

Introduction

- Sexually transmitted infections (STIs) during pregnancy continue to increase annually and can result in significant maternal and fetal health outcomes including low birth weight, miscarriage, and death.¹⁻⁴
- A better understanding of current prevalence trends may help to identify populations at greater risk of adverse maternal and fetal health outcomes.
- Study objectives:** With limited studies on STI prevalence in pregnant patients in the United States (US), this study aimed to report on recent national trends.

Methods

Study design:

- Population-based, cross-sectional, retrospective study using birth certificate data from the US National Vital Statistics System between from January 1, 2018 – December 31, 2022.

Study inclusions & definitions:

- All mothers who were US residents, had a live birth, and available data on chlamydia, gonorrhea, or syphilis infection before or during pregnancy were included.
- Patient demographics included STI, age, age group, race, ethnicity, payor type, and educational level attained.

Study definitions:

- STI: Mothers are reported to have an infection on birth certificates based on a confirmed diagnosis or treatment for the respective infection in their medical record.
 - Infections were limited to chlamydia, gonorrhea, and syphilis for which the method of transmission could reasonably be assumed to be due to sexual contact

Data and statistical analyses:

- Baseline characteristics were compared between birth years using Chi-square or Kruskal-Wallis test.
- STI rates were calculated by birth year, and by subgroups in 2022 (age group, race, ethnicity).

- STI rates: $\frac{\text{Number of live births with the infection}}{100,000 \text{ live births}}$

- Trend significance was assessed using the Cochran-Armitage test or a quadratic trendline.

Conclusion

- Among US live births, maternal rates for chlamydia and gonorrhea decreased in recent years; however, syphilis rates increased.
- STIs were disproportionately more common in younger and minoritized groups. Identifying patients with the greatest burden of infection may help in future efforts to lower transmission and target vulnerable populations.

References

- Liu B, et al. *Sex Transm Infect* 2013;89(8):672-8.
- Andrews WW, et al. *Am J Obstet Gynecol* 2000;183(3):662-8.
- Johnson HL, et al. *Sex Transm Dis* 2011;38(3):167-71.
- CDC. Sexually Transmitted Disease Surveillance 2021.

Figures and Results

Table 1. Rates of STI Testing

| Overall (N=18422502) | 2018 (N=3783252) | 2019 (N=3738069) | 2020 (N=3602218) | 2021 (N=3649446) | 2022 (N=3649517) | P-value |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------|
| STI (%) | | | | | | |
| Chlamydia | 1.8 | 1.9 | 1.9 | 1.8 | 1.7 | <0.0001 |
| Gonorrhea | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | <0.0001 |
| Syphilis | 0.1 | 0.2 | 0.2 | 0.2 | 0.3 | <0.0001 |
| Age, years (median, IQR) | 29 (25-33) | 29 (25-33) | 29 (25-33) | 30 (25-34) | 30 (25-34) | <0.0001 |
| Age group (%) | | | | | | <0.0001 |
| Under 20 | 4.8 | 4.6 | 4.4 | 4.1 | 4.0 | |
| 20-24 | 19.1 | 18.8 | 18.4 | 17.7 | 17.4 | |
| 25-29 | 29.0 | 28.8 | 28.3 | 27.9 | 27.6 | |
| 30-34 | 28.8 | 29.1 | 29.6 | 30.4 | 30.5 | |
| 35-39 | 14.9 | 15.3 | 15.6 | 16.2 | 16.5 | |
| Over 40 | 3.3 | 3.5 | 3.6 | 3.7 | 3.9 | |
| Race (%) | | | | | | <0.0001 |
| Black | 15.8 | 16.0 | 16.2 | 15.7 | 15.6 | |
| White | 73.5 | 73.2 | 73.3 | 73.9 | 73.8 | |
| >1 race | 2.7 | 2.7 | 2.8 | 2.8 | 2.9 | |
| Other* | 8.0 | 8.1 | 7.7 | 7.5 | 7.7 | |
| Hispanic ethnicity (%) | 23.6 | 23.9 | 24.2 | 24.4 | 25.8 | <0.0001 |
| Payor (%) | | | | | | <0.0001 |
| Private insurance | 49.7 | 50.2 | 50.6 | 51.7 | 51.3 | |
| Medicaid | 42.3 | 42.1 | 42.0 | 41.0 | 41.3 | |
| Self-pay | 4.2 | 4.2 | 3.9 | 3.9 | 4.1 | |
| Other | 3.9 | 3.5 | 3.5 | 3.4 | 3.4 | |
| Education (%) | | | | | | <0.0001 |
| 8 th grade or less | 3.1 | 3.1 | 3.1 | 3.0 | 3.3 | |
| 9 th -12 th grade | 9.5 | 9.1 | 8.8 | 8.1 | 7.9 | |
| High school/GED | 25.8 | 26.1 | 26.5 | 26.2 | 26.5 | |
| Some college | 20.1 | 19.7 | 19.2 | 18.6 | 18.0 | |
| Associate | 8.4 | 8.4 | 8.4 | 8.5 | 8.5 | |
| Bachelor | 20.7 | 20.9 | 21.2 | 22.0 | 22.1 | |
| Masters | 9.6 | 9.8 | 9.9 | 10.5 | 10.6 | |
| Doctorate | 2.8 | 2.8 | 2.9 | 3.1 | 3.1 | |

*Other includes Asian, American Indian or Alaskan Native, and Native Hawaiian or Other Pacific Islander race categories

Figure 3. STI rates, by maternal race and Hispanic origin: United States, 2022

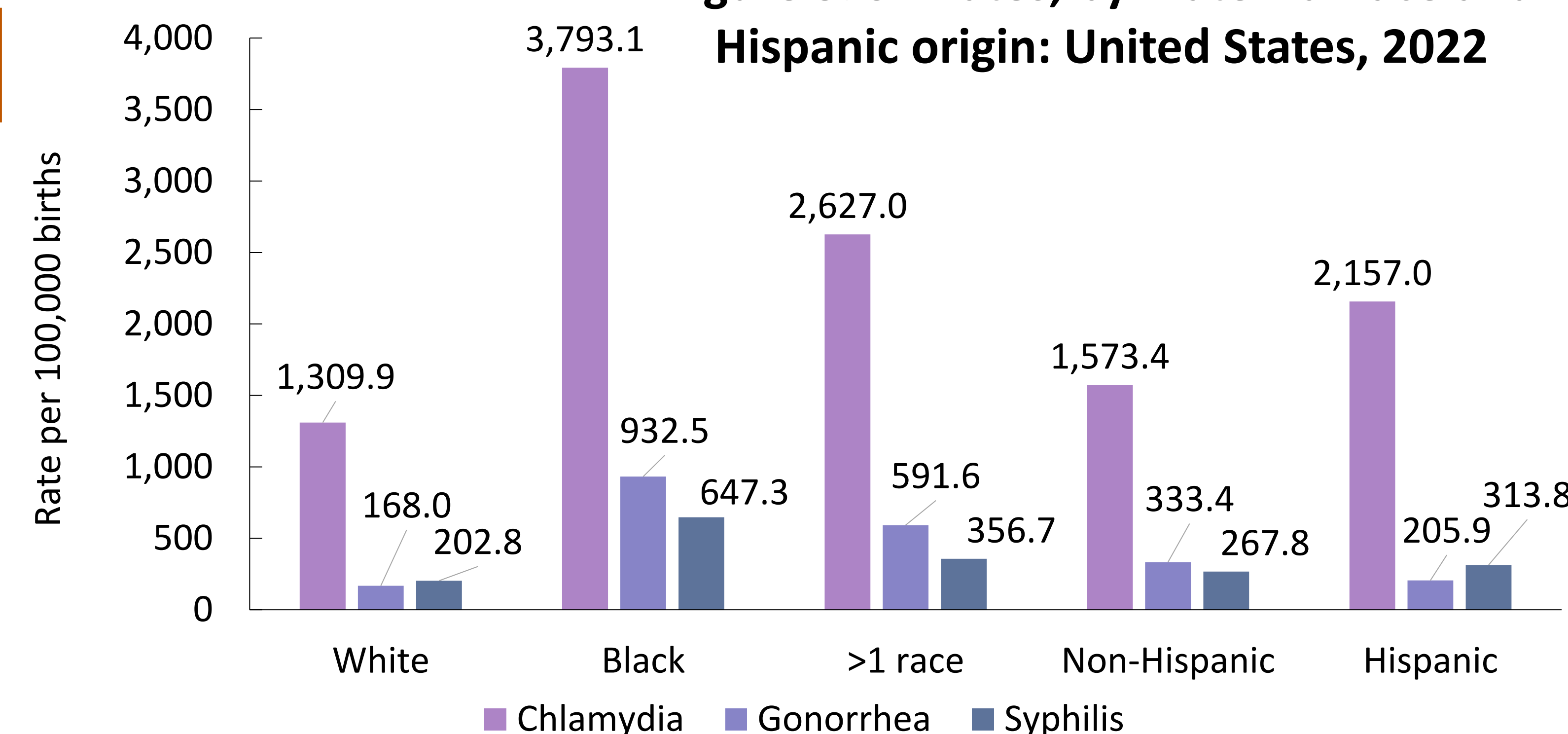
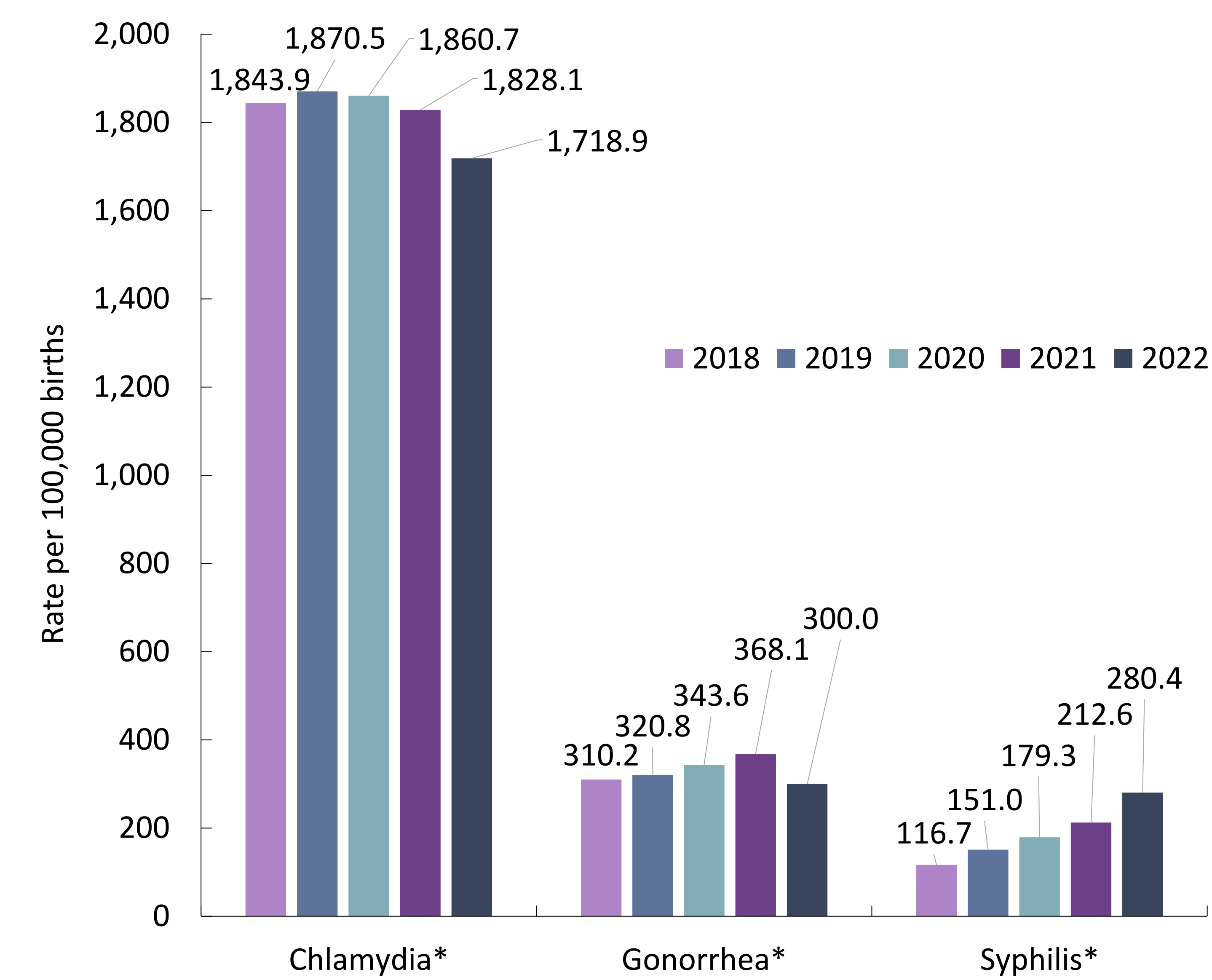
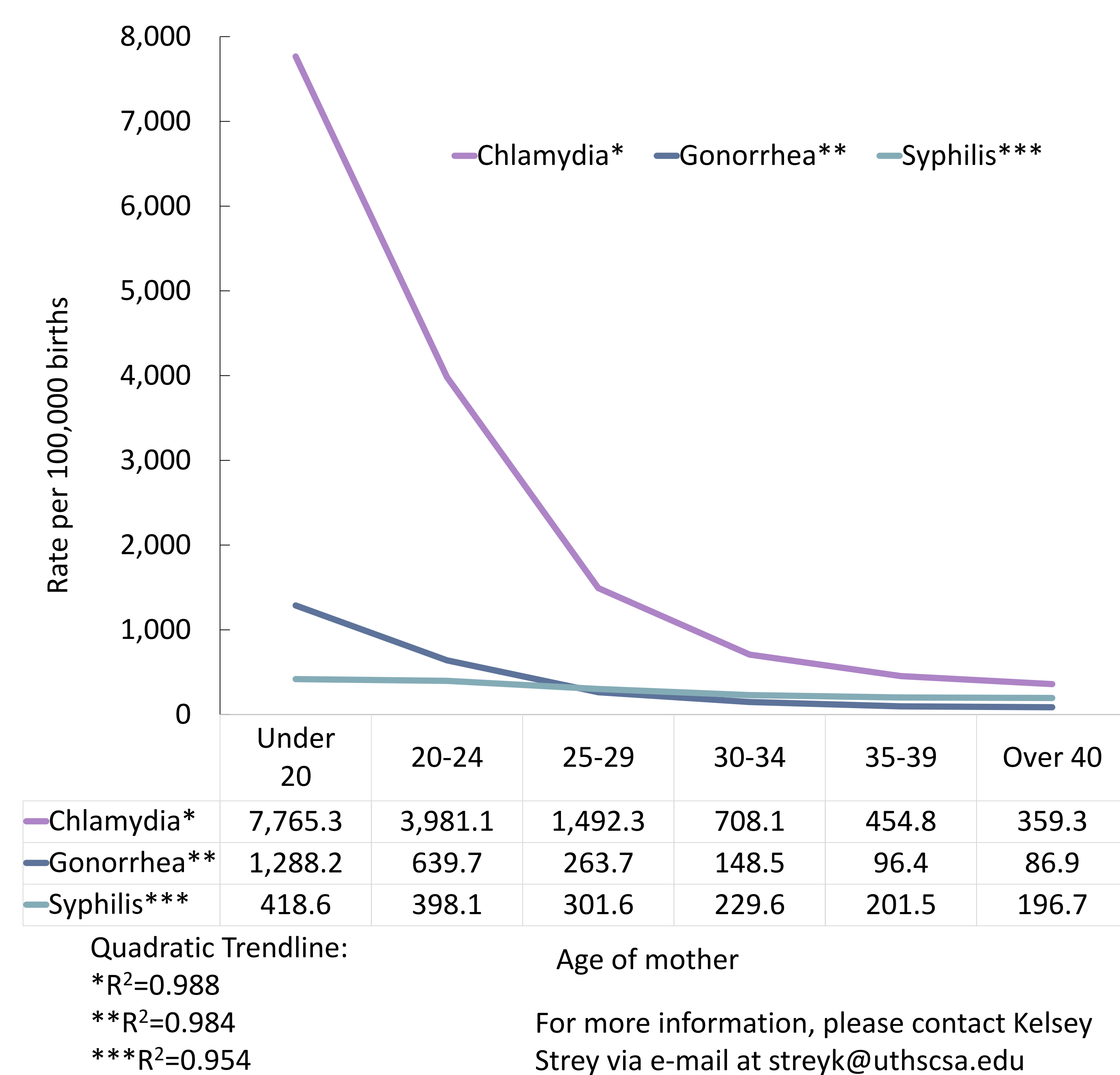


Figure 1. STI rates: United States, 2018 – 2022



*Significant linear trend for 2018 – 2022 (p<0.05)

Figure 2. STI rates, by maternal age: United States, 2022



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