

Multiplex PCR testing of anogenital lesions for *Treponema pallidum* and *Herpes simplex virus* in primary care improves the detection of Primary Syphilis

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Introduction

- Primary syphilis is often misdiagnosed as herpes, even by sexual health physicians.
- Multipathogen NAAT testing of anogenital ulcers for herpes simplex virus (HSV) and *T. pallidum* may help ensure *T. pallidum* is not missed.
- The Speedx multipathogen NAAT assay has 100% sensitivity and 100% specificity for *T. pallidum* compared to in-house NAAT.

Objective

- To evaluate whether the use of multiplex PCR testing of anogenital lesions for *T. pallidum* and HSV in general practice improves the detection of primary syphilis.

Methods

- Between September 2022 and February 2023, multiplex PlexPCR VHS (Speedx) testing for *T. pallidum* and HSV type-1 and -2 was performed on all clinical specimens received from general practitioners across Victoria using the Melbourne Pathology laboratory network if HSV PCR testing of anogenital lesions was requested in a patient aged ≥ 18 , even if *T. pallidum* PCR was not requested.
- Multiplex PCR was also performed if testing for other STIs or *T. pallidum* PCR was requested.
- Clinics were made aware of this testing via a letter that included a link to an educational video on PCR testing for syphilis.

Results

- During the period, 2,324 multiplex tests were performed, 1,580 in women and 721 in men (gender not specified for 4 samples), 31 of which were positive for *T. pallidum*.
- Of the positive *T. pallidum* samples, 11/31 (35%) (95%CI: 19-54%) were from patients where the practitioner had requested PCR for HSV but not *T. pallidum*: 2 female and 9 male.
- All 11 cases were negative for HSV on PCR.
- Among the 2 females, both swabs were from genital sites. Among the 9 males, 7 swabs were genital and two anal.

Conclusion

Multiplex PCR testing for syphilis and herpes in primary care resulted in the detection of additional cases of primary syphilis. This is likely to have led to earlier diagnosis, treatment and potentially reduced infectiousness.

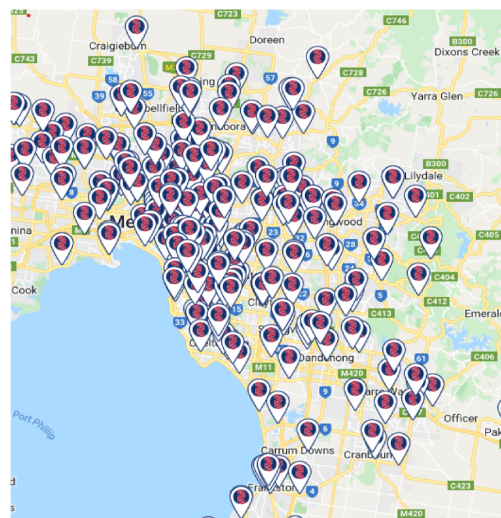


Figure 1: Diagram illustrating the Melbourne Pathology network with more than 300 Melbourne pathology collection sites across Victoria.

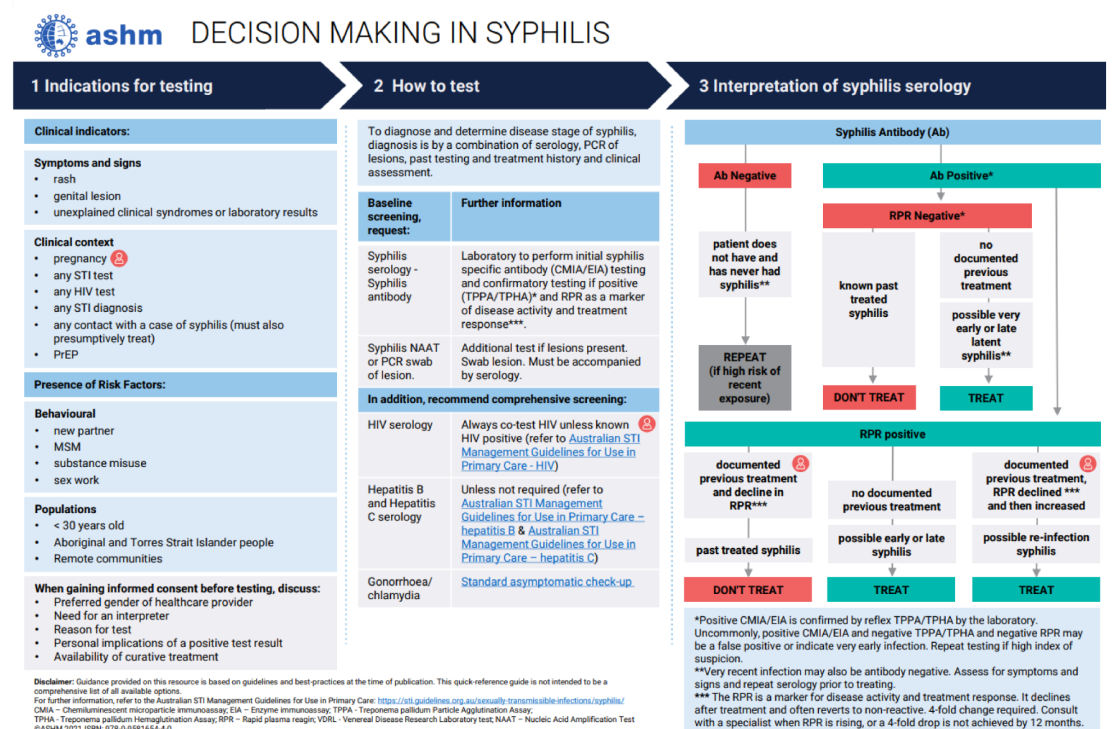
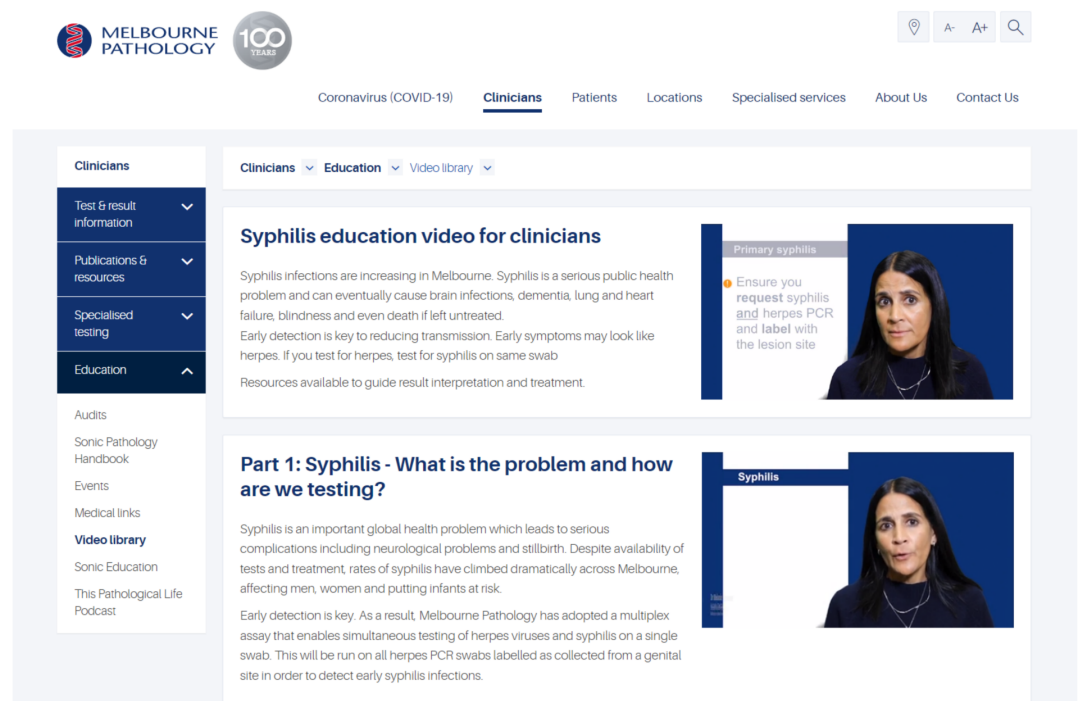


Figure 2: Resources developed to assist GPs: Educational videos were developed on PCR testing for syphilis. A link to the ASHM Syphilis decision making tool was provided in the comments section of positive Syphilis PCR results.

Acknowledgements

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