiotics, 30 mL/kg fluids, vasopressors

STEP 4

Evaluate Outcomes

- ▶ MAP ≥ 65 mmHg
- ▶ Lactate trending downward
- ▶ UOP > 0.5 mL/kg/hr

- ▶ SBP < 90 or MAP < 65
- ▶ Altered mental status
- ▶ Warm, flushed skin early
- ▶ Decreased urine output
- ▶ Known or suspected infection
- ▶ Locate infection source (UTI, pneumonia, line, wound)
- ▶ Identify risk factors (age, IC status, devices)
- ▶ Differentiate warm vs cold phase
- ▶ Large-bore IV × 2 + central line
- ▶ Foley for hourly UOP
- ▶ Notify rapid response / HCP
- ▶ Transfer to ICU
- ▶ Mental status improving
- ▶ Skin warming, cap refill < 3 sec
- ▶ SpO2 ≥ 94%
- ▶ Temp normalizing
- ▶ No signs of MODS progression

07 Patient & Family Education

Prevention at Home

- Frequent, thorough **hand hygiene** — #1 prevention
- Stay current on **vaccines** (flu, pneumococcal, COVID)
- Treat infections promptly — don't "wait it out"
- Manage chronic conditions (diabetes, COPD)
- Proper **wound care** — clean, cover, monitor
- Avoid shared personal items (razors, towels)

When to Call 911 / HCP

- Fever > 101°F (38.3°C) that won't come down
- Shaking chills, confusion, extreme fatigue
- Rapid heart rate or breathing
- Decreased urine (less than usual in 12 hrs)
- Clammy or mottled skin, pale lips/fingertips
- Any infection with sudden "feeling terrible"

Recovery & Follow-Up

- Complete full **antibiotic course** — even if feeling better
- Post-sepsis syndrome: fatigue, memory issues, mood changes — normal for weeks-months
- Attend all follow-up appointments
- Gradual return to activity with rest
- Eat balanced meals, stay hydrated
- Report new infections immediately

Devices & Catheters

- Keep **central lines & Foleys** clean and dry
- Report redness, warmth, drainage, or fever
- Do not submerge insertion sites
- Hand hygiene before touching dressings
- Remove indwelling devices as soon as safely possible
- Ask staff "is this line still needed?"

08 Memory Boosters & Mnemonics

T · I · M · E

RECOGNIZING SEPSIS

- T** — Temperature (fever OR hypothermia)
- I** — Infection (source known or suspected)
- M** — Mental decline (confusion, sleepiness)
- E** — Extremely ill — "feels worse than ever"

W · A · R · M

EARLY SEPTIC SHOCK SIGNS

- W** — Warm, flushed skin
- A** — Altered mental status
- R** — Rapid HR & RR
- M** — MAP dropping & urine output low

B · E · A · T · S

HOURLY BUNDLE PRIORITIES

- B** — Blood cultures (before antibiotics)
- E** — Empiric broad-spectrum antibiotics
- A** — Adequate fluids (30 mL/kg)
- T** — Test lactate (& recheck)
- S** — Start vasopressors for MAP < 65

65 · 30 · 2

THE NUMBERS YOU MUST KNOW

- 65** — MAP goal ≥ 65 mmHg
 - 30** — Fluid bolus 30 mL/kg
 - 2** — Lactate > 2 mmol/L = trouble
- + qSOFA ≥ 2 • antibiotics within 1 hr*

🎯 Pattern Recognition Tips

SHOCK COMPARISON

- **Hypovolemic** → cold, ↓ CO, ↓ preload
- **Cardiogenic** → cold, ↓ CO, ↑ preload
- **Septic (early)** → warm, ↑ CO, ↓ SVR
- **Anaphylactic** → warm + hives, ↓ SVR

IF BP STILL LOW...

- Fluids didn't work? → Start **Norepi**
- Norepi maxed? → Add **Vasopressin**
- Still refractory? → Add **Epinephrine**
- Still refractory? → **Hydrocortisone**

DON'T CONFUSE

- **SIRS** ≠ sepsis (SIRS = response only)
- **Sepsis** = SIRS + infection + organ dysfxn
- **Septic shock** = sepsis + vasopressors + lactate > 2
- **MODS** = multi-organ failure (end-stage)

Septic Shock · NGN NCLEX 2026 Visual Study Guide · Critical Care Series

Review with blood transfusion, AFib, ACS, and lethal rhythms study cards · Clinical judgment is everything — trust the cues, act on the bundle.