BACKGROUND
Increasing rates of co-infection between HIV and syphilis, and nefarious synergy issues with syphilis management
- Imperfect diagnostic test: difficult to differentiate false positive, treatment failure, serofoil, reinfecction
- Inconsistent guidelines for HIV-positive adults
- Prior studies conducted before widespread use of ART

METHODS
Patient Population
All patients in the Toronto General Hospital HIV Clinic with an abnormal syphilis serology from January 1, 2000 – January 1, 2017, n=532

RESULTS
Patient Demographics
| Age, median (IQR) | 42 (35.0, 48.0) |
| Caucasian, n (%) | 105 (57.1) |
| Male, n (%) | 189 (100) |
| MSM, n (%) | 158 (87.3) |
| CD4 count, median (IQR) | 443 (272, 609) |
| Log10 VL, median (IQR) | 1.69 (1.59, 4.14) |
| VL <= 50, n (%) | 90 (55.9) |
| On ART, n (%) | 141 (74.6) |
| Previous AIDS, n (%) | 52 (27.5) |
| Syphilis Episode, n (%) | 1:1 (1) |
| Treatment, n (%) | Benzathine IM x1 | 51 (27.0) |
| Benzathine IM x2-3 | 85 (45.0) |
| Benzathine IV | 40 (21.2) |

Follow-up per year, mean (IQR) | 3.26 (2.06, 4.89) |

Table 1: Demographics of the included 189 patients.

Figure 1. Distribution of baseline syphilis titers at time of diagnosis.

Figure 2. Kaplan Meier estimates generalized for interval censored data for time to reach a four-fold response and seroreversion from baseline RPR. The probability of achieving a four-fold decrease or a non-reactive RPR by year 1 was 0.95 (0.87, 0.98) and 0.29 (0.22, 0.38), respectively.

Clinical Correlates to Time to Adequate Serologic Response and Seroreversion

Univariable and multivariable proportional hazards models show that late latent syphilis is associated with a decreased likelihood of achieving a 4-fold response or seroreversion.

CONCLUSIONS
- Serologic response to syphilis treatment in HIV infected MSM was high
- By one year, the probability of achieving a 4-fold response was very high (0.95) but the probability of achieving seroreversion was low (0.29)
- Patients with late latent syphilis are less likely than patients with primary or secondary syphilis to reach a 4-fold response or seroreversion
- Serologic response and seroreversion was not impacted by CD4 count or VL suppression

LIMITATIONS
- Retrospective study
- Predominately MSM with their first episode of syphilis treated in an out-patient setting

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REFERENCES