

Detection of *Treponema pallidum* at asymptomatic oral, anal, and vaginal sites in men and women reporting sexual contact with syphilis

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Introduction

- Recent studies have shown PCR can detect *T. pallidum* from mucosal sites (oral and anus) in the absence of syphilis lesions in confirmed syphilis cases.

Objective

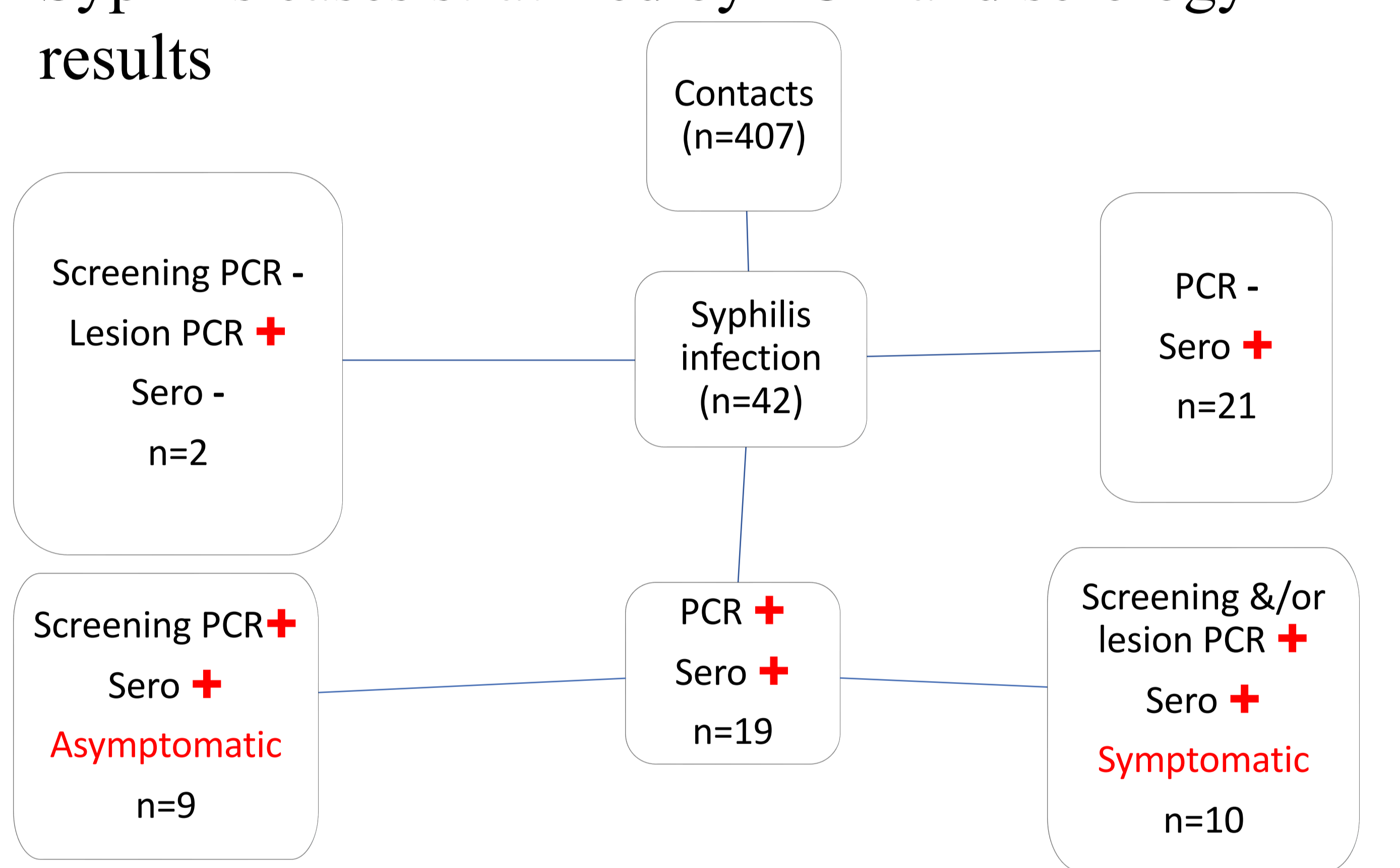
- To investigate whether PCR can detect early syphilis from mucosal sites without the syphilis lesions, before seroconversion, in syphilis contacts.

Results

- 407 contacts
- 42 (10%) syphilis infections
- MSM:33, Heterosexual men: 2, Heterosexual women: 5, bisexual men: 3



Syphilis cases stratified by PCR and serology results



Method

- Study period: November 2018 to March 2020
- Study population: sexual contacts of persons with syphilis infection attending Melbourne Sexual Health Centre
- Participants were asked to provide additional PCR tests from mucosal sites in addition to syphilis serology.
- “Screening PCR”: PCR tests at oral cavity, anus, and vagina with or without symptoms of syphilis.
- “Lesion PCR”: PCR tests at any lesion sites in syphilis contacts with symptoms and signs of syphilis

Screening PCR testing among syphilis contacts

All contacts	MSM	Women
• Oral rinse • Oral swab	• Anal swab	• Vaginal swab

Asymptomatic syphilis cases with positive screening PCR

Sex	Sexual orientation	Screening PCR positive sites	Current RPR	Last syphilis test
F	Heterosexual	Vagina	1:8	8 years
F	Heterosexual	Oral	1:128	No previous test
F	Heterosexual	Oral, vagina	1:16	No previous test
F	Heterosexual	Vagina	1:2	No previous test
M	Bisexual	Anus	Non-reactive	8 months
M	MSM	Anus	1:32	12 months
M	MSM	Oral	1:256	10 months
M	MSM	Oral	1:128	10 months
M	MSM	Oral, anus	1:32	2 months

Symptomatic syphilis cases with positive screening PCR with or without positive lesion PCR

Sex	Sexual orientation	Signs/symptoms	Screening PCR positive sites	Lesion PCR positive sites	Current RPR
F	Heterosexual	Oral ulcers	Oral		1:64
M	MSM	Anal ulcers	Anus		1:16
M	MSM	Body rash	Oral, anus		1:64
M	MSM	Body and genital rash	Oral, anus		1:128
M	MSM	Body rash	Anus		1:256
M	MSM	Tongue ulcer, scrotal rash	Oral, anus	Tongue, scrotum	1:32
M	MSM	Penile ulcers	Oral, anus	Penis	1:128

Conclusion

- We did not identify any syphilis cases with positive screening PCR before seroconversion.
- T. pallidum* PCR screening from mucosal sites (oral, anus, and vagina) may not have added benefit over the current screening using serology.
- A positive PCR from asymptomatic mucosal sites may help identify early infections in individuals who would otherwise be classified as having latent syphilis of unknown duration.