Trends in STI screening during COVID-19 and missed cases among adolescents

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BACKGROUND

- Sexually transmitted infection (STI) diagnosis serves as an important linkage to HIV testing and pre-exposure prophylaxis (PrEP) for adolescents.
- The COVID-19 pandemic disrupted sexual health services for young people, with a potential consequence of increasing undiagnosed STIs.
- **This study aimed to describe STI testing changes and estimate undiagnosed STI cases during the pandemic**.

METHODS

- **Data:** Chlamydia, gonorrhea, and trichomonas testing encounters from six pediatric primary care clinics in Philadelphia, July, 2014-November, 2020.
- **Outcomes:** Test positivity and testing type (asymptomatic screening, risk-based testing, or symptomatic testing based on ICD-10 codes and visit indications).
- **Analysis:** Trends over time; estimated missed STI cases during the pandemic; mixed-effects models for effects of encounter-level and neighborhood-level characteristics on STI outcomes.

RESULTS

- **Sample characteristics:**
  - 35,548 STI testing encounters (14,158 unique patients) were analyzed, including 2,958 (2,289 unique patients) during the pandemic period (March 1st - November 30th, 2020).
  - Median age was 17.5 years, 57.4% of patients were assigned female sex at birth, and most patients were Black/African American (84.2%).
- **STI Trends (see Figure 1):**
  - Average monthly STI encounters dropped from 479 during the pre-pandemic period to 329 during the pandemic.
  - Test positivity increased from a baseline of 12.5% to a peak of 27.5%.
  - The percent of tests performed as asymptomatic screening decreased from a baseline of 72.5% to a nadir of 54.5%.
- **Missed STI cases (see Figure 2):**
  - The decrease in asymptomatic testing would result in an estimated 159 missed cases (23.8% of 669 expected cases), given that screening encounters showed a 14.2% test positivity rate during the pandemic.
  - Accounting for decreased patient volume during the pandemic, 88 cases were missed (14.7% of 598 expected cases).
- **Multivariate model:**
  - In the multivariate model controlling for testing type and other encounter-level and neighborhood-level characteristics, test positivity was higher during the pandemic period (OR: 1.49, 95% CI:[1.32, 1.68]).

During the pandemic, **STI test positivity increased** while **asymptomatic screening decreased.** Compared to expected cases during the pandemic, we estimate 23.8% of STI cases were missed.

Figure 2: Estimated missed STI cases during the pandemic, based on pre-pandemic patient volume and screening encounter test positivity during the pandemic

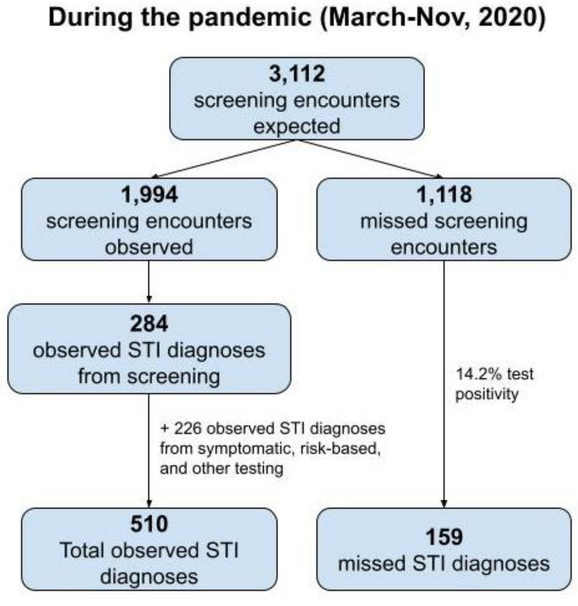
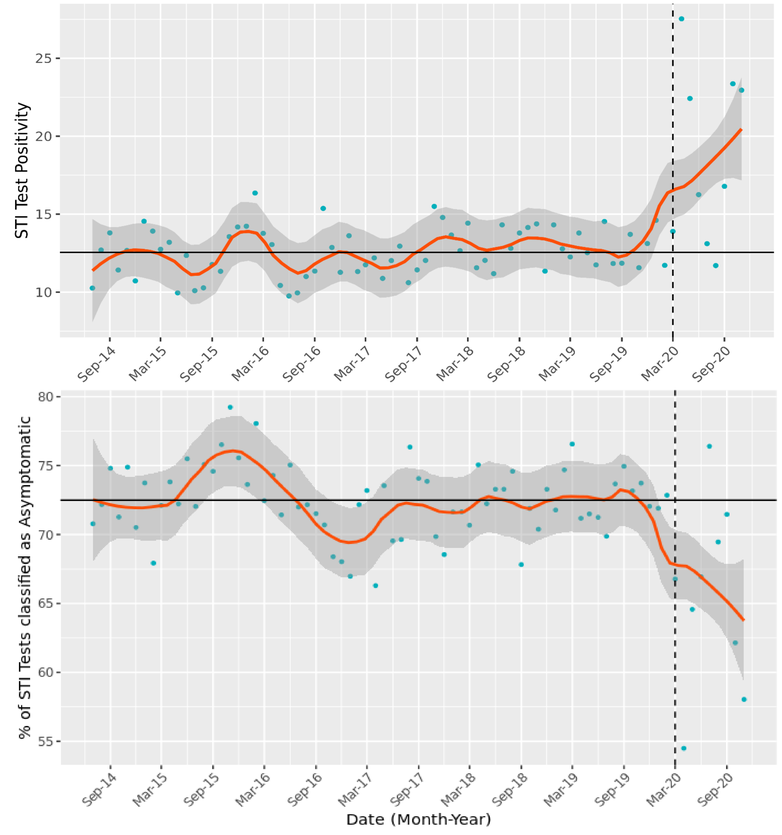


Figure 1: STI test positivity and percent of STI tests classified as asymptomatic screening over time. Horizontal lines denotes pre-pandemic averages, vertical line denotes the start of the pandemic.



CONCLUSIONS

- STI test positivity increased during the pandemic while asymptomatic screening decreased.
- Test positivity among asymptomatic patients was higher during the pandemic, suggesting increased population STI prevalence.
- The combination of increased STI positivity and decreased screening likely resulted in a substantial number of undiagnosed STIs.
- Undiagnosed STIs represent gaps in treatment and prevention of STIs, as well as potential missed opportunities for linking adolescents to pre-exposure prophylaxis against HIV.
- Efforts are needed to re-establish and sustain access to preventive sexual health services for adolescents in the wake of the COVID-19 pandemic.

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