

Syphilis Evidence Brief

HIV/Syphilis Dual Testing and Benzathine Penicillin G

The Problem

- Syphilis causes **390,000+** adverse outcomes from congenital syphilis annually, including **150,000** stillbirths and **70,000** neonatal deaths.¹
- The global congenital syphilis case rate rose from **473 to 523 per 100,000** live births between 2016 and 2022.²
- **53%** of adverse outcomes from congenital syphilis occur in women who attended ANC but were never tested for syphilis.³
- Women living with HIV who also have syphilis face approximately **2.7 times** the risk of transmitting HIV to their child compared to HIV-positive women without syphilis.⁴

The Solution

HIV/Syphilis Dual Test

- One fingerstick, 20-minute result
- Same ANC visit, same health worker
- \$0.84/test – \$0.04 more than single HIV test
- Multiple WHO-prequalified brands

Benzathine Penicillin G

- Single IM injection, same-day treatment
 - \$0.39–\$3.19/dose (UNICEF Supply Catalogue)
- Blencowe et al., 2011:
- 82% reduction in stillbirths
 - 97% reduction in congenital syphilis
 - 80% reduction in neonatal deaths
 - 64% reduction in preterm births

Evidence of Efficacy

Study	Key Finding
Betrán et al., 2018 <i>Stepped-wedge RCT, Mozambique</i>	Syphilis screening: 65.7% → 95.5% (aOR: 23.50, 99% CI 20.56–26.86, p<0.0001). Treatment: 60.8% → 86.2% (aOR: 2.49, 99% CI 1.38–4.51, p<0.024).
Althabe et al., 2019 <i>Cluster RCT, DRC & Zambia</i>	Screening: 99.9% with behavioral support vs 93.8% with supplies only (absolute difference 6.1%, 95% CI 1.1–14.1, p=0.00092). Treatment: 100% vs 43.2% in control clinics (absolute difference 56.8%, 95% CI 12.8–99.0, p=0.0028).
Bahemuka et al., 2025 <i>Before-after study, Uganda</i>	Syphilis testing: 49.1% → 84.0% following dual test introduction (RR 1.71, 95% CI 1.64–1.78, p<0.001).
MedAccess/CHAI, 2026 <i>Global market data</i>	31M+ pregnant women tested in 60+ LMICs by end of 2024. Over 90,000 stillbirths averted.

Cost-Effectiveness

Study	Key Finding
Silke et al., 2024	Lowest ICER of 14 GF-eligible interventions in 81 of 128 countries (63%).
Kuznik et al., 2013	\$2–\$48/DALY averted (avg \$11) across 43 SSA countries. Universal SSA screening (~\$20.8M/year) would prevent ~64,000 stillbirths annually.
Rodriguez et al., 2021	Cost-saving in all 4 countries modeled: Kenya –\$26, South Africa –\$559, Colombia –\$844, Ukraine –\$454 per pregnancy.
Bristow et al., 2016	Dual testing had the lowest cost and fewest DALYs of 4 ANC algorithms in Malawi. Cost-saving vs HIV-only testing in nearly all Monte Carlo simulations.
Kahn et al., 2014	~15:1 ROI: universal SSA screening costs ~\$20.8M/year against ~\$309M in annual global medical costs from untreated maternal syphilis.

GC8 Strategic Fit

The **WHO Triple Elimination Initiative** calls for 95% syphilis testing and 95% treatment coverage among pregnant women by 2030, alongside equivalent targets for HIV and hepatitis B. GC8 is the last full funding cycle before WHO's 2030 validation assessment. Countries that scale dual testing through GC8 build the coverage trajectory required for elimination certification.

The **GC8 HIV Information Note** explicitly endorses the dual HIV/syphilis rapid diagnostic test as the recommended first-line test in ANC settings.

Note on Triple Tests

HIV/syphilis/hepatitis B triple rapid diagnostic tests are beginning to enter the market⁵ at a unit price of \$2.60. Countries with significant antenatal hepatitis B screening gaps may find a triple test well-suited to their context. Dual and triple tests are not mutually exclusive. A mixed procurement approach is viable and should be evaluated against country epidemiology, available products, and budget. Countries should monitor triple test availability through the WHO prequalification database and UNICEF Supply Catalogue as the market develops.

¹ WHO. Mother-to-child transmission of syphilis. Geneva: WHO; 2024.

² WHO. Implementing the global health sector strategies on HIV, viral hepatitis and STIs, 2022–2030: report on progress and gaps. Geneva: WHO; 2024.

³ WHO. Mother-to-child transmission of syphilis. Geneva: WHO; 2024.

⁴ Mwapasa V, et al. AIDS. 2006;20(14):1869–77.

⁵ See CHAI's market memo at <https://www.clintonhealthaccess.org/wp-content/uploads/2026/03/CHAI-Integrated-Screening-Market-Memo-March-2026.pdf>