DIANE'S NGN NCLEX 2026 VISUAL STUDY LIBRARY

Trauma Assessment

Emergency & Critical Care • Primary & Secondary Survey • Multi-System Priority

📚 *Sourced from standard NGN NCLEX 2026 references (Saunders, ATI, Lippincott, ENA TNCC guidelines) — not present in personal flashcard set*

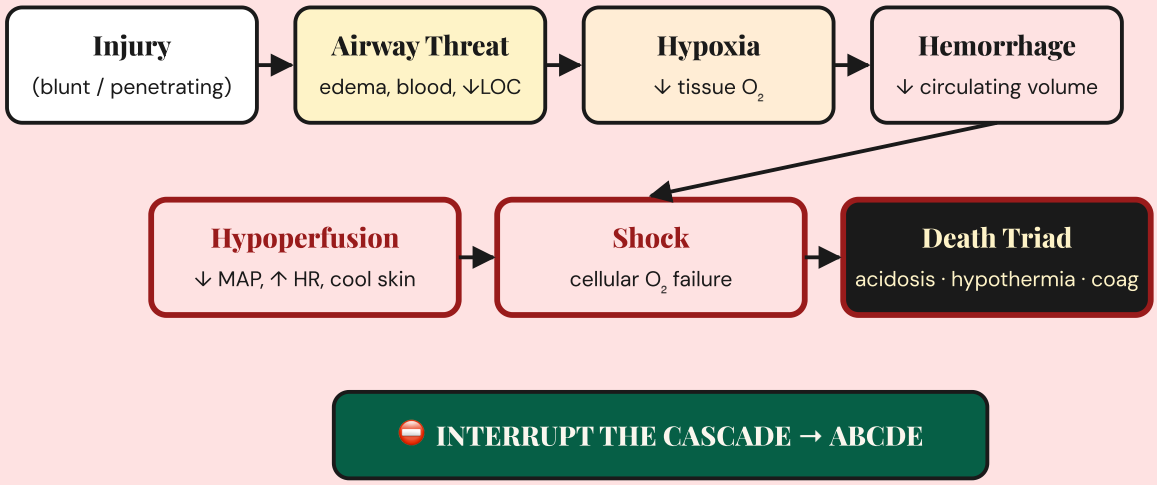
1 Definition & Overview

WHAT IT IS & WHY IT MATTERS

- **Trauma assessment** is a rapid, systematic evaluation of an injured client to identify and treat **life-threatening injuries first**, then perform a complete head-to-toe survey.
- Built around two phases: **Primary Survey (ABCDE)** — find and fix lethal problems, and **Secondary Survey** — head-to-toe + AMPLE history.
- The **"Golden Hour"** = the first 60 minutes after injury when prompt resuscitation dramatically improves survival.
- Trauma is the **#1 cause of death in clients ages 1–44**; preventable death is most often from airway loss, hemorrhage, or missed tension pneumothorax.

2 Pathophysiology: The Trauma Cascade

WHY ABCS COME FIRST



- **Airway loss → hypoxia within 4 minutes** → irreversible brain injury → death. Airway is always first.
- Uncontrolled bleeding → preload drops → cardiac output falls → cells switch to anaerobic metabolism → **lactic acidosis**.
- **Lethal triad**: acidosis + hypothermia + coagulopathy. Each worsens the other; mortality climbs sharply once all three are present.

3 Primary Survey — ABCDE

FIRST 60 SECONDS: FIND & FIX WHAT KILLS

STEP	FOCUS	ASSESS FOR	PRIORITY ACTION
A	**Airway** + C-spine	Speaking? Stridor, gurgling, blood, foreign body, facial fx, ↓LOC	Jaw-thrust (NOT head-tilt — protect C-spine), suction, OPA/NPA, prepare for intubation/cricothyroidotomy. **Apply rigid C-collar.**
B	**Breathing**	Rate, depth, symmetry, breath sounds, tracheal deviation, JVD, paradoxical chest movement, open wounds	High-flow O_2 15 L/min via non-rebreather. Needle decompression for tension pneumothorax (2nd ICS, midclavicular). Occlusive 3-sided dressing for open chest wound.
C	**Circulation** + hemorrhage	Pulse (rate, quality), skin (cool/pale/clammy), capillary refill > 2 sec, external bleeding, BP *last*	Direct pressure → pressure dressing → tourniquet for arterial limb bleed. Establish **2 large-bore (14–16g) IVs**. Warmed isotonic fluids; activate massive transfusion protocol (1:1:1 PRBC:plasma:platelets).
D	**Disability** (neuro)	GCS, pupils (PERRLA), motor/sensory, blood glucose	Maintain MAP ≥ 65 (≥ 80 if head injury). Elevate HOB 30° if no spinal injury suspected. Treat glucose < 70.
E	**Exposure** / Environment	Completely undress; inspect back/perineum (log-roll); look for hidden wounds, impaled objects, exit wounds	**Prevent hypothermia** — warm blankets, warmed IVF, ↑ room temp. *"Strip and flip, then keep warm."*

🚨 **RULE OF THE PRIMARY SURVEY:** Never move past a letter until that threat is corrected. A patient with no airway does not need an IV first — they need an airway.

4

Secondary Survey

HEAD-TO-TOE + AMPLE HISTORY (ONLY AFTER ABCDE STABILIZED)

AMPLE History

- **A**llergies
- **M**edications (anticoagulants ↑ bleed risk!)
- **P**ast medical history / Pregnancy
- **L**ast meal (aspiration risk in OR)
- **E**vents leading to injury (MOI)

DCAP-BTLS (head-to-toe inspect)

- **D**eformities
- **C**ontusions
- **A**brasions
- **P**unctures / Penetrations
- **B**urns · **T**enderness · **L**acerations · **S**welling

Key add-ons: full set of vitals + 5-lead ECG, Foley (only if no blood at meatus/scrotal hematoma), NG/OG tube (OG if midface fx — basilar skull risk), labs (CBC, type & cross, lactate, ABG, coags, β-hCG, toxicology), **FAST exam** (Focused Assessment with Sonography for Trauma), CT/imaging.

5 Signs & Symptoms — Shock Recognition

EARLY (COMPENSATED) VS LATE (DECOMPENSATED)

SYSTEM	EARLY / COMPENSATED 🟢	LATE / DECOMPENSATED 🔴
HR	Tachycardia (>100)	Bradycardia → arrest
BP	**Normal** (narrow pulse pressure)	Hypotension (SBP < 90)
RR	Tachypnea (anxiety, ↑ drive)	Slow, irregular, agonal
Skin	Pale, cool, clammy, ↓ cap refill	Cyanotic, mottled
Mental status	Anxious, restless, confused	Lethargic → unresponsive
Urine output	↓ (< 30 mL/hr adult)	Anuric (< 10 mL/hr)
Lactate	2–4 mmol/L (rising)	> 4 mmol/L

🚨 **RED FLAGS — Call rapid response NOW:**

- Tracheal deviation + absent unilateral breath sounds + JVD → **tension pneumothorax**
- Muffled heart sounds + JVD + hypotension → **Beck's triad** → **cardiac tamponade**
- Battle's sign (mastoid bruise), raccoon eyes, CSF from ears/nose → **basilar skull fx**
- Cushing's triad: ↑BP + bradycardia + irregular respirations → **↑ICP / impending herniation**
- Blood at urethral meatus, scrotal hematoma, "high-riding" prostate → **do NOT insert Foley** (urethral injury)
- Restlessness/agitation in trauma client → presume **hypoxia or hemorrhage** until proven otherwise

6 Priority Nursing Interventions

ACTION VERBS · ABC FRAMEWORK · NCLEX PRIORITIZATION

- **Open** the airway with jaw-thrust maneuver; **maintain** manual in-line C-spine stabilization until cleared by imaging.
- **Apply** high-flow O_2 via non-rebreather (15 L/min) to every major trauma patient regardless of initial SpO_2.
- **Control** external bleeding: direct pressure → pressure dressing → tourniquet → wound packing with hemostatic gauze.
- **Establish** 2 large-bore (14–16 gauge) IV lines in the antecubital fossae; **infuse** warmed isotonic crystalloid (NS or LR).
- **Initiate** massive transfusion protocol (1:1:1 ratio of PRBCs : FFP : platelets) when ≥ 10 units anticipated in 24 hrs.
- **Monitor** continuous ECG, SpO_2, $EtCO_2$, BP every 5 min; **recheck** mental status frequently — earliest sign of decline.
- **Insert** Foley (only if no contraindications) — UO is the best perfusion indicator (target ≥ 0.5 mL/kg/hr adult).
- **Prevent** hypothermia: warm IV fluids, warming blankets, raise room temperature, remove wet clothing.
- **Reassess** ABCDE after every intervention and whenever status changes — trauma resuscitation is iterative, not linear.
- **Provide** tetanus prophylaxis if status unknown or last dose > 5 years; administer broad-spectrum antibiotics for open wounds.

7 Pharmacology — Trauma Resuscitation Drugs

CLASS · MECHANISM · SIDE EFFECTS · NURSING PEARLS

DRUG / CLASS	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Tranexamic acid (TXA) — antifibrinolytic	Blocks plasminogen → ↓ clot breakdown	Thrombosis, seizures, hypotension if pushed fast	Give within **3 hours** of injury (1 g over 10 min, then 1 g over 8 hr). Most effective in hemorrhagic shock.
Crystalloids (NS, LR)	Restores intravascular volume	Hyperchloremic acidosis (NS), pulmonary edema if over-resuscitated	Use **warmed** fluids. Limit to 1–2 L before switching to blood products ("permissive hypotension").
Blood products (PRBC, FFP, platelets)	Restores O_2 carrying + clotting factors	Transfusion reaction, hyperkalemia, citrate toxicity → ↓ Ca^{2+}	**0.9% NS only** as compatible carrier. 2 RN check. Warm if rapid/massive. Monitor ionized Ca^{2+}.
Calcium gluconate	Replaces Ca^{2+} chelated by transfused citrate	Bradycardia, hypotension if rapid	Give after every 4 units of blood in massive transfusion.
Norepinephrine (Levophed) — vasopressor	α-agonist → vasoconstriction → ↑ MAP	Tissue ischemia/necrosis (extravasation!), ↑ afterload	Administer via **central line only**. Antidote for extravasation = phentolamine.
Fentanyl — opioid analgesic	μ-receptor agonist; ↓ pain without significant hypotension	Respiratory depression, chest-wall rigidity at high doses	Preferred trauma analgesic (more hemodynamically stable than morphine). Have naloxone available.
Mannitol — osmotic diuretic	↑ serum osmolality → pulls fluid from brain	Dehydration, electrolyte imbalance, rebound ↑ICP	For head trauma with ↑ICP. Use **filter needle** (crystals may form). Monitor I&O, Na^+, osm.
Tetanus toxoid (Td/Tdap)	Active immunization against *C. tetani*	Local soreness, low-grade fever	Give if last dose > 5 yrs (dirty wound) or > 10 yrs (clean wound). Add Tetanus Ig if non-immunized.

8 NCLEX Test Traps ⚠️

WRONG-VS-RIGHT · PRIORITY PITFALLS

~~"Start an IV first."~~ → **Open the airway first.**

ABC always trumps IV access. A patent airway with no IV beats two big IVs and no airway every time.

~~"Head-tilt/chin-lift."~~ → **Jaw-thrust maneuver.**

In any trauma, presume C-spine injury until imaging clears it. Head-tilt can convert a fracture into a cord transection.

~~"BP is normal — patient is stable."~~ → **Look at HR, mental status, cap refill, lactate.**

Healthy adults compensate by tachycardia and vasoconstriction until 30–40% of blood volume is lost. Normal BP ≠ adequate perfusion.

~~"Insert a Foley to monitor output."~~ → **NOT if blood at meatus, scrotal hematoma, or high-riding prostate.**

Forcing a Foley through a urethral disruption can cause permanent injury. Get a retrograde urethrogram first.

~~"Remove the impaled object before transport."~~ → **Stabilize in place with bulky dressings.**

The object may be tamponading a vessel; removal can cause exsanguination. Only the surgeon removes it, in the OR.

~~"Restless trauma client — give a sedative."~~ → **Assess for hypoxia and hemorrhage.**

Restlessness is the *earliest* sign of cerebral hypoxia. Sedating masks the clue.

~~"Warm IV fluids are a comfort measure."~~ → **They prevent the lethal triad.**

Hypothermia worsens coagulopathy and acidosis. Warming is a resuscitation priority, not a courtesy.

9 Patient & Family Education

ACUTE, RECOVERY, & PREVENTION

- **Acute phase:** Explain every procedure even if the client appears unresponsive — hearing is the last sense lost.
- **Keep family informed** in plain language; rotate one designated family spokesperson to reduce confusion.
- **Discharge instructions:** reinforce wound care, signs of infection (redness, warmth, drainage, fever > 101°F / 38.3°C), and when to return to the ED.
- **Post-concussion teaching:** rest, avoid screens, no contact sports until cleared, return for headache that worsens, vomiting, slurred speech, or unequal pupils.
- **DVT prevention** after immobility: early ambulation, SCDs, prophylactic anticoagulation as ordered.
- **Pain management:** teach the difference between acute pain and tolerance; use the 0–10 scale; multimodal (ice, position, scheduled vs PRN meds).
- **Psychosocial:** screen for acute stress disorder and PTSD — flashbacks, nightmares, hyperarousal > 1 month → refer to mental health.
- **Prevention teaching:** seatbelts, helmets, firearm safety/locks, fall prevention in the elderly, smoke alarms, never drinking and driving.

10 Memory Mnemonics

PATTERN RECOGNITION FOR THE EXAM

ABCDE

A — Airway + C-spine

B — Breathing + ventilation

C — Circulation + hemorrhage control

D — Disability (neuro/GCS)

E — Exposure / Environment (prevent hypothermia)

AMPLE

A — Allergies

M — Medications

P — Past Hx / Pregnancy

L — Last meal

E — Events of injury

DCAP-BTLS

D eformities · **C** ontusions · **A** brasions · **P** unctures

B urns · **T** enderness · **L** acerations · **S** welling

Beck's Triad (Tamponade)

- Muffled heart sounds
- Distended neck veins (JVD)
- Hypotension

Cushing's Triad (↑ICP)

- ↑ BP (widening pulse pressure)
- ↓ HR (bradycardia)
- Irregular respirations

Lethal Triad of Trauma

- **A**cidosis
- **H**ypothermia
- **C**oagulopathy

Triage — START (Mass Casualty)

- **Red** = immediate (life-threat, salvageable)
- **Yellow** = delayed
- **Green** = minor (walking wounded)

- **Black** = expectant / deceased

11 NCJMM Clinical Judgment Scenario

SIX-STEP NEXT GENERATION CASE APPLICATION

📋 **Case:** A 28-year-old male is brought to the ED after a high-speed MVC. He was the unrestrained driver, ejected from the vehicle. EMS reports: GCS 13, HR 128, BP 92/58, RR 28 shallow, SpO_2 89% on 4 L NC. Visible deformity right thigh, bruising across abdomen ("seatbelt sign"), and bleeding scalp laceration.

1 Recognize Cues

Relevant cues: tachycardia 128, hypotension 92/58, tachypnea 28, SpO_2 89%, GCS 13 (mild ↓LOC), femoral deformity (potential 1–1.5 L blood loss), abdominal bruising, scalp bleed, ejection from vehicle (high MOI).

2 Analyze Cues

The cluster — tachycardia + narrowing pulse pressure + tachypnea + cool skin + altered LOC + visible/occult bleeding — indicates **compensated hemorrhagic (hypovolemic) shock**, Class III. SpO_2 89% on low-flow O_2 signals inadequate oxygenation. Seatbelt sign raises concern for **intra-abdominal injury** (splenic/hepatic laceration, hollow viscus).

3 Prioritize Hypotheses

1. **Hemorrhagic shock** from femoral fracture ± intra-abdominal bleed — highest priority (life-threat).
2. **Inadequate oxygenation** — possible pulmonary contusion or hemothorax.
3. **Traumatic brain injury** — GCS 13, monitor for decline.

4 Generate Solutions

- Maintain C-spine stabilization; apply rigid collar; jaw-thrust if airway compromise.
- Switch to non-rebreather at 15 L/min; prepare for intubation if GCS < 8 or fatigue.
- Establish 2 large-bore IVs; initiate warmed isotonic crystalloid; **type & cross 4–6 units**; activate MTP if SBP < 90 persists.
- Splint the femur fracture (traction splint) to ↓ bleeding and pain.
- Bedside FAST exam to detect intraperitoneal blood; surgical consult.
- Administer TXA within 3 hrs of injury.
- Continuous monitoring; reassess ABCDE every few minutes.

5 Take Action

Nurse: applies non-rebreather (SpO_2 rises to 96%), places two 16-gauge IVs, sends type-and-cross + CBC + lactate + coags, hangs warmed LR wide-open, calls for O-negative PRBCs while crossmatch pending, splints femur, assists physician with FAST scan (positive for free fluid). Activates massive transfusion protocol; administers 1 g TXA IV over 10 minutes. Keeps the client covered with warming blanket.

6 Evaluate Outcomes

15 minutes later: HR 104, BP 108/70, RR 20, SpO_2 97% on NRB, GCS 14, lactate trending down from 4.8 → 3.1, UO 45 mL via Foley. **Outcome:** compensated → improving; perfusion restored, no further LOC decline. Client transferred to OR for exploratory laparotomy. **Effective.** If HR had risen or BP fallen further, the nurse would escalate to additional blood products and prepare for emergency surgery without delay.

Diane's NGN NCLEX 2026 Visual Study Library

Topic: Trauma Assessment · Emergency & Critical Care Cluster

Sources: Saunders Comprehensive Review for the NCLEX-RN (2025), ATI RN Adult Medical Surgical Nursing, Lippincott NCLEX-RN, ENA TNCC Provider Manual, ACS ATLS 10th Ed.