

NGN NCLEX 2026 · CLINICAL JUDGMENT MEASUREMENT MODEL

Burns — *Thermal & Beyond*



Integumentary emergency care spanning airway management, fluid resuscitation, wound integrity, and long-term rehabilitation. Airway always wins.

INTEGUMENTARY

CRITICAL CARE

FLUID & ELECTROLYTES

SAFETY & INFECTION CONTROL

PHARMACOLOGY

01 Definition & Overview

WHAT · WHY · HOW BAD

*A **burn** is tissue injury from thermal, chemical, electrical, or radiation exposure that disrupts the skin's protective barrier — triggering fluid loss, infection risk, and systemic cardiovascular collapse.*

SEVERITY DETERMINED BY

Depth, %TBSA, location, age, inhalation injury, comorbidities

LEADING CAUSE OF DEATH

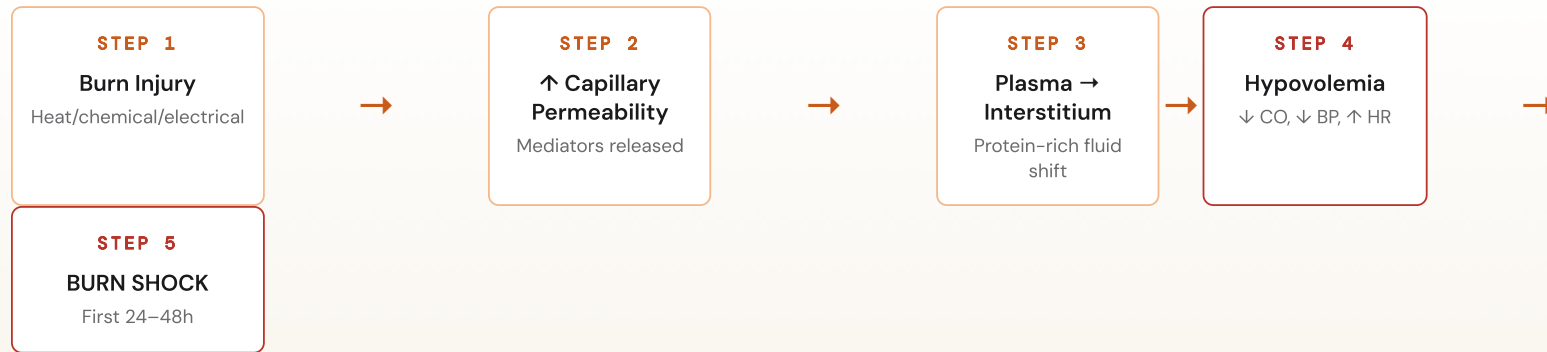
Early: airway/shock · Late: infection/sepsis

HIGH-RISK LOCATIONS

Face, hands, feet, perineum, circumferential, joints

02 Pathophysiology — Fluid Shift Cascade

MECHANISM FLOW



Phase I

Emergent / Resuscitative

0–72 HOURS

Fluid shifts out of vessels. Highest risk for hypovolemic shock, inhalation injury, and electrolyte chaos. **Parkland fluid resuscitation begins.**

Phase II

Acute

72H → WOUND CLOSURE

Fluid remobilization back to vessels → risk of **fluid overload**. Infection is the #1 concern. Nutrition, wound care, grafting.

Phase III

Rehabilitative

CLOSURE → MAX RECOVERY

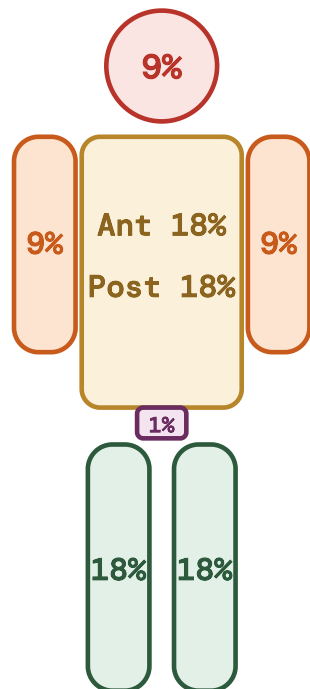
Scar remodeling (can last 1–2 years). Priority: **prevent contractures**, pressure garments, psychosocial support.

03 Depth Classification & %TBSA

SEVERITY GRADING

DEPTH	TISSUE INVOLVED	APPEARANCE	PAIN	TYPICAL CAUSE
Superficial (1°)	Epidermis only	Red, dry, no blisters , blanches	Painful	Sunburn, brief flash
Superficial Partial (2°)	Epidermis + upper dermis	Red, blistered, moist, weeping	VERY Painful	Scalds, brief flame
Deep Partial (2°)	Epidermis + deep dermis	Pale pink/waxy white, fewer blisters , less moist	Reduced	Hot liquids, flame

DEPTH	TISSUE INVOLVED	APPEARANCE	PAIN	TYPICAL CAUSE
Full-Thickness (3°)	All dermis + SQ tissue	White / tan / black, leathery, dry, eschar	PAINLESS	Flame, prolonged contact, electrical
Deep Full (4°)	Muscle, fascia, bone	Charred, blackened , exposed tissue	PAINLESS	High-voltage electrical, prolonged flame



Rule of Nines (Adult %TBSA)

Used to estimate extent for fluid calculations

Head & Neck **9%**

Each Arm (front 4.5 + back 4.5) **9% × 2**

Anterior Trunk (chest + abdomen) **18%**

Posterior Trunk (back) **18%**

Each Leg (front 9 + back 9) **18% × 2**

Perineum / Genitalia **1%**

⚠ Pediatric alert: Children have proportionally larger heads and smaller legs — use the **Lund-Browder chart**, not Rule of Nines. The *palm* of the client's hand ≈ **1%** for scattered burns.

04 Signs & Symptoms

EARLY VS. LATE COMPLICATIONS



EARLY (First 24–48 Hours)

INHALATION INJURY (#1 KILLER)

- Singed nasal/facial hair
- Soot in mouth, nose, or sputum (**carbonaceous sputum**)
- **Hoarseness, stridor, brassy cough**
- Facial / neck burns, enclosed-space exposure

CO POISONING

- **Cherry-red skin**, headache, confusion
- Pulse-ox *falsely normal* — draw carboxyhemoglobin

HYPOVOLEMIC (BURN) SHOCK

- Tachycardia, **hypotension**, pale/cool skin
- ↓ urine output (**< 30 mL/hr**)
- Thirst, restlessness, ↑ hematocrit (hemoconcentration)

CIRCUMFERENTIAL BURNS

- **Loss of distal pulses**, coolness, cyanosis
- Compartment syndrome → escharotomy needed



LATE (After 48–72 Hours)

INFECTION / SEPSIS (#1 LATE KILLER)

- Fever, tachycardia, hypotension
- Wound: **green/odorous drainage**, increased pain
- Altered mental status, leukocytosis or leukopenia

FLUID REMOBILIZATION OVERLOAD

- Crackles, JVD, bounding pulses, ↑ BP
- Hemodilution → watch **hyponatremia & hypokalemia**

GI COMPLICATIONS

- **Curling's ulcer** (stress ulcer) — coffee-ground emesis, melena
- Paralytic ileus — absent bowel sounds, distension

LONG-TERM

- **Contractures**, hypertrophic scarring, keloids
- Altered body image, PTSD, depression

NCLEX PRIORITY RED FLAG



Facial burns + singed nasal hair + hoarseness = *prepare for immediate intubation*. Airway edema progresses rapidly and will close the airway within hours.

DO NOT WAIT FOR RESPIRATORY DISTRESS.

05 Priority Nursing Interventions

ABCDE FRAMEWORK

A

AIRWAY

B

BREATHING

C

CIRCULATION

D

DISABILITY

E

EXPOSURE

Burns — NGN NCLEX 2026 Infographic

- › Assess for inhalation injury
- › Prep **early intubation** if facial/neck burns
- › 100% humidified O₂
- › Suction as needed

- › Monitor SpO₂ + ABGs
- › Draw **carboxyhemoglobin** (CO)
- › Elevate HOB 30°
- › Watch for chest eschar restriction

- › 2 large-bore IVs (16–18g)
- › Avoid burned extremities if possible
- › **LR** via Parkland formula
- › Foley → urine output ≥ **30 mL/hr**

- › Neuro checks (LOC, pupils)
- › Pain: **IV morphine only**
- › Tetanus prophylaxis
- › NG tube (ileus prevention)

- › Remove clothing, jewelry (not stuck)
- › Cover with **clean dry sheet**
- › Prevent hypothermia — warm room, blankets
- › **NO ice, NO wet towels**

THE PARKLAND FORMULA

Fluid Resuscitation — First 24 Hours

Lactated Ringer's (LR) is the fluid of choice · Calculation begins from the *time of the burn*, not arrival

$$4 \text{ mL} \times \text{kg (body weight)} \times \% \text{TBSA}$$

= Total LR volume over the first 24 hours

FIRST 8 HOURS

½ Total Volume

Timed from burn, not arrival — a 2-hour transport means 2 hours already used.

NEXT 16 HOURS

½ Total Volume

Titrate to urine output 30–50 mL/hr (adults) · 1 mL/kg/hr (peds < 30 kg).

⚠ **NCLEX Trap:** If urine output drops below 30 mL/hr → *increase* fluids, do NOT give diuretics. The patient is under-resuscitated, not overloaded.

06 Pharmacology

HIGH-YIELD BURN DRUGS

Silver Sulfadiazine

Silvadene

Mafenide Acetate

Sulfamylon

TOPICAL ANTIMICROBIAL

ACTION	Broad-spectrum bactericidal against gram-positive, gram-negative, and yeast organisms
SIDE FX	Leukopenia (↓ WBC), sulfa allergy reaction, transient neutropenia
NURSING	Apply 1/16" thick with sterile glove · NOT on face · contraindicated in sulfa allergy · monitor CBC

TOPICAL ANTIMICROBIAL

ACTION	Penetrates eschar — best choice for deep wounds and cartilage (ears, nose)
SIDE FX	Painful burning on application, metabolic acidosis (carbonic anhydrase inhibition)
NURSING	Premedicate for pain · monitor ABGs for acidosis · assess respiratory rate

Morphine Sulfate

IV route only

OPIOID ANALGESIC

ACTION	Severe pain control for burns and dressing changes
WARNING	NEVER IM or SQ — tissue perfusion is too poor for absorption; erratic dosing
NURSING	IV push or PCA · monitor RR > 12 · naloxone at bedside · medicate before dressing changes

Tetanus Toxoid / Ig

Prophylaxis

IMMUNIZATION

ACTION	Prevents Clostridium tetani infection from contaminated burns
INDICATION	All burn patients; Ig if unknown / > 5 yrs since booster
NURSING	Administer IM in unburned area · document lot # and site

H₂ Blockers / PPIs

Ranitidine, Pantoprazole

GI PROPHYLAXIS

ACTION	Suppress gastric acid to prevent Curling's ulcer
INDICATION	Standard of care for all major burns — stress response causes GI ischemia
NURSING	Monitor stool for occult blood · check H&H for GI bleed

Bacitracin

Topical ointment

TOPICAL ANTIBIOTIC

ACTION	Gentle topical antimicrobial — safe for face and ears
INDICATION	Superficial facial burns, sensitive areas where Silvadene is contraindicated
NURSING	Apply in a thin layer with sterile technique

07 NCLEX Test Traps

COMMON WRONG-ANSWER PATTERNS



Watch for these exam tricks

Students confuse these patterns every year — lock them in

01

✗ Apply ice to cool the burn

✓ Cover with clean dry sheet; cool water brief only

Ice causes vasoconstriction → *deepens* tissue damage and triggers hypothermia.

02

✗ Full-thickness burn = high pain

✓ Full-thickness burns are PAINLESS

Nerve endings are destroyed. Absence of pain ≠ less severe — it means *worse*.

03

✗ Low urine output → give diuretic

✓ ↑ fluid rate — patient is under-resuscitated

Oliguria in the first 24h means more Parkland, not Lasix.

04

✗ IM morphine for pain

✓ IV route ONLY in acute burns

Poor tissue perfusion = erratic IM absorption; fluid shift can dump stored dose.

05

✗ Start Parkland clock at arrival

✓ Start from time of burn injury

A 2-hour transport = 2 hours of the 8-hour window already used.

06

✗ Pop blisters to clean the wound

✓ Leave blisters intact

Blisters are a sterile biological dressing — disrupting them invites infection.

07

✗ Chemical burn → apply neutralizing agent

✓ Flush with copious water first (15–20 min)

Neutralizers create exothermic reactions → more heat damage.

08

✗ Electrical burn looks small → low priority

✓ Monitor cardiac rhythm continuously

External injury underestimates internal damage; arrhythmias / cardiac arrest are common.

09

✗ Use Rule of Nines for a 3-year-old

✓ Use Lund-Browder chart for children

Children's heads are proportionally larger — Rule of Nines underestimates pediatric TBSA.

10

✗ Airway OK now → skip intubation prep

✓ Prep for early intubation with any facial/airway cue

Edema closes the airway rapidly. Don't wait for stridor — by then it may be too late.

08 Patient Education

DISCHARGE & LONG-TERM SELF-CARE

Nutrition & Wound Healing

- ✓ **High-protein, high-calorie diet** — 2–3× normal needs for healing
- ✓ Eat **6 small meals/day** rather than 3 large
- ✓ Vitamin C, zinc, and iron support collagen and wound repair
- ✓ Keep wound clean and dry; hand hygiene before dressing changes
- ✓ Report fever, ↑ pain, foul drainage, or red streaks — **signs of infection**

Mobility & Scar Management

- ✓ Daily **ROM exercises** to prevent contractures — even when painful
- ✓ **Pressure garments 23 hrs/day** for 6–18 months for hypertrophic scars
- ✓ Keep splints on as ordered; use positioning to keep joints extended
- ✓ Moisturize healed skin frequently; avoid scratching
- ✓ Use **SPF 30+ for 6–12 months** — new skin burns easily

Psychosocial Support

- ✓ **Body image changes** are expected — discuss openly
- ✓ Referral to burn survivor support groups
- ✓ Screen for **depression and PTSD**; encourage professional counseling
- ✓ Involve family in care and recovery planning

Home Safety

- ✓ Install and test **smoke detectors** monthly
- ✓ Set water heater $\leq 120^{\circ}\text{F}$ (49°C) to prevent scalds
- ✓ Keep fire extinguisher in kitchen; know stop-drop-roll
- ✓ Turn pot handles inward; never leave cooking unattended
- ✓ Plan and practice a fire escape route

09 Memory Boosters

MNEMONICS & QUICK ASSOCIATIONS

BURNS Priority Checklist

BURNS

B **Breathing** — airway first, always

Parkland "4 · 8 · 16"

4 · 8 · 16

4 **4 mL** × kg × %TBSA = total LR

- U** **Urine output** $\geq$ 30–50 mL/hr (adult)
- R** **Resuscitate** with Parkland / LR
- N** **NG tube** — paralytic ileus prevention
- S** **Sterile technique** + Stress ulcer prophylaxis

- 8** $\frac{1}{2}$ in first 8 hours (from burn time)
- 16** $\frac{1}{2}$ over next 16 hours

👁️ Depth at a Glance

- RED & crying** → superficial partial (2°)
- WAXY & whitish** → deep partial (2°)
- WHITE, LEATHERY, PAINLESS** → full-thickness (3°) — *white is worst*
- CHARRED & black** → deep full (4°) — muscle/bone involved

⚡ Quick Associations

- Silver NOT on face** — Silvadene avoid on face/sulfa allergy
- Sulfamylon STINGS** — painful but penetrates eschar
- Curling's from Burning** — stress ulcer association
- Ice is NICE? NO!** — never ice a burn
- Cherry-red = CO** — draw carboxyhemoglobin
- Circumferential** → **Escharotomy** (not fasciotomy)

10 NCJMM Clinical Judgment Framework

APPLY TO A BURN SCENARIO

Scenario: 34-year-old male, house fire, 35% TBSA, facial burns, singed nasal hair, hoarse voice

SIX-STEP CLINICAL JUDGMENT WALK-THROUGH

Step 1
Recognize Cues

Step 2
Analyze Cues

Step 3
Prioritize Hypotheses

Burns — NGN NCLEX 2026 Infographic

Facial burns, singed nasal hair, hoarseness, soot in mouth, 35% TBSA, tachycardia 120, BP 92/58, SpO₂ 91%.

Inhalation injury signs present → **airway at risk**. Hypotension + tachycardia = hypovolemic burn shock. 35% TBSA qualifies as major burn.

① Impending airway obstruction (highest) · ② Hypovolemic shock · ③ Pain · ④ Infection risk · ⑤ Body image / psychosocial.

Step 4

Generate Solutions

Prep intubation equipment. Calculate Parkland: $4 \times 80 \text{ kg} \times 35 = 11,200 \text{ mL LR/24h}$, first 5,600 mL in 8h. Place Foley, NG, 2 large-bore IVs.

Step 5

Take Action

100% humidified O₂, notify anesthesia for intubation, start LR bolus, insert Foley, draw ABG + carboxyhemoglobin + CBC, IV morphine, tetanus, H₂ blocker.

Step 6

Evaluate Outcomes

Target: SpO₂ ≥ 95%, urine ≥ 30 mL/hr, MAP ≥ 65, HR trending down, clear lungs, pain ≤ 4/10. Reassess hourly × 24h.