REPRODUCTIVE HEALTH • INFECTIOUS DISEASE

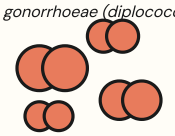
Gonorrhea & Syphilis

Bacterial STI Comparison — NGN NCLEX 2026 High-Yield Reference

Bacterial STIs | Reportable Diseases | Antibiotic-Treatable | Perinatal Risk

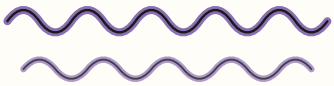
GONORRHEA

N. gonorrhoeae (diplococci)



SYPHILIS

T. pallidum (spirochete)



1 Definition & Overview

Gonorrhea

- **Pathogen:** *Neisseria gonorrhoeae* — gram-negative diplococcus
- **Transmission:** sexual contact (vaginal, anal, oral); perinatal at birth
- **Incubation:** 2–7 days
- **Sites:** urethra, cervix, rectum, pharynx, conjunctiva
- **Why it matters:** #1 cause of PID & infertility; rising drug resistance

Syphilis

- **Pathogen:** *Treponema pallidum* — spirochete
- **Transmission:** sexual contact, transplacental (congenital), blood
- **Incubation:** 10–90 days (avg 21)
- **Sites:** systemic — progresses through 4 stages
- **Why it matters:** "Great imitator"; untreated = cardiovascular & neuro damage

2 Pathophysiology (Simplified)

Gonorrhea Pathway

Step 1:
Bacteria attach to columnar epithelium of mucous membranes

↓

Step 2:
Invade cells → trigger acute inflammatory response

↓

Step 3:
Purulent (pus-forming) exudate develops at site

↓

Step 4:
Ascending infection → endometritis, salpingitis = **PID**

↓

Step 5:
Tubal scarring → infertility, ectopic pregnancy; bacteremia → DGI (arthritis, dermatitis)

Syphilis Pathway

Step 1:
Spirochete enters through mucous membrane microabrasion

↓

Step 2:
Multiplies locally → painless chancre (PRIMARY)

↓

Step 3:
Disseminates via blood/lymph → systemic rash (SECONDARY)

↓

Step 4:
Body controls infection but doesn't clear it → asymptomatic (LATENT)

↓

Step 5:
Years later: gummas, aortitis, neurosyphilis (TERTIARY)

3 Signs & Symptoms

Gonorrhea — by Site

♀ Female

- **~50% asymptomatic** — the silent threat
- Purulent yellow-green vaginal discharge
- Dysuria, urinary frequency
- Abnormal bleeding (intermenstrual, post-coital)
- Pelvic/lower abdominal pain
- Cervical motion tenderness (CMT)

♂ Male

- Purulent yellow-green urethral discharge ("drip")
- Dysuria — burning with urination
- Urinary frequency & urgency
- Testicular pain or swelling (epididymitis)
- ~10% asymptomatic

🚨 Extragenital & Disseminated

- **Pharyngeal:** sore throat (often asymptomatic)
- **Rectal:** anal discharge, pruritus, tenesmus
- **Neonatal:** ophthalmia neonatorum → blindness if untreated
- **Disseminated (DGI):** fever + arthritis + pustular skin lesions (triad)

Syphilis — by Stage

PRIMARY
10–90 days

Painless Chancre

Single, firm, indurated, **painless ulcer** at site of entry (genitals, anus, mouth). Heals spontaneously in 3–6 weeks. Regional lymphadenopathy (non-tender). 🚨 *Painlessness is the trap — patients ignore it.*

SECONDARY
4–10 wks

Systemic Rash

Maculopapular rash on palms & soles (hallmark!), condyloma lata (moist warts in skin folds), mucous patches, generalized lymphadenopathy, fever, malaise, hair loss in patches ("moth-eaten"), sore throat. Highly contagious.

LATENT
variable

Asymptomatic Phase

No clinical signs but positive serology. Early latent (<1 yr) is contagious; late latent (>1 yr) is not sexually transmissible but can still cross the placenta. May last years to decades.

TERTIARY
3–30+ yrs

End-Organ Damage

Gummas (granulomas of skin/bone), **cardiovascular syphilis** (aortic aneurysm, aortic regurgitation), **neurosyphilis** (tabes dorsalis — ataxia, lightning pains; general paresis — dementia, personality change; Argyll Robertson pupil — accommodates but doesn't react to light).

RED FLAG — Congenital Syphilis

Crosses placenta any time after 16 weeks gestation. Signs: stillbirth, snuffles (rhinitis), saddle nose, Hutchinson teeth (notched), saber shins, "blueberry muffin" rash, hepatosplenomegaly. Screen ALL pregnant women.

4 Priority Nursing Interventions

ASSESS

Obtain detailed sexual history (partners, sites of exposure, last contact, condom use). Use non-judgmental, trauma-informed language.

COLLECT

Specimens: NAAT (preferred — urine, cervical, urethral, rectal, pharyngeal); for syphilis draw VDRL/RPR + treponemal test. Dark-field microscopy for chancre exudate.

ADMINISTER

Gonorrhea: Ceftriaxone 500 mg IM × 1 (1 g if >150 kg). **Syphilis:** Benzathine PCN G IM. Verify allergy status BEFORE giving.

MONITOR

For Jarisch-Herxheimer reaction (syphilis): fever, chills, headache, myalgia within 24 hr of penicillin. Self-limiting — give antipyretics, reassure, do NOT stop treatment.

REPORT

Both diseases are **REPORTABLE** to state/local public health. Notify per facility protocol. Mandated regardless of patient preference.

NOTIFY

Partner notification & expedited partner therapy (EPT) where legal. Encourage testing of all sexual partners in past 60 days (gonorrhea) or 90 days–1 yr (syphilis stage-dependent).

TEST

Screen for co-infection: HIV, chlamydia, hepatitis B & C. Patients with one STI are at high risk for others. Re-test for gonorrhea/chlamydia in 3 months.

EDUCATE

Abstain from sexual activity until 7 days after treatment AND symptoms resolved AND partners treated. Use barrier protection going forward.

⚡ **ABC PRIORITY — Disseminated/Septic Cases**

Disseminated gonococcal infection or syphilitic meningitis: Airway → Breathing → Circulation first. Sepsis bundle, IV fluids, IV antibiotics, monitor for septic shock before STI-specific teaching.

5 Pharmacology

Drug	Class / MOA	Indication / Dose	Nursing Considerations
Ceftriaxone (Rocephin)	3rd-gen cephalosporin; inhibits cell-wall synthesis	**Gonorrhea:** 500 mg IM × 1 (1 g if ≥150 kg). Treats all sites including pharyngeal.	Cross-sensitivity with PCN (~1–10%). Reconstitute with lidocaine for IM comfort. Z-track. Watch for anaphylaxis × 30 min post-dose.
Doxycycline	Tetracycline; protein-synthesis inhibitor	100 mg PO BID × 7 days — added if chlamydia not ruled out (very common co-infection).	Take with full glass of water, sit upright × 30 min (esophagitis). Avoid dairy, antacids, iron (↓ absorption). Photosensitivity. **CONTRAINDICATED in pregnancy & children <8 yr** (teeth staining, bone effects).
Benzathine PCN G (Bicillin L-A)	Penicillin; β-lactam cell-wall inhibitor	**Early syphilis** (primary/secondary/early latent): 2.4 million units IM × 1. **Late latent/tertiary:** 2.4 million units IM weekly × 3. **Neurosyphilis:** aqueous PCN G IV × 10–14 days.	Deep IM into ventrogluteal/dorsogluteal (large volume — divide). **Never IV — can be fatal.** Screen for PCN allergy; pregnant patients with allergy must be desensitized (penicillin is the ONLY effective drug in pregnancy). Anaphylaxis precautions.
Doxycycline (alt.)	Tetracycline	Syphilis alternative for non-pregnant PCN-allergic adults: 100 mg PO BID × 14 days (early) or × 28 days (late).	Not used in pregnancy or neurosyphilis. Same teaching as above.
Erythromycin / Tetracycline (ophthalmic)	Antibiotic ointment	Prophylaxis for ophthalmia neonatorum — given to ALL newborns within 1 hr of birth.	Apply ribbon to lower conjunctival sac, inner-to-outer canthus. Do not rinse. May cause transient blurred vision.

6 NCLEX Test Traps ⚠️

✗ COMMON WRONG ANSWER	✓ RIGHT ANSWER
"The chancre is painful, so the patient with syphilis will seek treatment early."	The chancre is **PAINLESS** — this is why syphilis often goes untreated and progresses. Painlessness = trap; teach patients to inspect for any new lesion.
✗ COMMON WRONG ANSWER	✓ RIGHT ANSWER
"Stop the penicillin — the patient has fever and chills 6 hours after the injection."	This is the **Jarisch-Herxheimer reaction** — release of endotoxins from dying spirochetes. Self-limiting (24 hr). Give antipyretics, fluids, reassure. **Do NOT discontinue treatment.**
✗ COMMON WRONG ANSWER	✓ RIGHT ANSWER
"A negative VDRL/RPR means the patient does not have syphilis."	Non-treponemal tests (VDRL/RPR) can be **falsely negative** in very early primary or late tertiary syphilis. Confirm with treponemal test (FTA-ABS, TP-PA) and clinical exam.
✗ COMMON WRONG ANSWER	✓ RIGHT ANSWER
"Give doxycycline to the pregnant woman with syphilis who reports a penicillin allergy."	**Penicillin is the ONLY drug that crosses the placenta to treat fetal syphilis.** A pregnant patient with PCN allergy must be **desensitized** and treated with penicillin. Doxycycline is teratogenic.
✗ COMMON WRONG ANSWER	✓ RIGHT ANSWER
"Wait until the patient consents before reporting the diagnosis."	Gonorrhea and syphilis are **mandated reportable diseases**. Public health reporting does NOT require patient consent. Confidentiality is maintained at the public health level.
✗ COMMON WRONG ANSWER	✓ RIGHT ANSWER
"Resume sexual activity once your symptoms go away."	Abstain until **ALL THREE**: (1) 7 days after treatment, (2) symptoms resolved, (3) all partners treated. Otherwise reinfection ("ping-pong") occurs.

✗ COMMON WRONG ANSWER	✓ RIGHT ANSWER
"A rash on the trunk only is classic for secondary syphilis."	Hallmark is the **maculopapular rash on the palms AND soles** — one of only a handful of conditions causing palm/sole rash (also Rocky Mountain spotted fever, hand-foot-and-mouth, Kawasaki).

7 Patient & Family Education

1. **Complete the full course** of antibiotics even if symptoms resolve. Skipping doses drives resistance — especially with gonorrhea.
2. **Abstain from sexual contact** for at least 7 days after treatment AND until partners are treated AND symptoms gone.
3. **All sexual partners must be tested and treated** — even if asymptomatic. Many cases (especially female gonorrhea) are silent.
4. **Use condoms consistently** with every partner, every act, for life. Condoms reduce but do not eliminate risk — chancres outside the covered area still transmit syphilis.
5. **Get screened for other STIs**: HIV, chlamydia, hepatitis B & C. Co-infection is very common.
6. **Return for test-of-cure** if pharyngeal gonorrhea, pregnant, or persistent symptoms. Repeat syphilis serology at 6 & 12 months to confirm response.
7. **Pregnant patients:** universal screening for syphilis at first visit, 28 weeks, and delivery. Untreated maternal syphilis can kill the fetus.
8. **Report any new lesion, rash, discharge, or pelvic pain** immediately. STIs can be reacquired — immunity is NOT developed.
9. **After penicillin IM:** expect possible fever/chills (Jarisch-Herxheimer) within 24 hr. Take acetaminophen, drink fluids, rest — this is normal & will pass.
10. **No shared blame, no shame.** STIs are medical conditions. Reframe disclosure to partners as caring, not accusatory.

8 Memory Boosters

🦠 Gonorrhea — "The CLAP"

Old street name for gonorrhea — use it to remember the management:

- **C** eftriaxone IM × 1 dose
- **L** ook for co-infection (chlamydia/HIV)
- **A** bstain & alert partners
- **P** ublic health report (mandatory)

🌀 Syphilis Stages — "Painless Chancre, Palms & Soles, Silent, Severe"

- **1°** Painless chancre
- **2°** Palms & Soles rash
- **3°** Silent (latent)
- **4°** Severe (gummas, heart, brain)

💊 Neurosyphilis Triad — "TAP"

- **T** abes dorsalis (ataxia, lightning pains)
- **A** rgyll Robertson pupil
- **P** aresis (general — dementia, personality change)

👶 Congenital Syphilis — "5 S's"

- **S** nuffles (rhinitis)
- **S** addle nose
- **S** aber shins
- **S** tillbirth risk
- **S** kin rash (blueberry muffin)

🎯 Pattern Recognition Quick-Hits

- **"Painless ulcer"** on genitals → think SYPHILIS (chancre)
- **"Painful ulcer"** → think chancroid (not on this card but contrasts well) or HSV
- **"Yellow-green discharge"** → gonorrhea
- **"Rash on palms AND soles"** → secondary syphilis (also RMSF, Kawasaki)
- **"Fever, arthritis, pustules"** triad → disseminated gonorrhea (DGI)
- **"Cefriaxone + doxycycline"** dual therapy → think dual coverage for GC + chlamydia

- **"Pregnant + PCN allergy + syphilis"** → DESENSITIZE, do not substitute

⚖ NCJMM Clinical Judgment Scenario

📋 Case Study

A 24-year-old female presents to the women's health clinic with a 3-day history of yellow vaginal discharge, dysuria, and dull pelvic pain. She reports a new male sexual partner in the past month and inconsistent condom use. VS: T 38.1°C, HR 102, BP 118/74, RR 18. On exam, she has cervical motion tenderness and adnexal tenderness. She also mentions noticing "a sore" on her labia about 3 weeks ago that "went away on its own." She is concerned because she may want to become pregnant in the next year.

1

Recognize Cues

Yellow discharge + dysuria + pelvic pain + CMT + fever + tachycardia = possible **gonorrhea with PID**. Painless self-resolving genital ulcer 3 weeks ago = possible **primary syphilis chancre**. Reproductive goals = high stakes. New partner + inconsistent condoms = STI risk.

2

Analyze Cues

Two STIs likely co-occurring. Fever + tachycardia + CMT signals systemic inflammation — PID criteria met. Untreated PID → tubal scarring → **infertility & ectopic pregnancy**. Untreated syphilis in future pregnancy → congenital syphilis, stillbirth. Co-infection with chlamydia and HIV must be ruled out.

3

Prioritize Hypotheses

#1 Priority: PID secondary to gonorrhea/chlamydia (acute, threatens fertility). **#2:** Primary or early latent syphilis (will progress & affect future pregnancy). **#3:** HIV/hepatitis co-infection screening. **#4:** Pregnancy status (baseline βhCG before antibiotics).

4

Generate Solutions

Obtain NAAT (cervical/urine) for GC & chlamydia; VDRL/RPR + treponemal test; HIV, hep B & C, βhCG. Initiate empiric PID treatment: **Ceftriaxone 500 mg IM + Doxycycline 100 mg PO BID × 14 days + Metronidazole 500 mg PO BID × 14 days**. If syphilis confirmed: add benzathine PCN G IM. Partner notification & treatment. Public health report.

5

Take Action

Verify allergies → administer ceftriaxone IM (ventrogluteal, Z-track), start doxycycline + metronidazole. Provide trauma-informed counseling. Educate: abstain 7 days, no alcohol with metronidazole, full course of doxycycline upright with water. Schedule benzathine PCN once syphilis confirmed. Arrange follow-up: 72 hr (PID response), 3 mo (re-test GC/CT), 6 & 12 mo (syphilis serology). Mandated reporting completed.

6

Evaluate Outcomes

Expected at 72 hr: ↓ pelvic pain, afebrile, ↓ HR, ↓ discharge. **Expected at 2 wk:** symptom-free, partners treated, abstinence maintained. **Expected at 6 mo:** RPR titer ↓ 4-fold (cure indicator); GC/CT NAAT negative on re-test. **If no improvement in 72 hr:** reassess — inpatient IV therapy for PID, evaluate for tubo-ovarian abscess.