NGN NCLEX 2026 · GASTROINTESTINAL · INFECTIOUS DISEASE

Bacterial Gastroenteritis

Acute inflammation of the stomach and intestines from bacterial pathogens or their toxins — producing diarrhea, dehydration, and electrolyte disturbance. A high-frequency NCLEX topic for prioritization, infection control, and clinical judgment.

- Diane's NGN NCLEX 2026 Study Series
- Clinical Judgment · NCJMM Integrated
- System: GI / Infectious

1 Definition & Overview

WHAT IT IS

Inflammation of the GI mucosa caused by bacterial infection or bacterial toxins. Hallmarks: **diarrhea (often watery, sometimes bloody)**, abdominal cramping, nausea/vomiting, and fever.

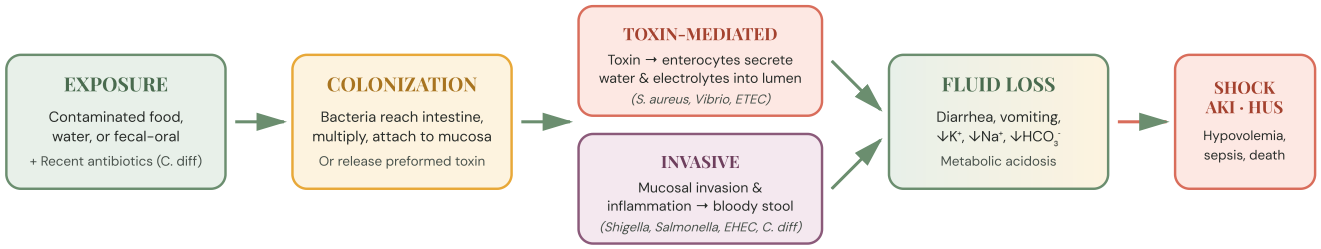
WHY IT MATTERS

Rapid fluid & electrolyte loss can cause **hypovolemic shock, AKI, and death** — especially in infants, older adults, and immunocompromised patients. Some strains progress to **HUS, sepsis, or toxic megacolon**.

KEY PATHOGENS TO KNOW

- **Salmonella** — undercooked poultry, eggs, reptiles
- **E. coli O157:H7 (EHEC)** — undercooked beef → HUS risk
- **Clostridioides difficile** — recent antibiotics, healthcare
- **Vibrio cholerae** — rice-water stools, contaminated water
- **Shigella** — fecal-oral, daycares, bloody diarrhea
- **Campylobacter** — raw poultry, unpasteurized milk
- **Staphylococcus aureus** — preformed toxin, rapid onset
- **Listeria** — deli meats, soft cheeses, pregnancy risk

2 Pathophysiology — Simplified



Two routes — same outcome:

- The gut becomes a one-way exit ramp for water & electrolytes.
- Pediatric & older adult patients decompensate fastest.
- Bloody stool = think invasive (Shigella · Salmonella · EHEC · C. diff).
- Watery, rapid-onset (1–6 hr) = think preformed toxin (S. aureus, B. cereus).

3 Signs & Symptoms

○ Early / Mild

- ✓ Nausea & vomiting
- ✓ Abdominal cramping & bloating
- ✓ Watery diarrhea (≥3 loose stools/day)
- ✓ Low-grade fever (<101°F)
- ✓ Headache, malaise, anorexia
- ✓ Slight tachycardia, decreased appetite
- ✓ Mild dry mucous membranes

🚨 Late / Severe — Red Flags

- ! **BLOODY DIARRHEA** → invasive pathogen (Shigella · EHEC · C. diff)
- ! **HIGH FEVER** (≥102°F) with chills → bacteremia
- ! **SEVERE DEHYDRATION** → poor turgor, sunken eyes, oliguria, hypotension, tachycardia
- ! **ALTERED MENTAL STATUS** → shock or electrolyte derangement
- ! **HUS TRIAD** (EHEC) → hemolytic anemia + thrombocytopenia + AKI
- ! **TOXIC MEGACOLON** (C. diff) → distended abdomen, absent bowel sounds, fever
- ! **SEPSIS** → ↑lactate, ↓BP, ↑HR, ↑RR, fever or hypothermia

4 Priority Nursing Interventions

A — ASSESS HYDRATION FIRST

VS, orthostatic BP, skin turgor, mucous membranes, capillary refill, urine output, daily weights, LOC.

B — RESTORE FLUIDS & ELECTROLYTES

IV isotonic fluids (NS or LR) for moderate-severe dehydration; ORS for mild. Replace K^+, Na^+, HCO_3^- as ordered.

C — STRICT I & O

Measure every stool, every emesis. Daily weights at the same time, same scale, same clothing.

D — CONTACT PRECAUTIONS

Private room, gown + gloves. **C. diff = SOAP & WATER hand hygiene** (alcohol does NOT kill spores). Dedicated equipment.

E — STOOL CULTURES BEFORE ANTIBIOTICS

Identify the pathogen first. Send for ova & parasites, C. diff toxin assay, leukocytes if indicated.

F — MONITOR LABS

K^+, Na^+, BUN/creatinine, CBC, lactate. Watch for hypokalemia (most common) and metabolic acidosis.

G — SKIN & PERIANAL CARE

Gentle cleansing after each stool, barrier cream, frequent linen changes. Inspect for breakdown each shift.

H — DIET — ADVANCE AS TOLERATED

NPO if vomiting → clear liquids → BRAT (banana, rice, applesauce, toast) → bland → regular. Avoid dairy, fatty/spicy foods, caffeine.

! — HOLD ANTIMOTILITY AGENTS

Avoid loperamide / diphenoxylate in suspected bacterial gastroenteritis — retains toxin, prolongs illness, risks toxic megacolon & HUS.

★ — REASSESS & EDUCATE

Trend vital signs & output. Teach hand hygiene, food safety, when to return to ER (bloody stool, no urine, confusion, persistent fever).

5 Pharmacology

DRUG / CLASS	INDICATION	KEY CONSIDERATIONS	SIDE EFFECTS / CAUTIONS
Oral Vancomycin	C. difficile colitis (first line)	Must be PO/NG — IV vanco does NOT reach gut lumen	Monitor renal function; rare ototoxicity
Fidaxomicin (Dificid)	C. difficile (lower recurrence)	Narrow-spectrum macrolide; preserves gut flora	Nausea, abdominal pain; expensive
Metronidazole (Flagyl)	C. diff (mild only) · giardia · amebiasis	Take with food. **NO alcohol** — disulfiram-like reaction	Metallic taste, peripheral neuropathy, dark urine
Ciprofloxacin (Fluoroquinolone)	Severe Salmonella, Shigella, traveler's diarrhea	Avoid dairy & antacids within 2 hr; full glass of water	Tendon rupture, QT prolongation, photosensitivity, C. diff risk
Azithromycin (Macrolide)	Campylobacter, severe Shigella	Once-daily dosing; pediatric-friendly	QT prolongation, GI upset
Ondansetron (Zofran)	Nausea / vomiting	ODT or IV; safer than promethazine in most	Headache, constipation, QT prolongation
Oral Rehydration Solution (ORS)	Mild–moderate dehydration	Glucose + Na^+ + K^+; sip frequently in small amounts	Watch for ongoing losses; switch to IV if vomiting persists
⚠ NO ANTIBIOTICS	E. coli O157:H7 (EHEC)	Antibiotics ↑ Shiga-toxin release → ↑ HUS risk	Supportive care only; monitor for HUS & AKI
⚠ AVOID Loperamide	Suspected bacterial diarrhea	Slows transit → retains toxin → toxic megacolon	Especially dangerous in C. diff & EHEC

6 NCLEX Test Traps

✗ TRAP Using alcohol-based hand rub after caring for a patient with C. difficile.

✓ CORRECT Wash with **SOAP & WATER** — alcohol does NOT kill C. diff spores. Mechanical removal is required.

✗ TRAP Giving loperamide (Imodium) to slow diarrhea in a patient with bloody stools and recent antibiotics.

✓ CORRECT Do NOT give antimotility agents in bacterial gastroenteritis — they retain toxin and risk toxic megacolon.

✗ TRAP Starting empiric antibiotics for a child with bloody diarrhea and a history of eating undercooked beef.

✓ CORRECT Suspect EHEC O157:H7 — antibiotics increase HUS risk. Supportive care, IV fluids, monitor for HUS triad.

✗ TRAP Drawing stool cultures AFTER initiating antibiotics.

✓ CORRECT Obtain cultures FIRST so the pathogen can be identified before treatment alters results.

✗ TRAP Treating C. diff with IV vancomycin.

✓ CORRECT Use **ORAL** vancomycin or fidaxomicin — IV vanco does not reach the colon lumen where C. diff lives.

✗ TRAP Prioritizing pain control over fluid replacement in a patient with severe dehydration and hypotension.

✓ CORRECT Circulation first (ABCs) — rapid IV isotonic fluid resuscitation before non-emergent comfort measures.

✗ TRAP Allowing a C. diff patient to share a bathroom and using the same equipment for multiple patients.

✓ CORRECT Private room, contact precautions, and dedicated equipment (BP cuff, thermometer, stethoscope).

✗ TRAP Telling a patient with vomiting to drink large glasses of plain water.

✓ CORRECT Use ORS in small frequent sips — plain water can worsen hyponatremia. Advance diet slowly to BRAT.

7 NCJMM Clinical Judgment Scenario

NEXT-GEN CLINICAL JUDGMENT MEASUREMENT MODEL

Case: 78-Year-Old Post-Antibiotic Diarrhea

A 78-year-old woman returns to the ED 5 days after discharge from a hospital stay for community-acquired pneumonia treated with IV clindamycin. She reports 8–10 watery, foul-smelling stools per day, abdominal cramping, anorexia, and feeling "weak all over." VS: T 100.8°F, HR 112, BP 98/58, RR 22, SpO_2 96%. Labs: WBC 18,200, K^+ 3.1, creatinine 1.6 (baseline 0.9). Stool sent for C. diff toxin assay.

RECOGNIZE CUES

What's Relevant?

Recent antibiotics + foul watery stools + fever + leukocytosis + hypokalemia + AKI + tachycardia + hypotension. Classic for **C. difficile colitis with dehydration and AKI**.

ANALYZE CUES

What's Going On?

Clindamycin disrupted gut flora → C. diff overgrowth → toxin-mediated colitis. Volume losses → hypovolemia → prerenal AKI. K^+ losses through stool → hypokalemia.

PRIORITIZE / TAKE ACTION

Do This — In Order

① IV NS bolus (circulation first) ② Place in private room, contact precautions, **SOAP & WATER** ③ D/C clindamycin ④ Initiate oral vancomycin or fidaxomicin ⑤ Replace K^+ ⑥ Strict I&O, daily weights ⑦ Hold loperamide.

EVALUATE OUTCOMES

Is It Working?

HR <100, MAP ≥65, urine ≥30 mL/hr, K^+ & creatinine normalizing, formed stools, WBC trending down, no abdominal distention or absent bowel sounds (toxic megacolon).

8 Patient & Family Education

Hand Hygiene

Wash with soap and water for 20 seconds — before eating, after the bathroom, after diaper changes, before food prep. **Soap & water beats hand sanitizer for C. diff spores.**

Food Safety

- Cook ground beef to 160°F
- Cook poultry to 165°F
- Refrigerate leftovers within 2 hours
- Avoid unpasteurized milk & soft cheeses
- Wash produce thoroughly

Hydration at Home

Sip ORS, broth, or clear fluids in **small frequent amounts**. Avoid sugary sodas and plain water alone — they don't replace electrolytes. Sports drinks are diluted ORS substitutes.

Diet Progression

Clear liquids → BRAT (banana, rice, applesauce, toast) → bland foods → regular diet. Avoid dairy, fried/fatty, spicy foods, caffeine, alcohol until fully recovered.

Stay Home / Contain Spread

No work, school, or daycare until stool-formed and **symptom-free for 24–48 hours**. Healthcare/food workers may need clearance. Don't share towels or utensils.

When to Return to ER

- Bloody or black stools
- No urine for 8+ hours
- Confusion, dizziness on standing
- Persistent fever >102°F
- Severe abdominal pain or distension
- Inability to keep fluids down >24 hr

9 Memory Boosters

B · R · A · T

RECOVERY DIET

Bananas — potassium replacement
Rice — bland binding starch
Applesauce — pectin firms stool
Toast — easy carbohydrate

SOAP

FOR THE SPORE

C. diff lives as a **spore** — alcohol gel can't kill spores.
Soap
On hands
And
Plenty of water — friction matters.

3 H's

HUS TRIAD (EHEC)

Hemolytic anemia (↓Hgb, schistocytes)
Hemorrhage tendency (thrombocytopenia)
Hyperazotemia (AKI — ↑BUN/Cr)
⚠ No antibiotics, no antimotility.

DRY

DEHYDRATION CUES

Decreased turgor & urine output
Rapid pulse, low BP, sunken eyes
Yellow concentrated urine
+ ↑ BUN/Cr ratio >20:1

"4 C's"

HOLD THE DRUGS

When suspecting bacterial diarrhea, avoid:
Culture-skipping (get cultures first)
Constipating agents (loperamide)
Cipro for EHEC (↑ HUS)
Cold hand-rub for C. diff

SHE-CS

TOP PATHOGENS

Salmonella — eggs, poultry
Helicobacter / Hospital C. diff
E. coli O157:H7 — beef, HUS
Campylobacter — raw chicken
Shigella / **S**taph aureus — fast onset