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CARD 01 · INFOGRAPHIC

Anaphylactic Reaction — *Nursing Care*

A life-threatening, IgE-mediated systemic hypersensitivity emergency.

PRIORITY: AIRWAY · CIRCULATION | FIRST-LINE: EPINEPHRINE IM | TYPE I HYPERSENSITIVITY | DISTRIBUTIVE SHOCK

SOURCE **Reference disclosure:** Anaphylaxis as a standalone topic is not present in your uploaded notes (the closest overlap is the *allergic / hemolytic transfusion reaction* material in Blood Transfusion #1 and #2). This deliverable is drawn from standard NGN NCLEX 2026 references — *Saunders Comprehensive Review for the NCLEX-RN 9th ed., ATI RN Adult Medical-Surgical Nursing 12th ed., Lippincott NCLEX-RN 10,000,* and current AAAAI/WAO anaphylaxis guidelines.

01 Definition & Overview

WHAT IT IS · WHY IT MATTERS

- **Anaphylaxis** is a rapid, severe, **IgE-mediated (Type I) systemic hypersensitivity** reaction triggered by re-exposure to an allergen.
- It causes **massive mast-cell degranulation** → histamine + leukotriene release → **airway edema, bronchospasm, and distributive shock.**
- It is a **true medical emergency** — death can occur in **minutes** from airway obstruction or circulatory collapse.

ONSET
Seconds to 30 min

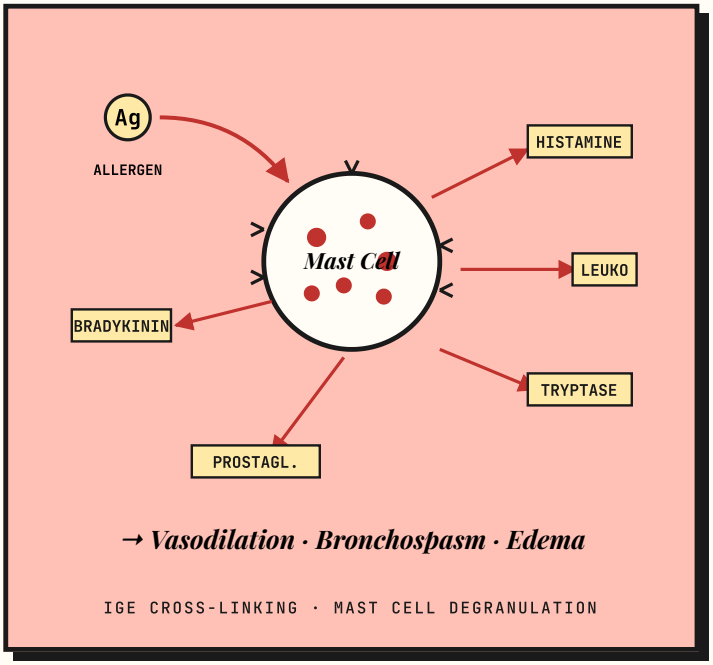
TOP TRIGGERS
Foods · Drugs · Insect stings · Latex · Contrast · Blood products

FIRST DRUG
Epinephrine IM
1:1000 · vastus lateralis

02 Pathophysiology — Simplified

ALLERGEN → MAST CELL → MEDIATORS → SHOCK

1. **1st exposure:** Allergen enters → B-cells produce **IgE antibodies** → IgE binds to mast cells & basophils. (Sensitization — no symptoms yet.)
2. **Re-exposure:** Allergen cross-links IgE on mast cells → **massive degranulation**.
3. **Mediators released:** histamine, leukotrienes, prostaglandins, tryptase, bradykinin.
4. **Systemic effects:**
   - Vasodilation → ↓BP (distributive shock)
   - ↑ Capillary permeability → angioedema, third-spacing
   - Bronchoconstriction + mucus → wheeze / stridor
   - ↑ Gut motility → cramping, vomiting, diarrhea
5. **If untreated:** airway obstruction + circulatory collapse → arrest.



→ Vasodilation · Bronchospasm · Edema

IGE CROSS-LINKING · MAST CELL DEGRANULATION

03 Signs & Symptoms

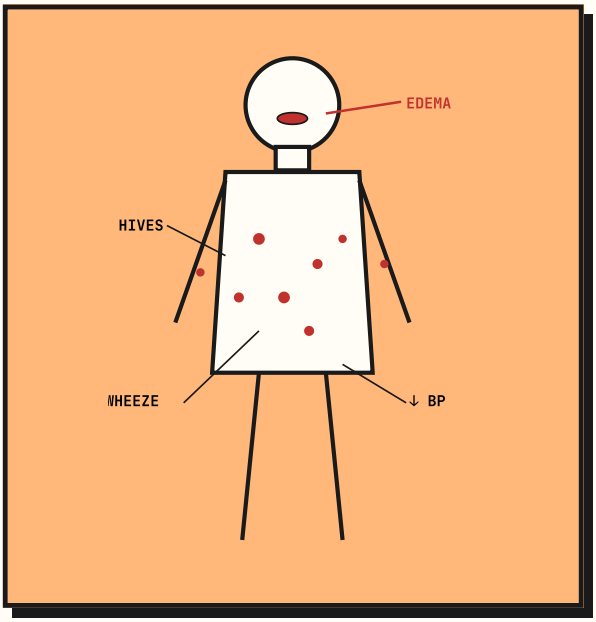
EARLY/MILD · LATE/SEVERE · RED FLAGS

Early / Mild FIRST

- Itching, urticaria (hives), generalized flushing
- Tingling lips / tongue · metallic taste in mouth
- Nasal congestion, sneezing, rhinorrhea, watery eyes
- Anxiety, restlessness, *"sense of impending doom"*
- Mild abdominal cramping, nausea
- Tachycardia, palpitations

Late / Severe RED FLAGS

- **Stridor, hoarseness, "lump in throat" — laryngeal edema**
- **Severe wheezing, dyspnea, accessory muscle use**
- **Angioedema of face, lips, tongue, uvula**
- **Hypotension, weak/thready pulse → shock**
- **Cyanosis, ↓ SpO_2, ↓ LOC, syncope**
- **Vomiting, diarrhea, incontinence**
- **Bradycardia → cardiac arrest (LATE)**



SKIN
Hives, flushing, pruritus, angioedema

RESPIRATORY
Stridor, wheeze, throat tightness, dyspnea

CARDIOVASCULAR
↓ BP, tachycardia → bradycardia, shock

NEUROLOGICAL
Anxiety, doom, dizzy, syncope, ↓ LOC

GI
Cramping, nausea, vomiting, diarrhea

SUBJECTIVE
"Lump in throat," metallic taste, impending doom

04 Priority Nursing Interventions

ABCS · SAFETY · NCLEX PRIORITIZATION

A
AIRWAY

Assess patency, listen for stridor. Prepare for **intubation / cricothyroidotomy** — anticipate rapid airway closure.

B
BREATHING

High-flow O_2 via non-rebreather. Place client in **semi-Fowler's** if dyspneic; consider supine with legs elevated for shock.

C
CIRCULATION

2 large-bore IVs · **rapid 0.9% NS bolus** (1–2 L). Continuous BP, HR, SpO_2, ECG monitoring.

1 STOP **Remove / discontinue the trigger** — stop the blood transfusion, IV med, contrast, or remove insect stinger. *This is always the FIRST action on NCLEX.*

2 CALL Call **Rapid Response / Code Blue**; do not leave the client. Stay with the client and delegate.

3 ADMIN Administer **Epinephrine 1:1000, 0.3–0.5 mg IM** into the **vastus lateralis** (mid-outer thigh) — first-line drug. May repeat every 5–15 min × 3 doses.

4 OPEN Open the airway. Give **high-flow O_2 at 100% non-rebreather**. Have intubation tray and suction at the bedside.

5 POSITION Position client **supine with legs elevated** (modified Trendelenburg) *if not in respiratory distress*; otherwise semi-Fowler's for breathing.

6 INFUSE Start **large-bore IV × 2 with 0.9% NS** wide open (1–2 L bolus); titrate to MAP ≥ 65.

7 GIVE Adjuncts (AFTER epi): **Diphenhydramine (H1)**, **Famotidine (H2)**, **Albuterol nebulizer** for bronchospasm, **Methylprednisolone** to blunt biphasic reaction.

8 MONITOR Continuous monitoring for **biphasic reaction** (return of symptoms in 1–72 hr after recovery). Admit for observation at least 4–6 hr — often 24 hr.

9 DOCUMENT Document trigger, time of onset, all interventions and times, response. Tag the allergy in chart, allergy band, and EHR.

05 Pharmacology

FIRST-LINE · ADJUNCT · MAINTENANCE

DRUG / CLASS	MECHANISM (SIMPLE)	DOSE / ROUTE	SIDE EFFECTS · NURSING CONSIDERATIONS
Epinephrine Alpha + Beta agonist FIRST-LINE	α_1 → vasoconstriction (↑ BP) β_1 → ↑ HR / contractility β_2 → **bronchodilation** Stabilizes mast cells	**1:1000 — 0.3–0.5 mg IM** in vastus lateralis (adult). Peds: 0.01 mg/kg IM (max 0.3 mg). Repeat q5–15 min × 3 PRN. **1:10,000 IV only in arrest.**	Tachycardia, tremor, anxiety, HTN, headache, palpitations. Use caution in CAD/HTN — but **never withhold** in true anaphylaxis. Monitor BP, HR, ECG continuously.
Diphenhydramine H_1 antihistamine (Benadryl)	Blocks H_1 receptors → reduces urticaria, itching, flushing	25–50 mg IV/IM every 4–6 hr	Sedation, dry mouth, urinary retention. **NEVER replaces epinephrine** — adjunct only.
Famotidine H_2 antihistamine	Blocks H_2 receptors → ↓ vascular permeability, complements H1	20 mg IV every 12 hr	Generally well tolerated; headache. Synergistic with H1 blocker.
Albuterol β_2 agonist (SABA)	Bronchodilator — reverses bronchospasm	2.5 mg nebulized in 3 mL NS; repeat PRN	Tachycardia, tremor, hypokalemia. Use for persistent wheeze after epi.
Methylprednisolone Glucocorticoid (Solu-Medrol)	Anti-inflammatory · blunts **biphasic reaction** (4–12 hr lag)	125 mg IV every 6 hr	Hyperglycemia, GI upset, immunosuppression. **Delayed onset** — never first-line.
0.9% Normal Saline Isotonic crystalloid	Restores intravascular volume in distributive shock	1–2 L rapid bolus, then titrate to MAP ≥ 65	Monitor for fluid overload (crackles, JVD), especially in CHF / older adults.

06 NCLEX Test Traps

COMMON CONFUSIONS · WRONG VS RIGHT

TRAP 01 · DRUG ORDER

✕ WRONG

"Give Benadryl first to stop the hives."

✓ RIGHT

Epinephrine IM is ALWAYS first. Benadryl is adjunct.

TRAP 02 · CONCENTRATION

✕ WRONG

"Push 1:1000 epinephrine IV."

✓ RIGHT

1:1000 = IM only. 1:10,000 is for IV (cardiac arrest). Extra zero = IV.

TRAP 03 · ROUTE

✕ WRONG

"Give epi subcutaneously."

✓ RIGHT

IM in vastus lateralis — faster absorption than SubQ or deltoid.

TRAP 04 · BIPHASIC

✕ WRONG

"Discharge home once symptoms resolve."

✓ RIGHT

Observe **4–6 hr minimum**; biphasic reactions can return up to **72 hr** later.

TRAP 05 · TRANSFUSION

✕ WRONG

"Slow the blood and call the HCP."

✓ RIGHT

STOP the transfusion — KVO with NS via *new tubing* — then call HCP / blood bank.

TRAP 06 · POSITIONING

✕ WRONG

"Sit the client up because BP is 70/40."

✓ RIGHT

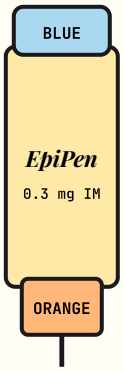
Supine, legs elevated when shock is dominant (if no airway distress). Sitting up can cause "empty heart" syndrome.

07 Patient & Family Education

PREVENTION · SELF-ADMINISTRATION · FOLLOW-UP

- ✓ **Always carry 2 EpiPens** at all times (a 2nd dose may be needed in 5–15 min).
- ✓ **Use the EpiPen at the FIRST sign** of severe reaction — do not wait to "see if it gets worse."
- ✓ **Call 911 immediately** after using EpiPen, even if you feel better — biphasic reaction can return.
- ✓ Wear a **MedicAlert bracelet** listing your allergy at all times.
- ✓ **Read all food labels** — including "may contain" warnings. Disclose allergies at restaurants.
- ✓ Inform **every HCP** (dentist, ER, pharmacy, school nurse, employer) of your allergy.
- ✓ Avoid **cross-reactive substances** (e.g., shellfish ↔ iodine contrast, latex ↔ banana/avocado/kiwi).
- ✓ **Check expiration** on EpiPens and replace yearly. Store at room temp, out of light.
- ✓ Teach family / coworkers / teachers **how to give the injection.**
- ✓ Schedule follow-up with an **allergist** for testing and possible immunotherapy.

EpiPen® Technique



"Blue to the Sky · Orange to the Thigh"

1. Remove BLUE safety cap.
2. Press ORANGE tip firmly into **outer thigh** (can be through clothing).
3. Hold **10 seconds**, then rub site 10 sec.
4. Call 911. Give 2nd dose in 5–15 min if no improvement.

08 Memory Boosters

MNEMONICS · PATTERN RECOGNITION

SHOCK — Anaphylaxis Response

S H O C K

- **S** top the trigger immediately
- **H** elp — call rapid response / code
- **O** xygen + Open airway
- **C** risis meds — `Epi → Benadryl → Steroid → Albuterol`
- **K** eep monitoring (biphasic up to 72 hr)

The "1 / 10" Concentration Rule

`1:1000` = `IM` for anaphylaxis (vastus lateralis).
`1:10,000` = `IV` for cardiac arrest.

"One extra zero for the IV." The more dilute solution is what you push into the vein.

EpiPen Rhyme

`Blue to the Sky · Orange to the Thigh`

BLUE cap comes off (point to sky).
ORANGE needle goes into the thigh (vastus lateralis).

Cross-Reactive "Sister" Allergies

- `Latex` ↔ banana, avocado, kiwi, chestnut
- `Shellfish` ↔ iodinated contrast dye
- `Eggs` ↔ flu vaccine, propofol
- `Penicillin` ↔ cephalosporins (5–10% cross)
- `Aspirin` ↔ other NSAIDs

ABCDE Priority Sequence

A irway (stridor? prep intubation) → **B** reathing (high-flow O_2) → **C** irculation (IV × 2 + NS bolus) → **D** rugs (Epi IM first!) → **E** valuate / observe for biphasic reaction.

09 NCJMM Clinical Judgment Scenario

NGN 2026 · SIX-STEP MODEL

SCENARIO

*A 28-year-old female receives the second dose of **ceftriaxone 1 g IV** for pyelonephritis on Med-Surg. Five minutes into the infusion she reports an **itchy throat and tingling lips**. Vital signs: **BP 88/52, HR 128, RR 26, SpO_2 91% on RA**. Diffuse hives are noted across the chest and arms, and faint expiratory wheezing is audible. The client states, "I feel like something terrible is happening."*

STEP 1 — Recognize Cues

What is the nurse noticing?

Recent IV antibiotic exposure · hives · throat itching · tingling lips · BP 88/52 (hypotension) · HR 128 (tachycardia) · RR 26 · SpO_2 91% · wheezing · subjective "sense of doom." These together = classic anaphylaxis pattern.

STEP 2 — Analyze Cues

What do they mean together?

Multi-system involvement (skin + respiratory + cardiovascular) within minutes of a known allergen = IgE-mediated **Type I anaphylaxis**. Hypotension reflects distributive shock from histamine-induced vasodilation; wheeze and tingling throat signal early airway compromise.

STEP 3 — Prioritize Hypotheses

Most urgent threat?

#1 Anaphylactic reaction → impending airway obstruction + distributive shock.
(Alternatives: simple urticarial drug reaction, vasovagal syncope, sepsis flare — but multi-system + temporal link rules these out as primary.)

STEP 4 — Generate Solutions

Expected actions (in order)

1) **STOP ceftriaxone infusion.**
2) Call rapid response.
3) Give **Epinephrine 0.3 mg IM (1:1000)** in vastus lateralis.
4) Start high-flow O_2 NRB; prepare intubation tray.
5) Open 2 large-bore IVs; rapid NS bolus 1–2 L.
6) Position supine, legs elevated.
7) Give Diphenhydramine, Famotidine, Methylprednisolone, Albuterol as ordered.
8) Continuous BP/HR/SpO_2/ECG monitoring.

STEP 5 — Take Action

Nurse intervenes

Nurse clamps the IV antibiotic line, keeps the catheter in place with new NS tubing, presses the rapid response button, and administers Epinephrine 0.3 mg IM into the right vastus lateralis. Applies non-rebreather at 15 L/min, positions client supine with legs elevated, opens a second IV, and begins a 1-L NS bolus while a second nurse retrieves intubation supplies.

STEP 6 — Evaluate Outcomes

Within 10 minutes — desired findings

BP ≥ 100/60 · HR < 110 · SpO_2 ≥ 95% on supplemental O_2 · resolution of stridor and wheeze · hives fading · client alert and oriented. If no improvement at 5–15 min → **repeat Epinephrine IM**. Admit for ≥ 4–6 hr observation for biphasic reaction. Update chart, EHR, allergy band, and discharge instructions with **"CEPHALOSPORIN ALLERGY — ANAPHYLAXIS"**.

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