NCLEX HIGH-YIELD REVIEW · 2026 TEST PLAN

TORCH Infections in Pregnancy

Maternity · Perinatal · Infection Control · Clinical Judgment

Maternal-Newborn | Vertical Transmission | Teratogenic | Antepartum Care

1 Definition / Overview

- **TORCH** is an acronym for a group of infections that cross the **placenta (vertical transmission)** and can cause serious **congenital anomalies, miscarriage, stillbirth, or neonatal death**.
- Maternal symptoms are often *mild or asymptomatic*, but fetal effects can be devastating — especially with **1st-trimester exposure** during organogenesis.
- **Why it matters:** Early screening, prevention, and prompt treatment protect the fetus. Prevention is the #1 NCLEX priority.

T	**Toxoplasmosis** — parasite from cat litter & undercooked meat
O	**Other** — Syphilis, Varicella, Parvovirus B19, HIV, Hep B, Zika, Listeria, GBS
R	**Rubella** — "German measles" (live MMR contraindicated in pregnancy)
C	**Cytomegalovirus (CMV)** — most common congenital viral infection in the U.S.
H	**Herpes Simplex Virus (HSV)** — active lesions at delivery = C-section

2 Pathophysiology (Simplified)

Pathogen enters mother → Crosses placenta (or exposure at birth) → Infects developing fetus → Disrupts organogenesis → Congenital anomalies, IUGR, stillbirth

Three routes of vertical transmission: (1) Transplacental — any trimester · (2) Perinatal — contact with genital secretions during birth (HSV, Hep B, HIV) · (3) Postnatal — breast milk (CMV, HIV).

3 Signs & Symptoms

MATERNAL (OFTEN MILD)

- Flu-like illness, low-grade fever
- Maculopapular rash, lymphadenopathy
- Fatigue, myalgia
- Genital lesions (HSV, syphilis chancre)

FETAL / NEONATAL

- **IUGR**, low birth weight
- **Microcephaly**, seizures
- Hepatosplenomegaly, jaundice
- "**Blueberry muffin**" petechial rash
- Cataracts, hearing loss

Pathogen	Classic Fetal/Neonatal Findings
Toxoplasmosis	**Classic triad:** chorioretinitis, hydrocephalus, intracranial calcifications
Rubella	**3 C's:** Cataracts · Cardiac defects (PDA) · Cochlear (sensorineural deafness); "blueberry muffin" rash
CMV	**Sensorineural hearing loss** (most common congenital cause), periventricular calcifications, microcephaly
HSV	Skin vesicles, CNS disease (seizures, lethargy), disseminated → sepsis, high mortality
Syphilis	Hutchinson teeth, saddle nose, snuffles (bloody nasal d/c), deafness, stillbirth
Varicella	Limb hypoplasia, cicatricial skin scarring, chorioretinitis
Parvovirus B19	Hydrops fetalis, severe fetal anemia, fetal demise
Zika	Severe microcephaly, brain calcifications

RED FLAGS — Call provider / escalate immediately: Active herpes lesions in a laboring patient · New rash + fever in 1st trimester · Exposure to a child with fever & rash · Decreased fetal movement after known TORCH exposure · Newborn with petechiae, jaundice, microcephaly, or seizures.

4 Priority Nursing Interventions (ABC → Safety)

- **ASSESS** airway, breathing, circulation in neonate; neuro status, tone, feeding, seizure activity.
- **SCREEN** at first prenatal visit: rubella titer, RPR/VDRL (syphilis), HIV, HepB, urine c&s, GBS at 36–37 wk.
- **IMPLEMENT** standard + contact precautions; isolate neonate with suspected congenital infection.
- **ADMINISTER** prescribed antimicrobials: Penicillin G (syphilis), Acyclovir (HSV), antiretrovirals (HIV).
- **EDUCATE** on transmission prevention: handwashing, food safety, safe sex, cat-litter avoidance.
- **MONITOR** fetal status: serial ultrasounds for IUGR/anomalies, NST, daily fetal kick counts.
- **PREPARE** for **C-section** if active HSV lesions or prodromal symptoms at onset of labor.
- **GIVE** postpartum MMR & varicella vaccines if nonimmune; RhoGAM if Rh-negative.

5 Pharmacology

💊 Penicillin G (Benzathine)

Antibiotic · Beta-lactam

MOA: Disrupts bacterial cell wall synthesis → kills *Treponema pallidum* (syphilis).

Side Effects: Anaphylaxis, Jarisch–Herxheimer reaction (fever, chills, ↑HR 2–8 hr after dose).

Nursing: ⚠️ **ONLY proven tx in pregnancy — DESENSITIZE if PCN-allergic.** Monitor 30 min post-dose. Give IM deep in gluteus.

💊 Acyclovir / Valacyclovir

Antiviral · Nucleoside analog

MOA: Inhibits viral DNA polymerase → stops HSV replication.

Side Effects: Nephrotoxicity, headache, N/V, crystalluria.

Nursing: **Push fluids** to prevent kidney injury. Suppressive therapy often started at **36 weeks** in pts with hx of HSV to prevent outbreak at delivery.

💊 MMR Vaccine (Measles-Mumps-Rubella)

Vaccine · LIVE-attenuated

MOA: Provides active immunity against rubella.

Side Effects: Mild fever, rash, arthralgia.

Nursing: 🚫 **CONTRAINDICATED in pregnancy.** Give **POSTPARTUM before discharge** if nonimmune. Safe while breastfeeding. Counsel patient to **avoid pregnancy for 28 days** after dose.

💊 Antiretroviral Therapy (ART) — HIV

Antiviral combination

MOA: Suppresses HIV viral load → prevents perinatal transmission.

Nursing: Continue throughout pregnancy; **zidovudine IV during labor**; newborn receives prophylaxis ×4–6 wk; **avoid breastfeeding** in resource-rich settings.

6 🟫 NCLEX Test Traps ⚠️

TRAP 1 **MMR is a LIVE vaccine — NEVER in pregnancy.** Give POSTPARTUM (safe during breastfeeding). Avoid pregnancy ×28 days.

TRAP 2 **PCN-allergic + syphilis → DESENSITIZE, don't substitute.** Penicillin is the ONLY effective treatment in pregnancy.

TRAP 3 **Active HSV lesions in labor = C-SECTION.** Vaginal birth risks fatal neonatal herpes. Even prodromal tingling = cesarean.

TRAP 4 **CMV has NO vaccine and NO effective prenatal tx.** Priority intervention = *prevention* via handwashing (esp. daycare/toddler exposure).

TRAP 5 **Pregnant women should NOT change cat litter.** Also avoid raw/undercooked meat and unwashed produce (toxoplasmosis).

TRAP 6 **Avoid deli meats, soft cheeses, unpasteurized dairy** (Listeria → sepsis, stillbirth, meningitis).

TRAP 7 Don't confuse **Rubella (German measles)** with **Rubeola (measles)**. Rubella is in TORCH; its signature fetal defect is the 3 C's.

TRAP 8 **Parvovirus B19 ("Fifth disease")** → fetal risk is *hydrops fetalis & severe anemia*, not a rash. Watch for ↓fetal movement.

TRAP 9 **Zika:** Avoid travel to endemic areas. Use condoms or abstain if partner traveled there (sexual transmission).

TRAP 10 Ideally check **rubella & varicella immunity BEFORE pregnancy.** Nonimmune + exposure during pregnancy = call provider, consider VZIG for varicella.

7 🟦 Patient Education

- ✓ **Wash hands often** — especially after diaper changes or contact with young children (CMV prevention).
- ✓ **Cook meat thoroughly** to ≥165°F; avoid raw/rare (toxoplasmosis, listeria).
- ✓ **No cat-litter duty** — have someone else change it; wear gloves when gardening.
- ✓ **Wash all fruits and vegetables** before eating.
- ✓ **Avoid unpasteurized dairy**, soft cheeses, and deli meats unless heated until steaming.
- ✓ **Practice safe sex** — use condoms; screen partners for STIs.
- ✓ **Update vaccines BEFORE pregnancy** (MMR, varicella). TDaP given at 27–36 weeks.
- ✓ **Attend all prenatal visits** — screening catches infections early.
- ✓ **Report rash, fever, or exposure** to sick children to provider right away.
- ✓ **Notify L&D** immediately of any genital tingling, burning, or lesions near due date.

8 🟨 Memory Boosters 🧠

🔤 TORCH

Toxoplasmosis · **O**ther · **R**ubella · **C**MV · **H**SV — the full panel of congenital infections.

🐱 "Cats Cause Congenital Chaos"

Pregnant women avoid the cat litter box → **Toxoplasmosis**. Also applies to raw meat.

👁️ Rubella's "3 C's"

Cataracts · **C**ardiac defects (PDA) · **C**ochlear deafness.

👂 CMV = "Can't-Make-Vibrations"

CMV is the #1 congenital cause of **sensorineural hearing loss**.

🫐 "Blueberry Muffin Baby"

Petechial/purpuric rash seen in **Rubella and CMV** (dermal erythropoiesis).

🚫 "Live = Leave pregnancy alone"

LIVE vaccines contraindicated in pregnancy: **MMR, varicella, yellow fever, nasal-spray flu, smallpox**. Inactivated flu & TDaP are SAFE.

🩸 Herpes = "Have C-section"

Active HSV lesions or prodrome at labor onset → cesarean delivery to prevent neonatal HSV.

👃 "Snuffly Saddle-nosed Syphilis baby"

Congenital syphilis: **snuffles** (bloody nasal d/c), **saddle nose**, Hutchinson teeth, deafness.

⚡ Priority Order (NCLEX)

1. Airway/Breathing (seizing neonate) → **2. Safety** (isolation, C-section for HSV) → **3. Treatment** (antimicrobials) → **4. Teaching** (prevention).

📅 Timing Matters

1st trimester = worst — organogenesis. **3rd trimester** = perinatal transmission (HSV, Hep B, HIV, GBS).