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Geospatial Trends of (STIs) among PWH in South Carolina (SC), 2008 - 2020

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Key Findings

- Incidence rates of all STIs (chlamydia, gonorrhea, syphilis) increased significantly from 2008 to 2020
- Younger PWH experienced a 10-fold increase in chlamydia and gonorrhea post HIV diagnosis
- Males, Blacks, and men who have sex with men recorded the highest STI incidence rates

BACKGROUND

- The US is experiencing an STI epidemic, with more than one-half of Americans at risk of an STI infection in their lifetime.
- An all-time high number of STIs was reported in 2021, with the combined number of cases for gonorrhea, syphilis, and chlamydia soaring to 2.54 million.
- STI prevalence among PWH holds importance for their health and wellbeing
- To understand STI incidence among persons with HIV (PWH), we analyzed the incidence rates of chlamydia, gonorrhea, and syphilis by residence, age, race, sex, and associated risk factors from 2008 to 2020.

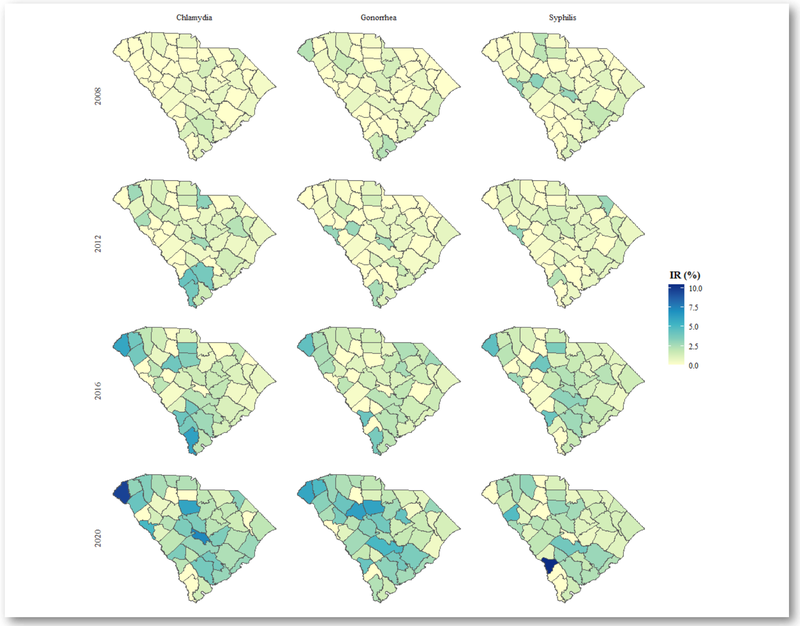
METHODS

- The study used the South Carolina electronic HIV/AIDS reporting system (eHARS) for all PWH diagnosed with HIV over 12 years.
- Demographics and other clinical data were linked to eHARS data.
- Yearly incidence rates (IR) of each STI (chlamydia, gonorrhea, and syphilis) were calculated as the number of new STI cases per calendar year divided by the total person-time at risk.
- We defined a new STI diagnosis after the occurrence of HIV in the incidence calculation.
- For person-time at risk, only PWH diagnosed with HIV on or before each calendar year and alive at the start of that calendar year were included.

RESULTS

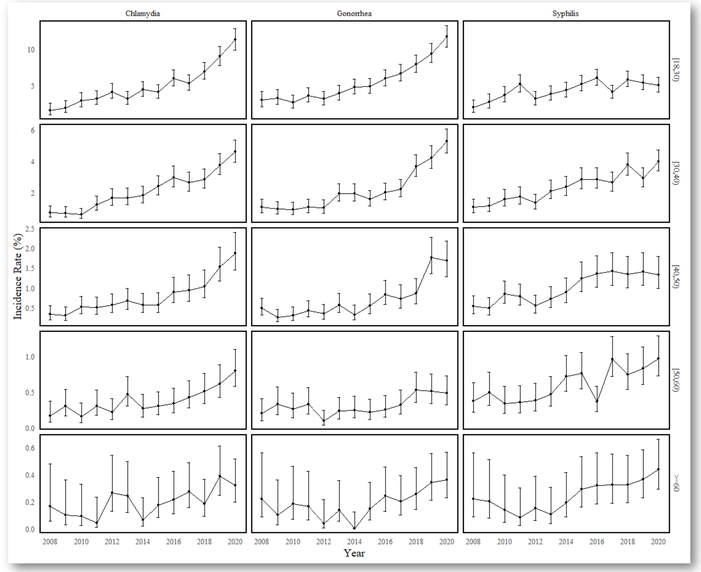
- Incidence rates (IRs) for all STIs showed a significantly upward trend but differed between STIs and subgroups.
- From 2008 to 2020, the IRs of all STIs increased significantly, with chlamydia representing the highest rates (IR_{2008} = 0.42, IR_{2020} = 2.59), followed by gonorrhea (IR_{2008} = 0.66, IR_{2020} = 2.65). Syphilis showed inconsistent trends.

Figure 1. Choropleth Map of STIs Incidence Rate in South Carolina



- Younger individuals (18-30) experienced about a 10-fold increase in chlamydia (IR_{2008} = 1.72, IR_{2020} = 11.00) and gonorrhea (IR_{2008} = 2.52, IR_{2020} = 11.53).
- Syphilis incidence was highest among those aged 30-40 (IR_{2008} = 0.86, IR_{2020} = 3.61).
- Males (IR_{2008}= 0.76, IR_{2020}= 3.40) consistently had more than double gonorrhea rates than females (IR_{2008}=0.46, IR_{2020} = 0.68).
- Blacks experienced disproportionately high rates for all three STIs.
- Men who have sex with men (MSM) recorded the highest STI incidence rate, while urban residents experienced a significant increase in chlamydia, gonorrhea, and syphilis.

Figure 2. Yearly IRs of STIs by Age Groups with 95% CI



CONCLUSIONS

- From 2008 to 2020, the increase in incidence rates of chlamydia, gonorrhea, and syphilis was high among PWH.
- STI coinfection can increase complications/comorbidities, increase HIV transmission, and adverse drug interactions.
- These STIs particularly impact young people, Blacks, MSM, and urban residents, highlighting the need for focused and targeted prevention/treatment efforts.

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