

# Insights into the Timing of Repeated Testing after Treatment for Chlamydia Trachomatis: Data and Modelling Study

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## Background

Chlamydia trachomatis (chlamydia) is an endemic sexually transmitted infection in many developed countries. People testing positive for chlamydia are at high risk of a repeat infection following treatment. The objective of this study was to determine the optimal time interval for a repeated chlamydia test

## Methods

We used claims data for US women aged 15 to 25 years who were enrolled in commercial health insurance plans in the MarketScan database between 2002 and 2006. We determined the numbers of initial positive and negative tests that were followed by a repeated test, and the positivity of repeated tests. We used a dynamic transmission pair model that reflects the heterosexual partnership formation and separation processes in 15 to 25 year olds to determine the time course of repeated infections in women.

## Results

40% (4,949/12,413) of positive tests were followed by a repeated test compared to 22% (89,119/402,659) of negative tests at any time. Positivity of repeated tests followed by an initial positive test was high; 15% (736) after a positive test versus 3% (2,886) after a negative test. The transmission model showed a peak in repeated infections between 2-5 months after treatment. For a chlamydia testing uptake of 10% per year, the additional impact of repeated testing on reducing population chlamydia prevalence was modest.

## Conclusions

Our mathematical model predictions support the recommended interval for repeat chlamydia testing. This study provides information that can be used to design randomised controlled trials to determine more effective interventions to prevent chlamydial re- infection.

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