



# CQUIN Differentiated MCH Workshop

May 25-27, 2021

Towards a dual return on investment -  
Integrating Syphilis into HIV PMTCT Programs

Lee Pyne-Mercier

Bill & Melinda Gates Foundation

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HIV Learning Network

The CQUIN Project for Differentiated Service Delivery

# HIV and congenital syphilis share many factors but differ in resources and global attention

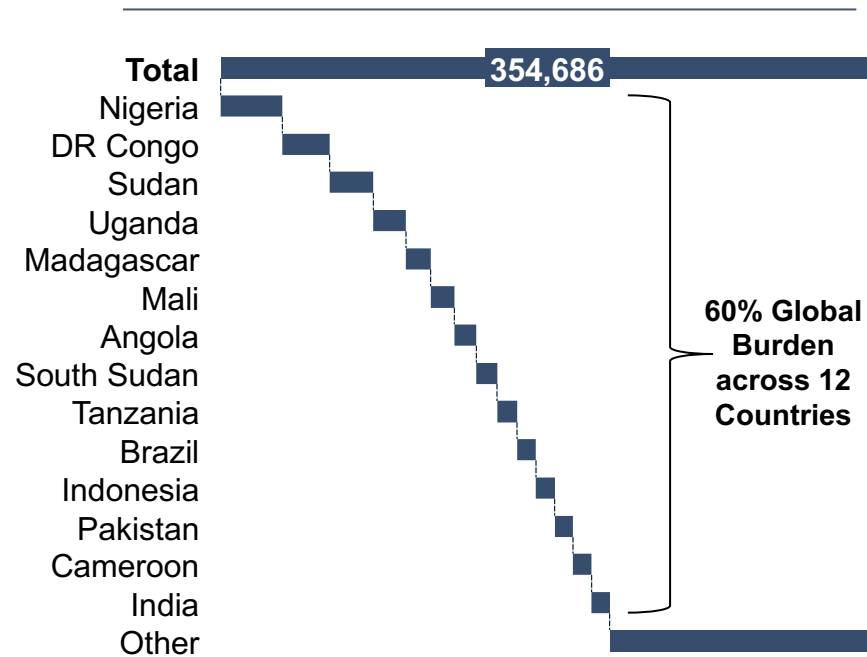
- 350K vertical transmissions per year
- 40% of women screened in pregnancy
- Cheap, single dose cure in pregnancy
- Despite burden, no global movement/attention
- Pediatric treatment very difficult
- Falls between cracks of MNH and STD communities
- Highly stigmatized condition
- 40% decrease in cases since 2008 (largely driven by India and Indonesia)

- 160K vertical transmissions per year
- 81% of births protected by PMTCT
- Lifelong treatment required
- Strong global movement to end the HIV epidemic
- Pediatric treatment is feasible
- Focused agencies and programs – PEPFAR, GFATM
- Still stigmatized but improving
- 41% decrease in cases since 2010

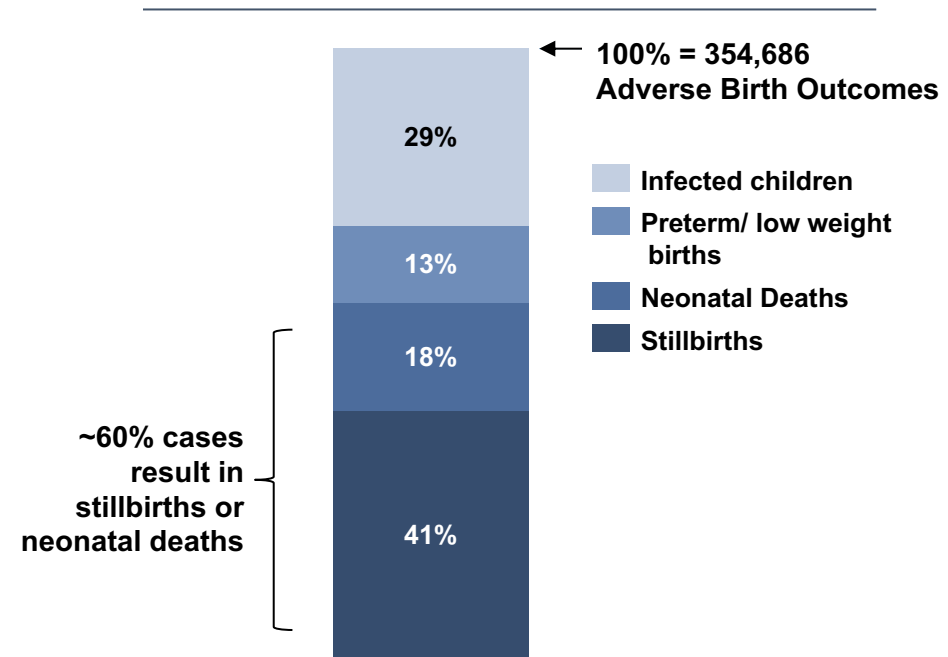
There are important synergies with HIV. Syphilis infection in pregnancy increases risk of HIV transmission by over 2.5 times. (Mwapasa)

# Annually ~355k adverse birth outcomes occur due to syphilis, even though testing and treatment is simple, affordable, and effective

Estimated Number of Adverse Birth Outcomes (2016)



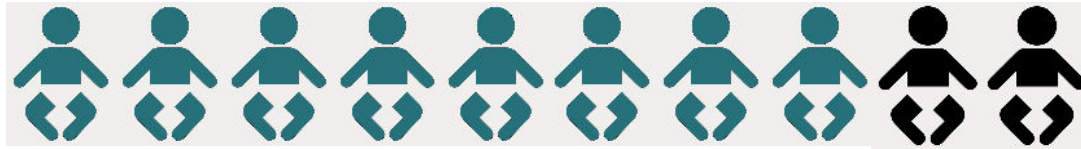
Breakdown of Adverse Birth Outcomes (2016)



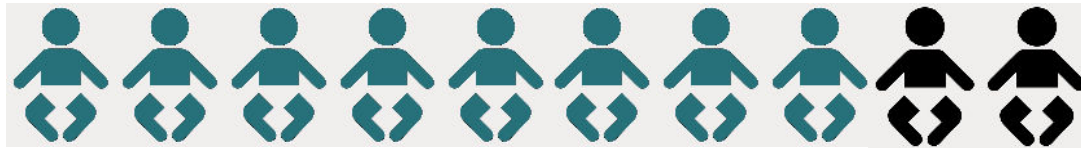
**Syphilis is the second leading infectious cause of stillbirths globally;  
11% of stillbirths in sub-Saharan Africa (8% worldwide) are syphilis attributable**

# Benzathine penicillin-G is highly effective in eliminating the risk of maternal syphilis to children

A single injection of penicillin, ideally given before the 3<sup>rd</sup> trimester can avert:



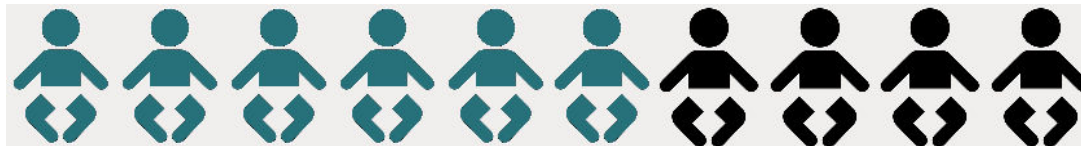
82% of fetal deaths



80% of neonatal deaths



96% of congenital syphilis cases



64% of preterm births

Source: Blencowe H, Cousens S, Kamb M, Berman S, Lawn JE. (2011) Lives Saved Tool supplement detection and treatment of syphilis in pregnancy to reduce syphilis-related stillbirths and neonatal mortality. *BMC Public Health*. 11(Supple 3): S9.

The majority of existing adverse outcomes occur among women who attend ANC *but are never tested*.

21%

of adverse outcomes occur among women who **do not attend antenatal care**

57%

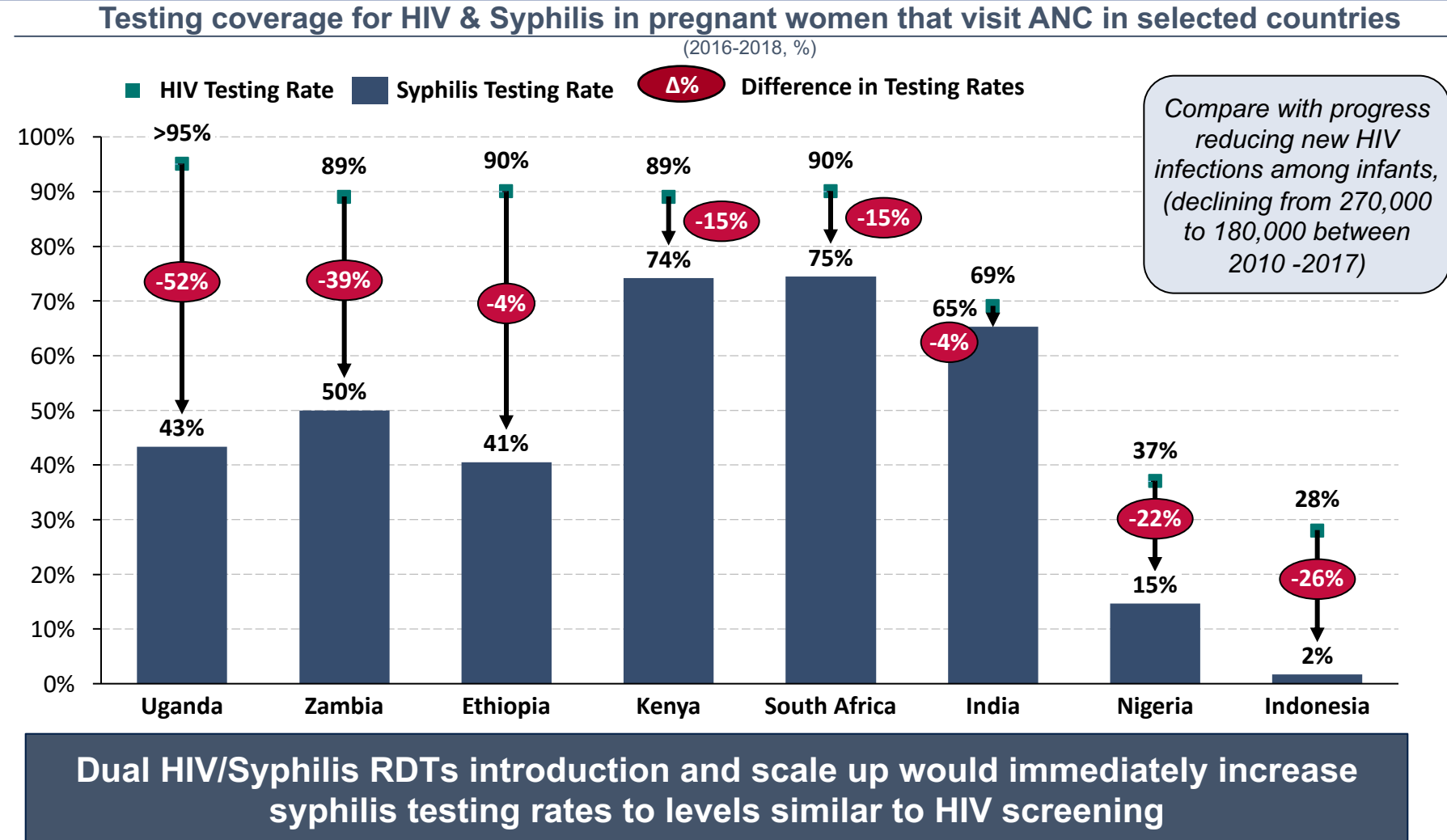
of adverse outcomes resulting from syphilis occur among women who **attend antenatal care but are never tested**

16%

of adverse outcomes resulting from syphilis occur among women who **test positive but are never treated**

Source: Korenromp EL, Rowley J, Alonso M, Mello MB, Wijesooriya NS, Mahlane SG, et al. (2019) Global burden of maternal and congenital syphilis and associated adverse birth outcomes -- Estimates for 2016 and progress since 2012. *PLoS ONE*. 14(2): e0211720.

# Screening for maternal syphilis during antenatal care is consistently low across countries, especially compared to testing rates for HIV



# Syphilis screening and treatment is affordable and cost saving

marginal cost of dual  
HIV/syphilis rapid test

\$0.40 - \$0.70

+

one dose of benzathine  
penicillin-G

\$0.77 - \$1.92

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total cost of screening and treating  
a pregnant women with active  
syphilis

\$1.17 - \$2.62

> [Lancet Glob Health](#). 2021 Jan;9(1):e61-e71. doi: 10.1016/S2214-109X(20)30395-8. Epub 2020 Nov 20.

**Cost-effectiveness of dual maternal HIV and syphilis testing strategies in high and low HIV prevalence countries: a modelling study**

Recent modeling study in South Africa, Kenya, Columbia, and Ukraine showed that 'routinely offering testing at the first antenatal care visit with a dual rapid diagnosis test was cost-saving compared with the base case (syphilis RPR + HIV single RDT) in all four countries'

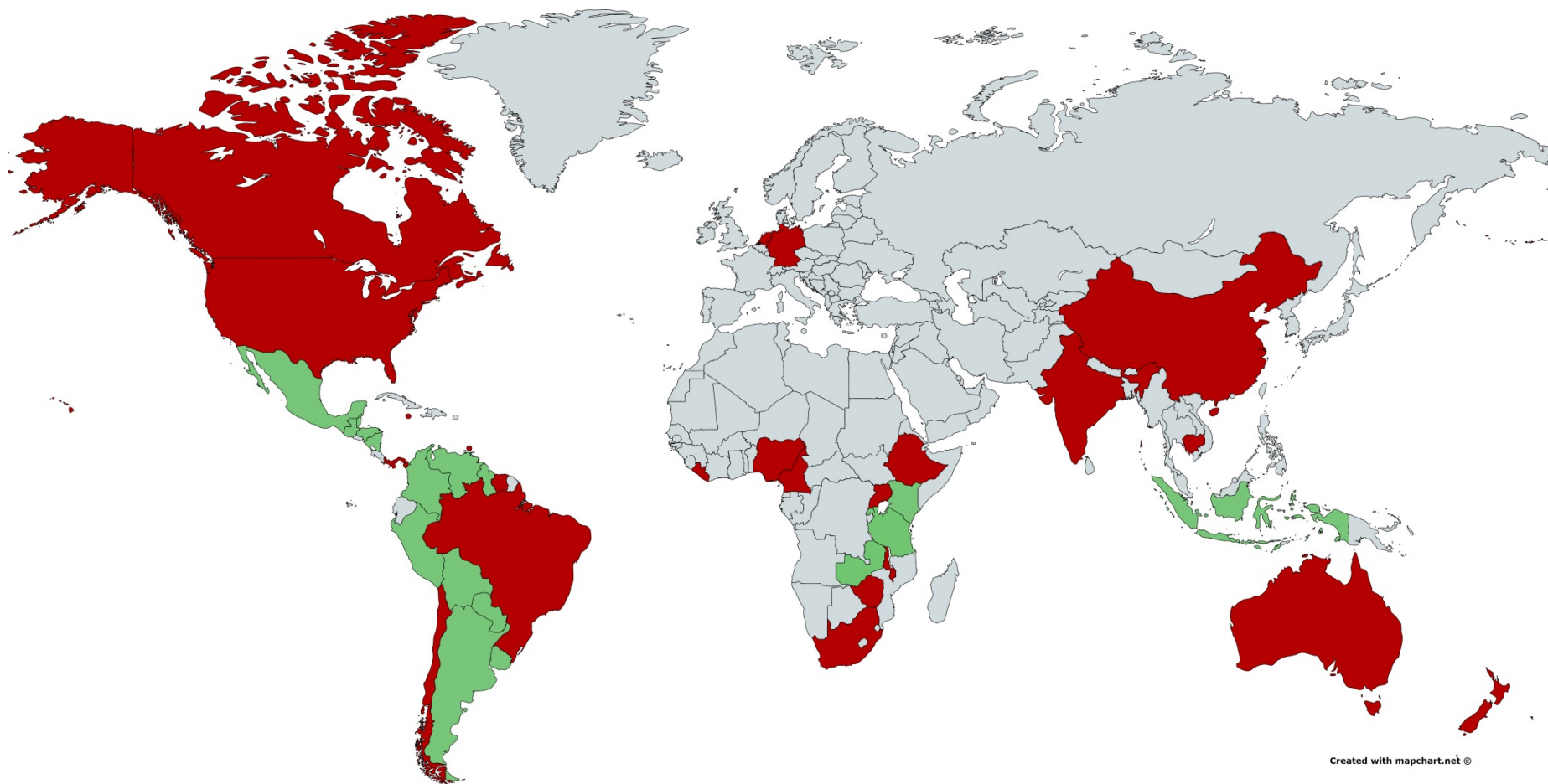
## Sources:

CHAI; The dual test costs between \$1.20 and \$1.50 whereas HIV-only screening tests cost approx. \$0.80. Therefore, the marginal cost to transition from HIV-single testing to HIV/syphilis dual testing is between \$0.40 and \$0.70.

Kuznik A, Lamorde M, Nyabigambo A, Manabe YC. (2013) Antenatal syphilis screening using point-of-care testing in Sub-Saharan African countries: A cost-effectiveness analysis. *PLoS Med*. 10(11): e1001545.

Rodriguez, et al. Cost-effectiveness of dual maternal HIV and syphilis testing strategies in high and low HIV prevalence countries: a modelling study. *Lancet GH*, 2021 Jan;9(1):e61-e71. doi: 10.1016/S2214-109X(20)30395-8

# Stock outs and shortages of benzathine penicillin brought short-lived attention to congenital syphilis in 2014-2016



■ Stock out/ shortage reported    
 ■ No confirmed stock out    
 ■ No data