#1175: Low Treatment Rates and Associated Factors Among Pregnant Women with Syphilis in Zambia

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BACKGROUND

- Syphilis in pregnancy is common in Africa with prevalence as high as 10%.

- WHO recommends universal syphilis screening and benzathine penicillin G treatment at the first antenatal clinic (ANC) visit in high prevalence areas.

- Global stockouts of penicillin G occur frequently.

STUDY GOAL

To document treatment rates and factors associated with lack of treatment among pregnant women with syphilis in Zambia.
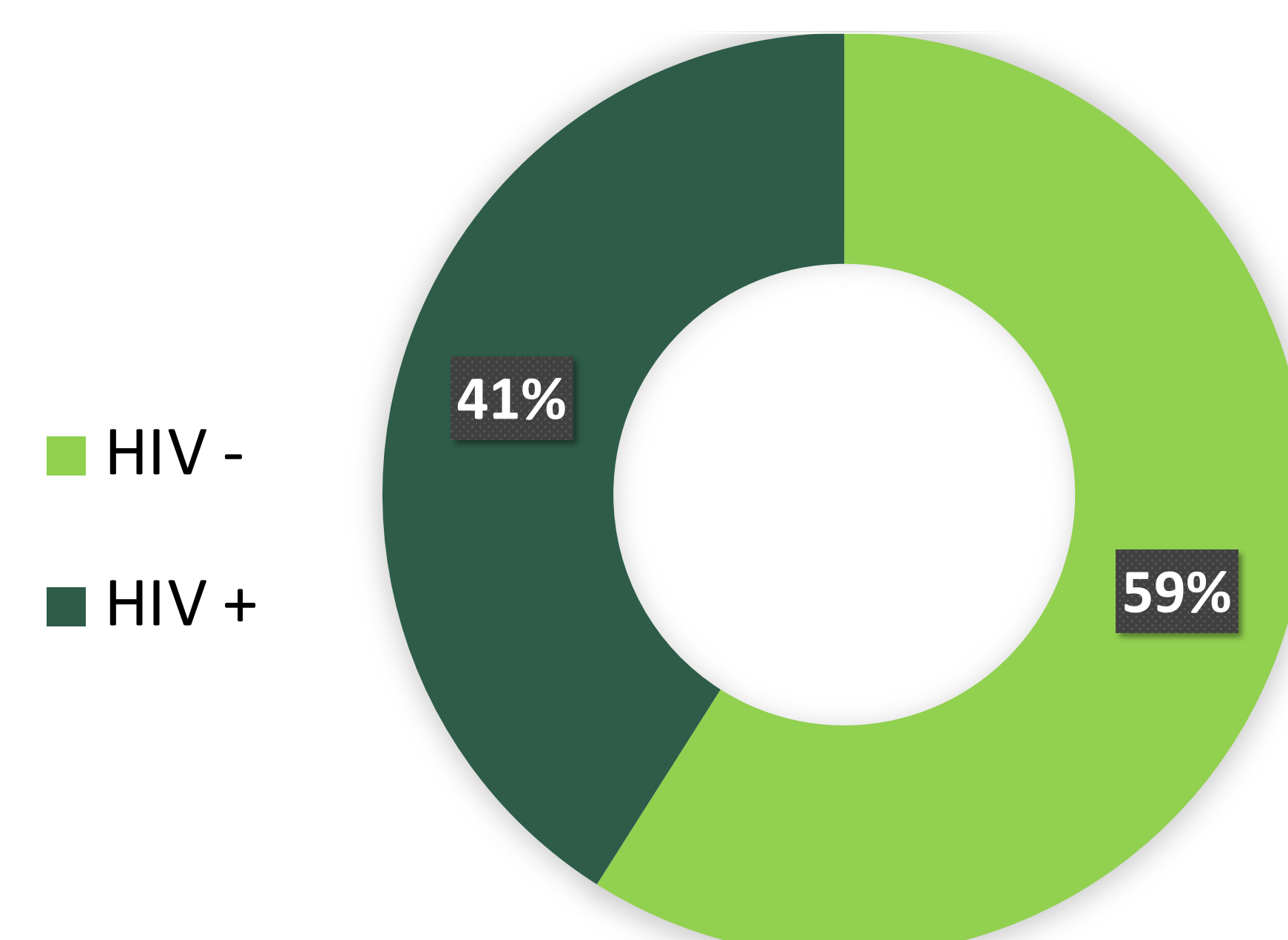
STUDY DESIGN

- Our **retrospective cohort study** analyzed data from pregnant women who sought care in 10 public ANC clinics in Lusaka, Zambia during 2018-2019 and tested positive for syphilis.

- Patient characteristics were compared across treatment status using Pearson Chi-Square Test for categorical variables.

- Simple logistic models with treatment status as the binary outcome were conducted to evaluate potential factors associated with lack of syphilis treatment in pregnancy.

- A multivariable logistic model was performed and a 2-sided P < 0.05 was accepted as statistically significant.

Table 1: Characteristics of Pregnant Women with Syphilis According to Treatment Status

Variable	Treatment n=577; median (IQR) or n (%)	No Documented Treatment n=786; median (IQR) or n (%)	Total n=1363; median (IQR) or n (%)	p value
Maternal Age Categories				0.71
16-19	28 (4.9%)	48 (6.2%)	76 (5.6%)	
20-24	158 (27.4%)	195 (25.2%)	353 (26.2%)	
24-29	176 (30.6%)	244 (31.6%)	420 (31.1%)	
30-34	117 (20.3%)	149 (19.3%)	266 (19.7%)	
35+	97 (16.8)	137 (17.2%)	234 (17.4%)	
Parity				0.51
0	129 (22.4%)	146 (19.1%)	275 (20.5%)	
1-2	285 (49.5%)	390 (50.9%)	675 (50.3%)	
3-4	129 (22.4%)	183 (23.9%)	312 (23.2%)	
5+	33 (5.7%)	47 (6.1)	80 (6.0%)	
Marital Status				0.76
Married/Living with Partner	495 (88.2%)	633 (87.7%)	1128 (87.9%)	
Single	66 (11.8%)	89 (12.3%)	155 (12.1%)	
HIV Status				0.28
Negative	338 (59.2%)	437 (56.2%)	775 (57.5%)	
Positive	233 (40.8%)	340 (43.8%)	573 (42.5%)	
Trimester at Entry to Care				<0.001
First (4-14 weeks)	114 (26.8%)	105 (18.9%)	219 (22.3%)	
Second (15-28 weeks)	194 (45.5%)	242 (43.4%)	436 (44.3%)	
Third (> 28 weeks)	118 (27.7%)	210 (37.7%)	328 (33.4%)	
Calendar Year at Entry to Care				<0.001
2018	429 (74.5%)	464 (59.5%)	893(65.9%)	
2019	147 (25.5%)	316 (40.5%)	463 (34.1%)	
Facility Type				0.99
Primary Health Clinic	278 (48.2%)	379 (48.2%)	657 (48.2%)	
First Level Hospital	299 (51.8%)	407 (51.8%)	706 (51.8%)	
Syphilis Test at Entry to Care	555 (96.2%)	748 (95.9%)	1303 (96.0%)	0.79

Table 2: Factors Associated with Lack of Syphilis Treatment in Pregnancy

Variable	Unadjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Maternal Age Categories		0.72		0.82
16-19	1.35 (0.80,2.28)		1.46 (0.74,2.87)	
20-24	0.969 (0.70,1.34)		1.02 (0.65,1.58)	
24-29	1.089 (0.80,1.48)		1.02 (0.69,1.52)	
30-35+	1.109 (0.78,1.58)		1.00 (0.67,1.49)	
	REF			
Parity		0.51		0.11
0	0.80 (0.48,1.32)		0.73 (0.38,1.40)	
1-2	0.96 (0.60,1.54)		1.03 (0.58,1.82)	
3-4	1.0 (0.61,1.64)		1.24 (0.71,2.18)	
5+	REF			
Marital Status		0.76		
Married/Living with Partner	REF			
Single	0.95 (0.68,1.33)			
HIV Positive	1.13 (0.91,1.41)	0.28		
Trimester at Entry to Care		<0.001		0.04
First (4-13 weeks)	REF			
Second (14-27 weeks)	1.35 (0.98,1.88)		1.24 (0.88,1.75)	
Third (28+ weeks)	1.93 (1.36,2.74)		1.59 (1.10,2.30)	
Year at Entry to Care		<0.001		<0.001
2018	REF			
2019	1.99 (1.57,2.53)		2.18 (1.70,2.81)	
Facility Type		0.99		
Primary Health Clinic	1.002 (0.808, 1.242)			
First Level Hospital	Ref			
Syphilis Test at Entry to Care	0.927 (0.533,1.613)	0.79		

Figure 1: HIV Status Among Women Treated for Syphilis

HIV - 59%
HIV + 41%

Figure 2: Timing of Entry to Prenatal Care and Syphilis Treatment Status

	1st Trimester	2nd Trimester	3rd Trimester
Treated	27%	46%	28%
Untreated	19%	43%	38%
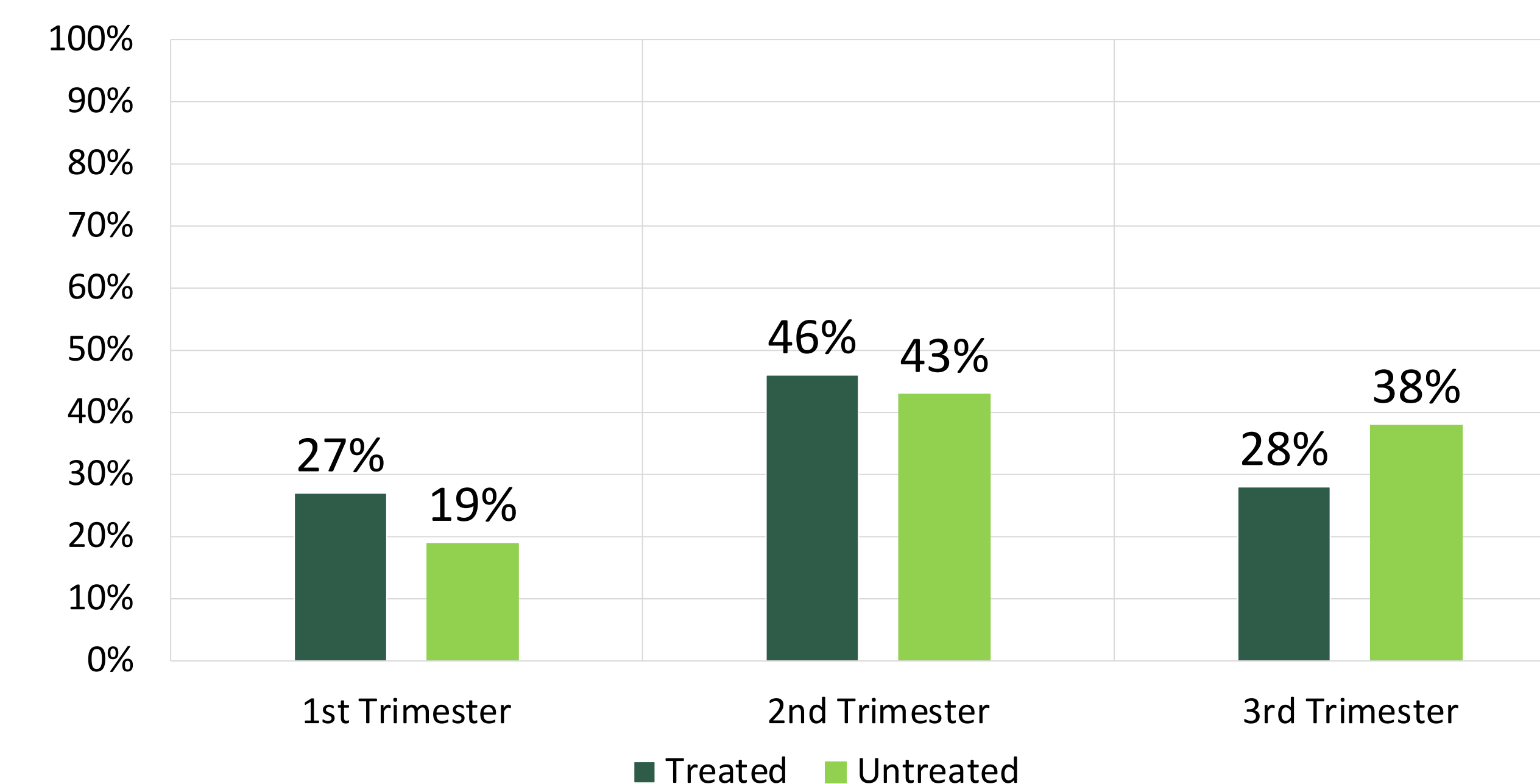
RESULTS

- Among 28,480 pregnant women screened for syphilis, 5% (n=1363) tested positive.

- Among those with syphilis, median age was 27 years, 21% of women were nulliparous and 43% were living with HIV.

- Most women (72%) had their first ANC visit during the 2nd trimester; 96% were screened for syphilis at the first visit.

- The syphilis in pregnancy treatment rate was 42%.

- Trimester at entry to care was associated with a lack of syphilis treatment. Women in their third trimester were less likely to have received syphilis treatment (aOR 1.59; 95% CI 1.1-2.3; p<.05) when compared to women in their 1st and 2nd trimester.

- ANC entry in 2019 compared to 2018 (aOR 2.2; 95% CI 1.7-2.8; p<0.001) was associated with lack of syphilis treatment in pregnancy.

CONCLUSIONS

- Recommended penicillin treatment was only documented in 42% of cases.

- Facility type was not associated with lack of therapy.

- Pregnant women in the 1st trimester with syphilis at entry to care were more likely to have documented treatment.

- Novel approaches to ensure access to universal diagnosis and early treatment of syphilis among pregnant women in Zambia are urgently needed.