



Follow-up of Military Blood Donors Who Screen Positive for Syphilis

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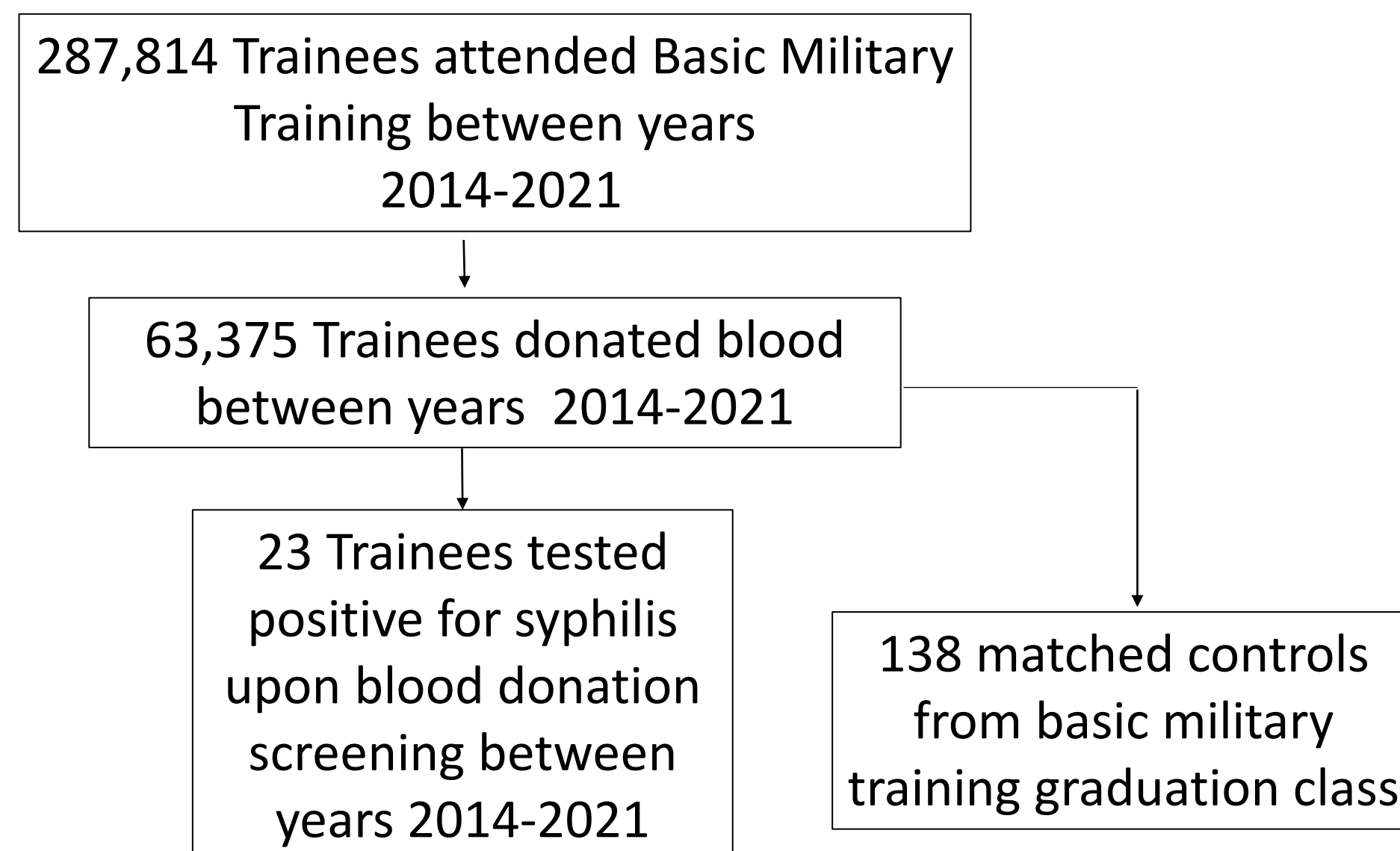
INTRODUCTION

- Syphilis is caused by *Treponema pallidum* and is considered a transfusion transmitted infection (TTI)
- To minimize TTI risk there is donor exclusion criteria and syphilis screening
- CDC guidelines recommend follow-up for 1+ years after diagnosis
- Syphilis correlates with high risk for future STIs in STI/HIV clinics, but risk is unknown in other settings
- The military is a large single payer system with universal access to follow up care
- Our study describes concomitant STI testing for basic military trainee blood donors who screen positive for syphilis as well as follow up evaluation and future STI risk

METHODS

- Gathered data from the Armed Services Blood Bank Center-San Antonio
- Identified positive syphilis tests between January 2014- September 2021
- Identified STI work-up and follow-up for positive cases:
 - Concomitant infection screening at time of diagnosis
 - Follow-up post-treatment RPR within one year
- Within trainees who tested positive for syphilis gathered matched controls
 - Negative controls were from blood donor list at a 6:1 ratio and were matched by sex and training graduation date
 - Identified those who started PrEP within 3 years
 - Identified those who tested positive for an STI within 3 years

FIGURE 1:



Schematic of Basic Military Trainees blood donors with syphilis between 2014 and 2021

RESULTS

Table 1:

Male sex – no. (%)	20 (87)
Female sex – no. (%)	3 (13)
Age at positivity-median (IQR)	21 (19-26)
Previous STD treatment – no. (%)	2 (9)
Previous Syphilis treatment – no. (%)	4 (17)
RPR Titer – no. (%)	
Not obtained	2 (9)
Non-reactive	7 (30)
1:1	1 (4)
1:2	2 (9)
1:4	7 (30)
1:16	1 (4)
1:32	3 (13)

Characteristics of 23 Blood Donors who Tested Positive for Syphilis

Table 2:

Additional GC/CT Urine - no. (%)	14 (61)
Additional GC/CT Pharyngeal - no. (%)	2 (9)
Additional GC/CT Rectal - no. (%)	1 (4)
Additional HCV Screening - no. (%)	14 (61)
Additional HBV Screening - no. (%)	14 (61)
HBV Vaccinated - no. (%)	22 (96)
HPV Vaccinated - no. (%)	8 (35)
Treatment PCN x 1 - no. (%)	7 (30)
Treatment PCN x 3 – no. (%)	15 (65)
Follow up syphilis test in one year – no. (%)	6 (26)

Follow Up Testing and Treatment of 23 Blood Donors who Tested Positive for Syphilis

Table 3:

	Syphilis positive (n=23)	Syphilis negative (n=138)	RR (95% CI)	p-value
Additional STI in next 3 years	5 (22%)	8(6%)	3.8 (1.3-10.5)	0.01
Starting PrEP in next 3 years	2 (9%)	0 (0%)	29.0 (1.4-584.8)	0.03

Relative risk of testing positive for additional STI or starting PrEP three years after blood donation among blood donors by presence or absence of syphilis infection upon donation

Table 4:

Organism (source/stage)	Syphilis positive (n=23)*	Syphilis negative (n=138)+	p-value
<i>N. gonorrhoeae</i> (urine)	2 (9%)	0	0.02
<i>C. trachomatis</i> (urine)	2 (9%)	7 (5%)	0.61
<i>T. pallidum</i> (primary)	1 (4%)	0	0.14
<i>T. pallidum</i> (secondary)	1 (4%)	0	0.14
Herpes simplex virus (genital)	0	3 (2%)	1

Additional sexually transmitted diseases in three years following blood donation in patients by presence of absence of syphilis at time of blood donation.

CONCLUSIONS

- Despite access to care and close follow-up military donors have low adherence to concomitant GC/CT screening and are frequently lost to follow-up with some not receiving post-treatment RPR testing
- There is an increased relative risk of testing positive for an additional STI and starting PrEP after screening positive for syphilis at time of blood donation

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