



**23RD IUSTI
WORLD CONGRESS**

ELEPHANT HILLS RESORT, VICTORIA FALLS, ZIMBABWE | 4 - 7 SEPTEMBER 2022

CONFRONTING INEQUITIES IN STI PREVENTION, DIAGNOSTICS AND CARE



Dr Mike Chaponda

*Tropical Diseases Research Centre
Ndola, Zambia*

Prevalence of curable sexually transmitted and reproductive tract infections among pregnant women attending antenatal care in Nchelenge, Zambia



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Disclosure

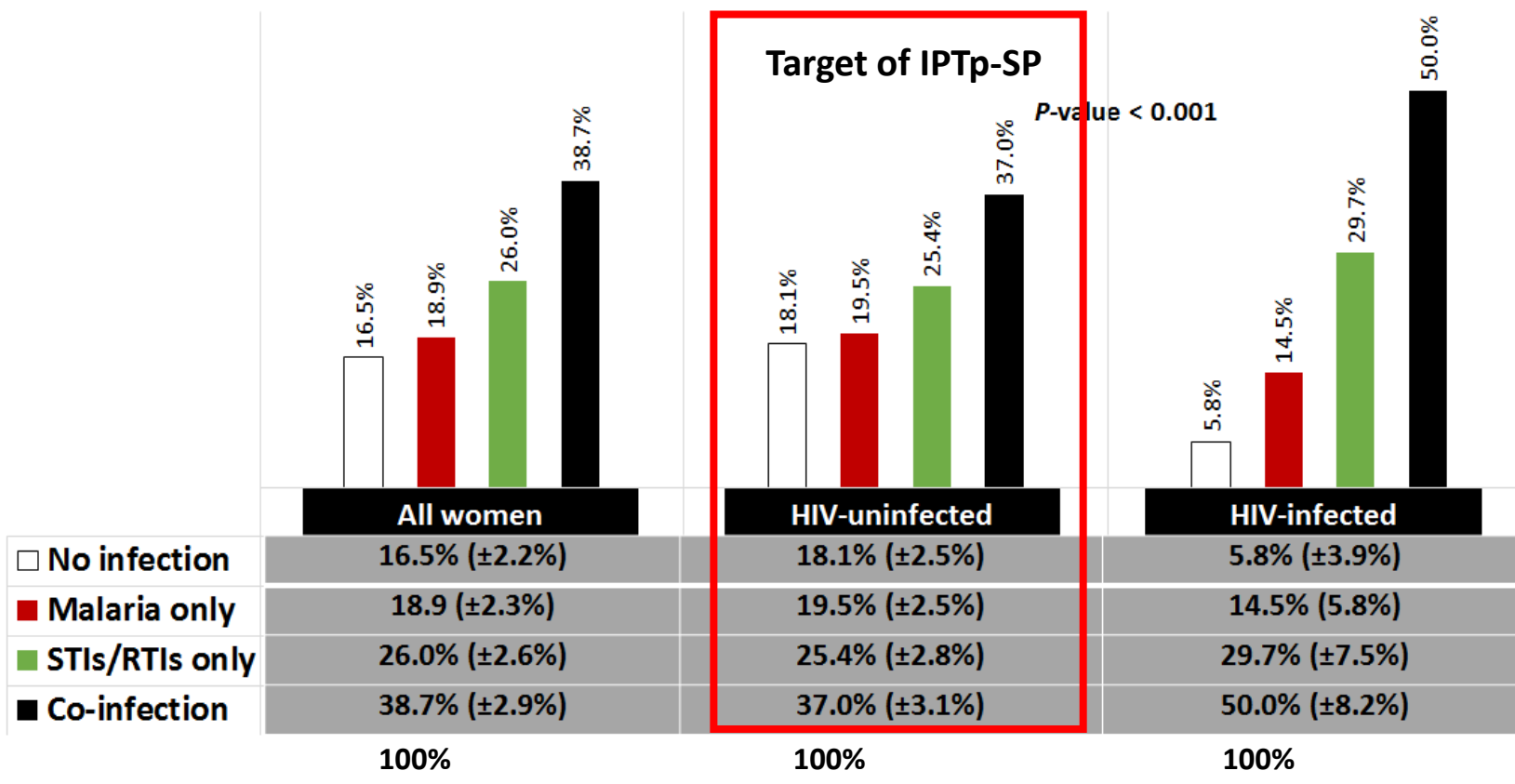


Background

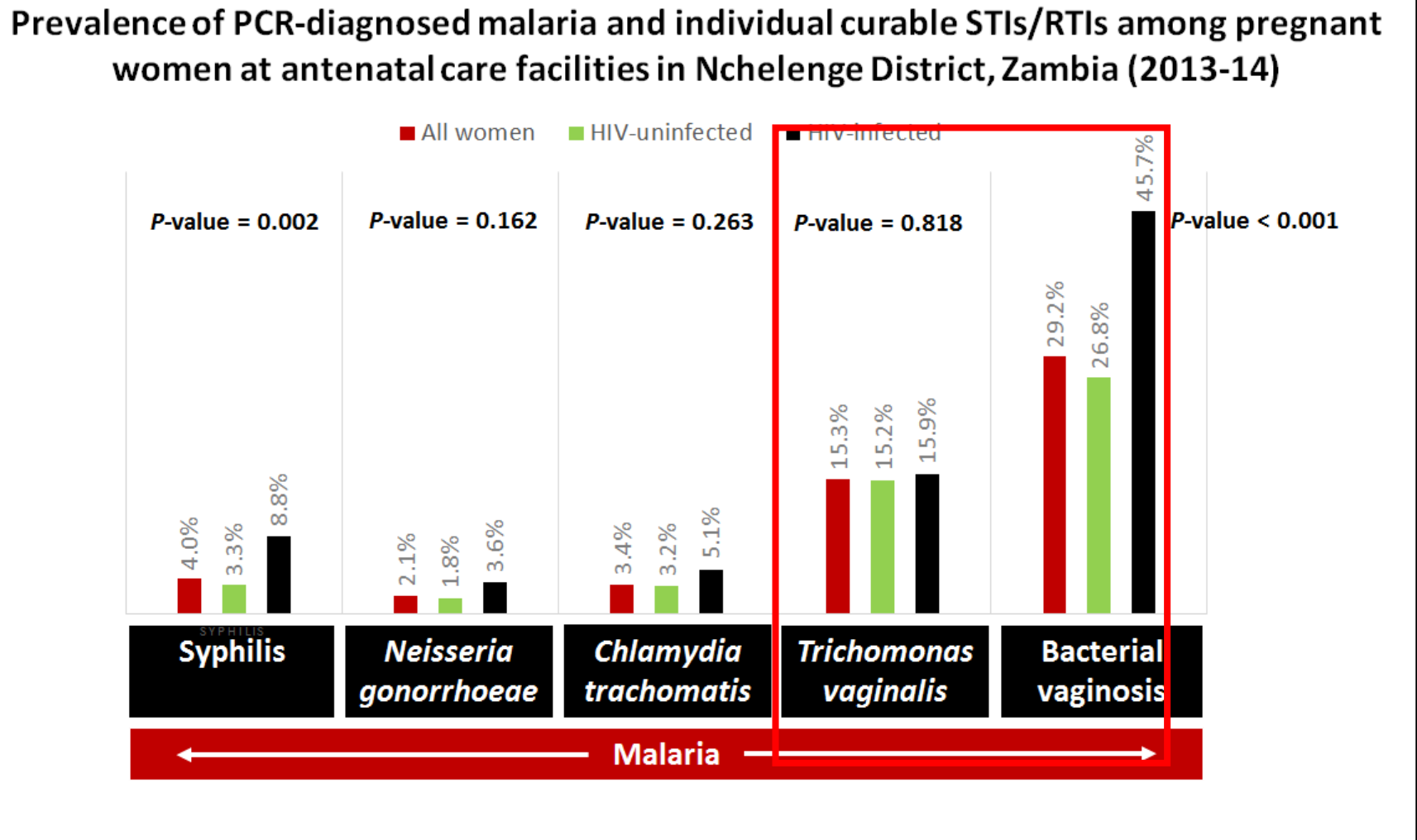


- Nchelenge District is in northern Zambia in the marshlands of Luapula Province along Lake Mweru and shares an international border with the Democratic Republic of Congo.
- Estimated population of 200,000.
- The area is heterogeneous, with a densely populated urban area along the lake and farmland located further inland.
- However, the population is mobile, traveling between the lake for the fishing season and inland for farming, with a fishing ban in effect from 1st December to 28th February

Prevalence of PCR-diagnosed malaria and any curable STI/RTI co-infection among pregnant women at antenatal care facilities in Nchelenge District, Zambia (2013-14)



Chaponda EB, Chico RM, Bruce J, et al. Malarial Infection and Curable Sexually Transmitted and Reproductive Tract Infections among Pregnant Women in a Rural District of Zambia. *American Journal of Tropical Medicine and Hygiene*, Volume 95, Issue 5, Nov 2016, pp. 1069-1076



Chaponda EB, Chico RM, Bruce J, et al. Malarial Infection and Curable Sexually Transmitted and Reproductive Tract Infections among Pregnant Women in a Rural District of Zambia. *American Journal of Tropical Medicine and Hygiene*, Volume 95, Issue 5, Nov 2016, pp. 1069-1076

ASPIRE Trial

Aiming for Safe Pregnancies by Reducing Malaria and Infections of the Reproductive Tract

ClinicalTrial.gov: NCT04189744



Design: 3-arm, parallel, partially placebo-controlled, individually randomised, phase-3, superiority trial of pregnant women (N=5,436) in Nchelenge District of Zambia

Eligibility criteria: HIV-negative pregnant women attending for antenatal care between 16 and 28 weeks' gestation inclusive assessed by ultrasound

Visits: Monthly antenatal care visits until delivery; Day 28 post-partum visit



Rx Groups and Primary Outcome



Rx Groups

Group 1: Monthly sulfadoxine-pyrimethamine plus placebo metronidazole

Group 2: Monthly sulfadoxine-pyrimethamine plus active metronidazole

Group 3: Monthly dihydroartemisin-piperaquine plus metronidazole (visit 1 and 2 only)

All women receive syndromic treatment of STIs/RTIs throughout the antenatal period

SP = 3 tablets each containing 500mg sulphadoxine and 25mg pyrimethamine (Day 0)

MTZ = 4 tablets each containing 500mg as directly observed therapy (Day 0)

DP = 3 tablets of 40mg of dihydroartemisinin and 320mg of piperaquine (Days 0, 1, 2)

Primary Outcome

Adverse pregnancy outcome defined as the composite of foetal loss (spontaneous abortion or stillbirth), or singleton live births born small-for-gestational age (SGA), or with low birthweight (LBW), or preterm (PT) (SGA-LBW-PT), or subsequent neonatal death by day 28.

Diagnosis of syphilis



- Rapid plasma reagin (RPR) (Omega Diagnostics Limited, Alva, Scotland, UK) conducted at the district hospital laboratory.
- Plasma aliquots of RPR-positive samples stored at -80°C for transportation to National STI Reference Laboratory at TDRC.
- RPR seropositive samples transported by dry shipper at approx -190°C .
- *Treponema pallidum* haemagglutination assay (TPHA) has been conducted on half of the RPR seropositive samples so far at National Reference laboratory with (Atlas Medical, Blankenfelde-Mahlow, Germany) for confirmation.

Diagnosis of chlamydia, gonorrhoea and trichomoniasis



- DNA extracted from swabs collected from study participants using the Zymo research Quick-DNA™ Miniprep Kit Cat D3025.
- Internal control and primer sequences were supplied by Inqaba Biotechnical Industries (Pty) Ltd (Pretoria, South Africa)
- Participant samples, 25 µl PCR reactions were prepared consisting of™ SYBR Green master mix
- PCR amplification performed on the Applied Biosystems® (Abs 7500 fast) using a touchdown PCR protocol



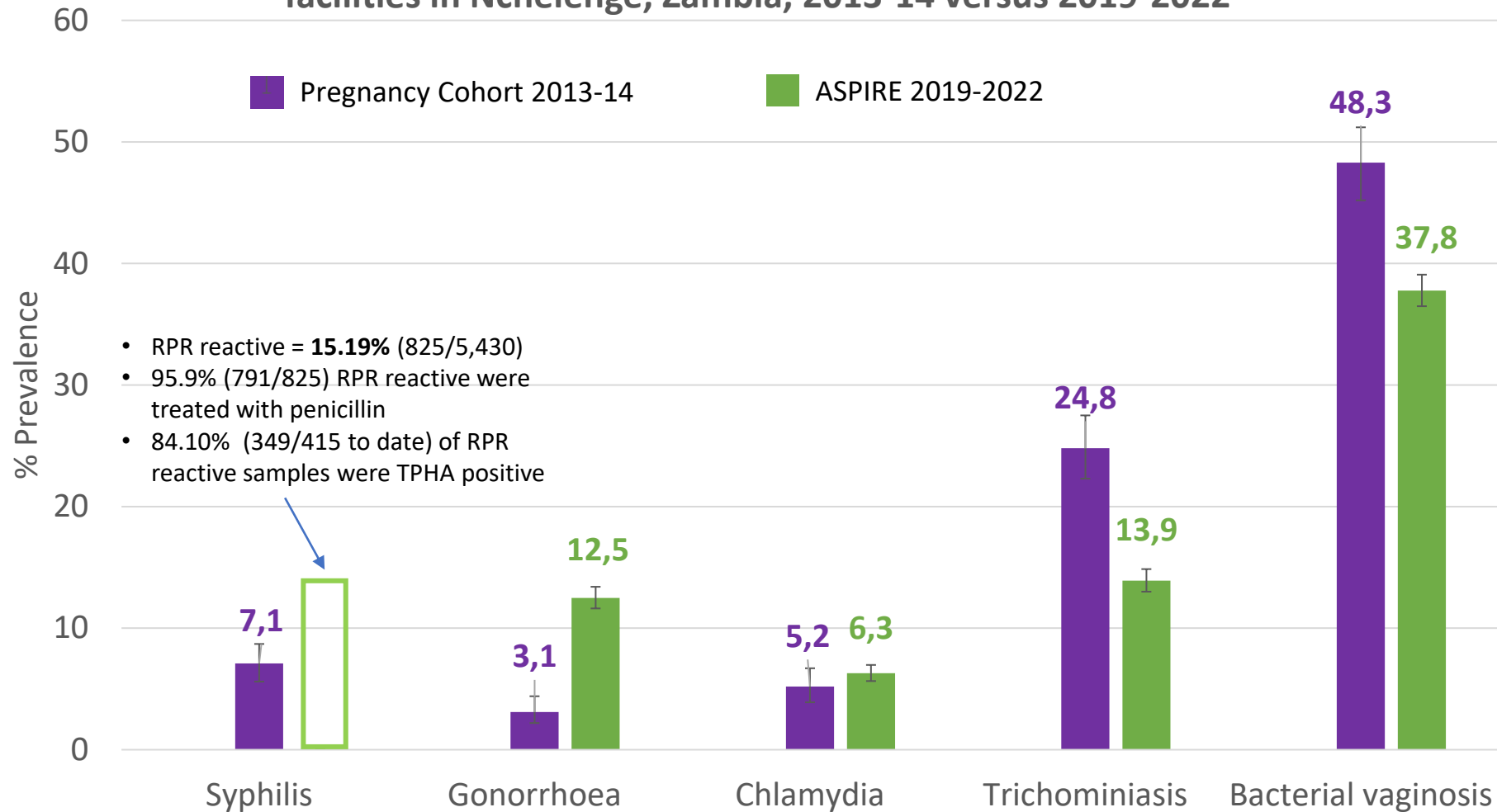
Diagnosis of bacterial vaginosis

- Vaginal smear samples for BV diagnosis were air dried and Gram stained using crystal violet as the primary stain and safranin as a counter stain.
- Gram staining and 1st slide reading were done at the district hospital laboratory. Diagnosis was based on Nugent criteria.
- Slides were transported to TDRC in Ndola for 2nd blinded reading.
- Any disagreements in Nugent scoring were resolved by a 3rd reader.



Results

Prevalence estimates of curable STIs/RTIs among pregnant women at ANC facilities in Nchelenge, Zambia, 2013-14 versus 2019-2022



Conclusions



- Curable STIs/RTIs were common among pregnant women in this low-resource setting.
- POC tests are urgently needed in this antenatal care setting to diagnose the STIs/RTIs, especially the asymptomatic infections which contribute significantly to adverse pregnancy outcomes.
- Syndromic management of STIs/RTIs, despite being useful, does not go far enough to diagnose and treat infections in resource limited settings.



Thanks to...



Matthew Chico-LSHTM
Daniel Chandramohan-LSHTM
Mike Chavonda-TDRC
Modest Mulenga-TDRC
Sebastian Hachizovu-TDRC
Michael Nambozi-TDRC
Jonathan Gwasupika-TDRC
Enesia Chavonda Ngulube- UNZA
Ms Ludovica Ghilardi-LSHTM
Philippe Mayaud-LSHTM
Suzanna Francis-LSHTM

