

DIANE'S NGN NCLEX 2026 VISUAL STUDY LIBRARY

Food *Poisoning* (Foodborne Illness)

Acute illness caused by ingestion of food or water contaminated with bacteria, viruses, parasites, or their toxins — a high-yield NGN topic spanning infection control, fluid balance, and clinical judgment.

GASTROINTESTINAL · INFECTIOUS DISEASE · SAFETY

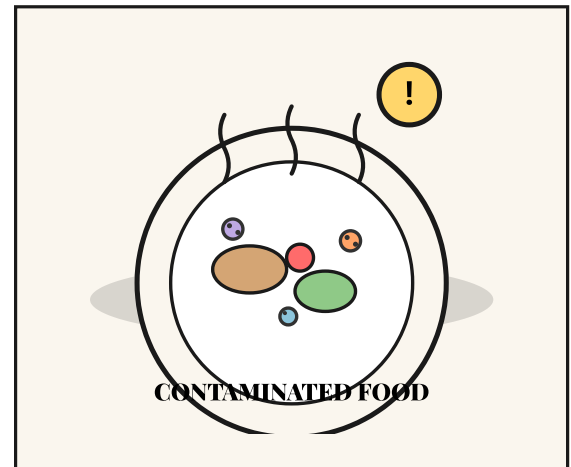
 **SOURCE NOTE:** This topic was not in your personal reference notes. Content drawn from standard NGN NCLEX 2026 references: Saunders, ATI, Lippincott, and current CDC food safety guidelines.

1 SECTION ONE Definition & Overview

① **Food poisoning** is an acute GI illness caused by eating food or drinking water contaminated with infectious organisms (bacteria, viruses, parasites) or their **preformed toxins**.

② Most cases are **self-limiting** (24–72 hrs), but high-risk groups — infants, older adults, pregnant women, and immunocompromised clients — can deteriorate quickly into **sepsis, HUS, paralysis, or death**.

③ It is a **reportable disease**. Nurses must collect stool/blood cultures, support hydration, prevent transmission, and recognize life-threatening complications.



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SECTION TWO

Pathophysiology (Simplified)

1

Ingestion of contaminated food/water containing pathogens or preformed toxins.



2

Pathogen **colonizes GI tract** OR toxin acts directly on intestinal mucosa (no incubation needed for preformed toxins → rapid onset).



3

Mucosal injury, inflammation, and **increased intestinal secretions** → osmotic and secretory diarrhea.



4

Fluid & electrolyte losses (Na^+ , K^+ , HCO_3^-) → hypovolemia, metabolic acidosis, possible hypokalemia.



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In severe cases: **bacteremia, sepsis, HUS** (E. coli O157:H7), **flaccid paralysis** (botulinum toxin), **Guillain-Barré** (Campylobacter), or **fetal infection** (Listeria).

SECTION THREE

3 High-Yield Pathogens

HUS

E. coli O157:H7

Source: undercooked ground beef, unpasteurized milk/juice, contaminated produce

- ▶ Onset: 3–4 days
- ▶ Bloody diarrhea, severe cramps, low/no fever
- ▶ Risk: **HUS** (renal failure, anemia, low platelets)
- ▶ ⚠️ **NO antibiotics, NO antidiarrheals** (↑ toxin release)

REPORT

Salmonella

Source: poultry, eggs, raw produce, reptiles/turtles

- ▶ Onset: 6–72 hrs
- ▶ Fever, abd cramps, non-bloody diarrhea, N/V
- ▶ High risk: infants, elderly, immunocompromised
- ▶ Antibiotics only if severe/septic

PREGNANCY

Listeria monocytogenes

Source: deli meats, hot dogs, soft cheeses, unpasteurized dairy, raw sprouts

- ▶ Onset: days–weeks
- ▶ Flu-like, fever, neck stiffness, confusion
- ▶ ⚠️ Pregnancy: miscarriage, stillbirth, neonatal sepsis
- ▶ Tx: **Ampicillin** (+ gentamicin if severe)

GBS RISK

Campylobacter jejuni

Source: undercooked poultry, raw milk, contaminated water

- ▶ Onset: 2–5 days
- ▶ Bloody diarrhea, fever, cramps, malaise
- ▶ ⚠️ Linked to **Guillain-Barré syndrome**
- ▶ Tx: azithromycin if severe

RAPID

Staphylococcus aureus (toxin)

Source: cream-filled pastries, mayo-based salads, ham, picnic foods left out

- ▶ Onset: **1–6 hrs** (very rapid — preformed toxin)
- ▶ Severe N/V, cramps; little/no fever
- ▶ Self-limiting (~24 hrs)
- ▶ Tx: supportive — hydration only

PARALYSIS

Clostridium botulinum

Source: home-canned foods, honey (infants), vacuum-packed fish

- ▶ Onset: 12–36 hrs
- ▶ **Descending flaccid paralysis**, diplopia, dysphagia, dysphonia, dry mouth
- ▶ ⚠️ **Respiratory failure** — priority airway monitoring
- ▶ Tx: **Botulinum antitoxin**, ventilator support

CRUISE SHIP

Norovirus

Source: shellfish, contaminated water, person-to-person (cruise ships, daycare, LTC)

- ▶ Onset: 12–48 hrs
- ▶ Sudden vomiting, watery diarrhea, low-grade fever
- ▶ ⚠️ Highly contagious → **contact precautions**
- ▶ Use **bleach**; alcohol gel is NOT reliable

RICE

Bacillus cereus & C. perfringens

Source: reheated rice (B. cereus), gravies/meats held warm (C. perfringens)

- ▶ Onset: 1–16 hrs
- ▶ Rapid N/V (emetic) or watery diarrhea
- ▶ Self-limiting (~24 hrs)
- ▶ Tx: supportive — hydration

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SECTION FOUR

Signs & Symptoms

Early / Mild

HOURS 1–24

- Nausea, vomiting
- Abdominal cramping/pain
- Watery diarrhea
- Low-grade fever, chills
- Headache, malaise, fatigue
- Loss of appetite
- Mild tachycardia

Late / Severe

RED FLAG

- Bloody / mucoid diarrhea
- Severe dehydration (dry mucosa, ↓ turgor, ↓ UOP)
- Hypotension, tachycardia, weak pulse
- High fever > 102°F (38.9°C)
- Altered LOC, confusion
- Diplopia, dysphagia, descending weakness (botulism)
- Decreased urine + pallor + bruising (HUS)
- Stiff neck, focal neuro deficits (Listeria)

RED FLAGS — CALL HCP / RAPID RESPONSE: Bloody diarrhea · Signs of HUS (oliguria, pallor, petechiae) · Neurologic symptoms (descending paralysis, diplopia, respiratory weakness) · Pregnant client with flu-like symptoms · Hypotension with tachycardia · Persistent vomiting in infant or older adult · No urine output for ≥ 8 hours.

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SECTION FIVE

Priority Nursing Interventions

A

AIRWAY — Suspect botulism → assess gag, swallow, and respiratory effort. Have suction & intubation ready.

B

BREATHING — Monitor RR, SpO₂, and accessory muscle use. Descending paralysis = vent risk.

C

CIRCULATION — Aggressive fluid replacement (NS or LR), monitor BP, HR, capillary refill, UOP.

ASSESS vital signs, orthostatic BP, skin turgor, mucous membranes, and capillary refill every 1–4 hrs.

MONITOR strict **I & O**; UOP < 30 mL/hr or < 0.5 mL/kg/hr = poor renal perfusion.

INITIATE IV access; administer **0.9% NS or LR** per HCP for fluid resuscitation.

OBTAIN **stool culture, CBC, electrolytes, BUN/creatinine**; blood culture if febrile/septic.

IMPLEMENT **Contact precautions** (norovirus, C. diff, Shigella, E. coli); private room; dedicated equipment.

REPLACE electrolytes — watch for **hypokalemia** (muscle weakness, flat T-waves) and metabolic acidosis.

ADMINISTER antiemetics (ondansetron) and ORS for mild cases; IV antibiotics **ONLY** when indicated.

REPORT confirmed cases to **public health department** — foodborne illness is reportable.

HOLD solid food until vomiting stops; advance slowly (BRAT diet: bananas, rice, applesauce, toast).

EDUCATE on hand hygiene with **soap and water** (alcohol gel not effective for norovirus/C. diff spores).

6 SECTION SIX Pharmacology

DRUG / CLASS	MECHANISM / USE	SIDE EFFECTS	NURSING CONSIDERATIONS
Ondansetron (Zofran) <i>Antiemetic — 5-HT₃ blocker</i>	Blocks serotonin receptors in the chemoreceptor trigger zone → controls N/V.	Headache, constipation, QT prolongation , dizziness.	Obtain baseline ECG if cardiac history. Monitor for torsades. Caution with other QT-prolonging drugs.
Loperamide (Imodium) <i>Antidiarrheal</i>	Slows GI motility → ↓ stool frequency.	Constipation, dizziness, toxic megacolon .	⚠️ CONTRAINDICATED in bloody diarrhea, fever, C. diff, or suspected E. coli O157:H7.
Ciprofloxacin (Cipro) <i>Fluoroquinolone</i>	Treats severe Salmonella, Shigella, traveler's diarrhea (adults).	Tendon rupture, QT prolongation, photosensitivity, C. diff.	Avoid antacids & dairy within 2 hrs. Not for children/pregnancy unless essential.
Ampicillin <i>Penicillin (Listeria DOC)</i>	Bactericidal — drug of choice for Listeria; often combined with gentamicin.	Rash, GI upset, anaphylaxis, C. diff.	Verify penicillin allergy before giving. Especially critical in pregnancy.
Botulinum Antitoxin (BAT, BabyBIG)	Neutralizes circulating botulinum toxin — must be given early .	Hypersensitivity, serum sickness.	Obtain through CDC. Monitor airway closely; have intubation equipment ready.
Oral Rehydration Solution (ORS) / IV fluids	Replaces fluid + electrolytes (Na ⁺ , K ⁺ , glucose).	Fluid overload if over-infused (esp. heart/renal disease).	First-line for mild–moderate dehydration. Use 0.9% NS or LR for IV resuscitation.

⚠️ BLACK-BOX WARNING: Do **NOT** give antidiarrheals (loperamide, diphenoxylate) or antibiotics in suspected **E. coli O157:H7**. Both increase release of Shiga toxin and the risk of **Hemolytic Uremic Syndrome (HUS)** — a triad of acute kidney injury, hemolytic anemia, and thrombocytopenia.

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SECTION SEVEN

NCLEX Test Traps ⚠

✗ WRONG

Give loperamide to stop bloody diarrhea in a child with suspected *E. coli*.

✓ RIGHT

Hold antidiarrheals; provide IV fluids, monitor renal function and CBC for HUS.

✗ WRONG

Use alcohol-based hand sanitizer after caring for a norovirus client.

✓ RIGHT

Wash hands with **soap and water**; clean surfaces with **bleach**. Alcohol gel does not kill norovirus or *C. diff* spores.

✗ WRONG

Tell a pregnant patient deli sandwiches and soft cheese are fine in moderation.

✓ RIGHT

Avoid deli meats, hot dogs, pâté, soft cheeses (feta, brie, queso fresco), and unpasteurized dairy due to *Listeria* risk.

✗ WRONG

Give honey to soothe a fussy 8-month-old with mild cough.

✓ RIGHT

NO honey before age 1 — risk of **infant botulism** (constipation, weak cry, poor feeding, hypotonia).

✗ WRONG

Prioritize antiemetic administration for a botulism client with diplopia and drooling.

✓ RIGHT

Airway is priority. Assess gag/swallow, monitor RR & SpO₂, prepare for intubation. Then give antitoxin.

✗ WRONG

Discharge home a child with bloody diarrhea, oral fluids, and a follow-up call in 3 days.

✓ RIGHT

Bloody diarrhea in a child = admit / observe. Monitor for **HUS**: oliguria, pallor, petechiae, ↑ BUN/creatinine.



SECTION EIGHT

Patient & Family Education

Cook & Store Safely

- ✓ Cook meat to safe internal temps: poultry 165°F, ground beef 160°F, fish 145°F
- ✓ Refrigerate leftovers within **2 hours** (1 hour if > 90°F)
- ✓ Avoid the "danger zone" 40°F–140°F
- ✓ Use a food thermometer — color is not reliable
- ✓ Reheat leftovers to 165°F

Clean & Separate

- ✓ Wash hands 20 seconds with soap before/after handling food
- ✓ Wash produce under running water
- ✓ Use separate cutting boards for raw meat vs. produce
- ✓ Sanitize counters with bleach solution
- ✓ Replace dish sponges/towels frequently

High-Risk Foods to Avoid

- ✓ **Pregnant:** deli meats, hot dogs, soft cheeses, sushi, raw sprouts, unpasteurized dairy
- ✓ **Infants < 1 yr:** NO honey (botulism)
- ✓ **Older adults / immunocompromised:** raw oysters, undercooked eggs/meat, unpasteurized juices
- ✓ Avoid bulging or leaking canned foods

When Sick at Home

- ✓ Sip clear fluids / ORS (Pedialyte) frequently
- ✓ Advance diet slowly with bland foods (BRAT)
- ✓ Avoid dairy, caffeine, alcohol, fatty foods until recovered
- ✓ Wash hands after every bathroom use
- ✓ Return to work/school only after diarrhea resolves (food handlers: per public health)

Call HCP If...

- ✓ Bloody or black/tarry diarrhea
- ✓ Fever > 102°F (38.9°C)
- ✓ Diarrhea > 3 days
- ✓ Signs of dehydration (no tears, no urine in 8 hrs, dizzy, confusion)
- ✓ Pregnancy with flu-like symptoms
- ✓ Weakness, double vision, trouble swallowing/breathing

Traveler Tips

- ✓ **"Boil it, cook it, peel it, or forget it"**
- ✓ Drink bottled or boiled water only
- ✓ Avoid ice, raw produce, street food in high-risk regions
- ✓ Carry ORS packets
- ✓ Discuss prophylactic Cipro/rifaximin with HCP for high-risk travel

9

SECTION NINE

Memory Mnemonics

FAT-TOM

WHAT BACTERIA NEED TO GROW

- F** — Food (protein-rich)
- A** — Acid (neutral pH)
- T** — Time (> 2 hrs in danger zone)
- T** — Temperature (40°F–140°F)
- O** — Oxygen
- M** — Moisture

40 → 140

THE DANGER ZONE (°F)

Bacteria multiply fastest between **40°F and 140°F**.

Keep cold foods **below 40°F**, hot foods **above 140°F**.

Toss food held in the danger zone > **2 hours** (1 hour if > 90°F outside).

4 D's

BOTULISM TOXIN SIGNS

- D** — Diplopia (double vision)
- D** — Dysphagia (trouble swallowing)
- D** — Dysphonia (slurred / weak voice)
- D** — Dry mouth

Plus: descending flaccid paralysis → respiratory failure.

HUS TRIAD

E. COLI O157:H7 COMPLICATION

Acute kidney injury (↑ BUN/Cr, oliguria)

Hemolytic anemia (↓ H&H, pallor)

Thrombocytopenia (petechiae, bruising)

Remember: "AHT — Atypical, Hemolytic, Thrombocytopenic"

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SECTION TEN · NGN 2026

Clinical Judgment Scenario (NCJMM)

NCJMM 6-Step Model: Apply the Next Generation Clinical Judgment Measurement Model to a realistic food poisoning case. Each step shows the clinical reasoning the NGN exam expects you to demonstrate.

SCENARIO

A 6-year-old girl is brought to the ED 4 days after a family BBQ where she ate undercooked hamburger. She has had **bloody diarrhea** for 36 hours, decreased appetite, and is now described as "very tired" by her mother. The child has had **no urine output for 10 hours**.

VITAL SIGNS

T 100.4°F · HR 138 · RR 28 · BP 92/54 · SpO₂ 97%

LABS

Hgb 8.2 · Plt 78,000 · BUN 48 · Cr 2.1 · K⁺ 5.8

ASSESSMENT

Pallor, scattered petechiae on legs, dry mucous membranes, lethargic

1

RECOGNIZE
CUES

Recognize Cues

Relevant findings: Bloody diarrhea after undercooked beef · oliguria (no UOP × 10 h) · pallor + petechiae · ↓ Hgb (8.2) · ↓ Platelets (78K) · ↑ BUN/Cr · ↑ K⁺ · tachycardia · tachypnea · borderline hypotension for age · lethargy.

2

ANALYZE
CUES

Analyze Cues

Pattern fits the **HUS triad**: hemolytic anemia + thrombocytopenia + acute kidney injury — a classic complication of **E. coli O157:H7**. Hyperkalemia is from renal failure. Oliguria + lethargy + tachycardia = volume depletion AND impaired renal perfusion. Bloody diarrhea + history of undercooked beef confirms the source.

3

PRIORITIZE
HYPOTHESES

Prioritize Hypotheses

- #1 Priority:** Hemolytic Uremic Syndrome with acute kidney injury and hyperkalemia → risk of cardiac arrhythmia.
- #2:** Hypovolemia from blood + diarrheal losses.
- #3:** Risk for bleeding due to thrombocytopenia. Sepsis is lower priority but still monitored.

4

GENERATE
SOLUTIONS

Generate Solutions

Anticipated orders: IV access × 2 · 0.9% NS bolus 20 mL/kg with caution (oliguric) · STAT ECG and continuous cardiac monitoring · cardiology/nephrology consult · contact precautions · stool culture for Shiga toxin · type & cross-match for possible PRBC transfusion · prepare for possible **dialysis**. **HOLD all antibiotics and antidiarrheals.**

5

TAKE
ACTION

Take Action

Place on continuous cardiac monitor (K⁺ 5.8 + ↓ renal function = arrhythmia risk). Establish two large-bore IVs. Administer cautious NS bolus and notify pediatric nephrology immediately. Implement **contact precautions**; private room; dedicated equipment. Insert indwelling catheter for strict hourly UOP. Notify public health. Provide age-appropriate explanation to child and mother. Hold any antidiarrheal/antibiotic. Prepare family for possible PICU transfer and dialysis discussion.

6

EVALUATE
OUTCOMES

Evaluate Outcomes

Improving (expected): UOP $\geq$ 1 mL/kg/hr · BP & HR appropriate for age · K⁺ trending toward 3.5–5.0 · Hgb & platelets stabilizing · resolving petechiae · improving LOC · negative stool culture conversion.

Worsening (escalate): Continued oliguria/anuria · rising BUN/Cr · K⁺ > 6.0 or ECG changes · seizure · new neuro deficits · uncontrolled bleeding → **activate rapid response & prepare for dialysis.**

Diane's NGN NCLEX 2026 Visual Study Library

Food Poisoning · Foodborne Illness · GI / Infectious Disease Module · NGN 2026 Test Plan

References: Saunders, ATI, Lippincott · CDC Food Safety Guidelines 2025–2026