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Session: 140. HIV: Diagnosis and Screening
Friday, October 5, 2018: 12:30 PM

Background. HIV and HCV are both treatable viruses for which routine screening among specific age cohorts is recommended. New York State requires patient consent prior to screening for HIV but not HCV. To estimate the impact of the consent requirement, we compared rates of HIV and HCV screening.

Methods. We performed a retrospective study of all adult patients admitted to a tertiary-care hospital in the Bronx, NY, between April 2015 and June 2016. During the study period, automated prompts in the electronic medical record facilitated screening for HIV among patients ages 21–64, and for HCV among patients born between 1945–1965. We compared the proportions of patients qualifying for screening for HIV, HCV, or both who were appropriately screened prior to discharge to calculate an adjusted risk difference between performance of HIV and HCV screening. Using the local prevalence of undiagnosed HIV, we estimated the number of missed HIV diagnoses attributable to the difference in screening rates.

Results. A total of 21,413 unique hospitalized patients ages 21–64 and/or born between 1945–1965 were analyzed. Among those qualifying for screening for HIV alone or HCV alone, 39.7% and 58.6% were screened prior to discharge, respectively. Among those qualifying for both HIV and HCV screening, 6.7% were screened for HIV alone, 29.3% were screened for HCV alone, and 30.3% were screened for both. The risk difference between HCV and HIV screening adjusted for patient and admission characteristics was 22.0% (95% CI 20.6%–23.4%). Using an estimated prevalence of undiagnosed HIV of 0.2%, this risk difference corresponds to approximately four (95% CI 3.6–4.1) missed cases of HIV during the study period.

Conclusion. There was a large difference in the number of patients appropriately screened for HIV compared with HCV. While the requirement for consent was the only operational difference in performing routine screening for HIV compared with HCV, differences in how the two viruses are perceived may also have contributed to the observed difference in screening rates. Nevertheless, our findings suggest that removing the requirement for consent prior to HIV screening may increase the number of cases of previously undiagnosed HIV identified by routine screening.

Disclosures. All authors: No reported disclosures.

1279. Prevalence of HIV Among the Youth Aged 15–24 in Nigeria: A Need to Increase Access for Young Adolescents to HIV Counseling and Testing

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Session: 140. HIV: Diagnosis and Screening
Friday, October 5, 2018: 12:30 PM

Background. Nigeria with a population of over 173 million people, HIV/AIDS remains a growing public health issue. The people living with the virus are about 3.2 million and it is observed that there is an increase of new infection among the adolescents and young people. We decided to study the prevalence of HIV among young people aged 15–24 in the country. The country was divided into six regions for the purpose of this study.

Methods. We adapted the secondary data that were collected from the report of the National HIV/AIDS and reproductive survey (NARSH 2012) on Prevalence of HIV/AIDS on adolescents and young people in Nigeria in 2012. Data collection on the survey were from the primary source documents in health facilities that offer HIV/AIDS services

Results. Among the six geopolitical zones, South-South zone has the highest (4.9%) prevalence rate of HIV infection among the adolescents and young people, more than the National median prevalence of 3.6%, while south-East has the lowest prevalence of (1.1%). Results showed that adolescent and young people, aged 20–24 had higher prevalence of 3.2% while ages 15–19 had prevalence of 2.9%. Results from the segregated data by sex showed that between the ages (15–24), the prevalence is higher (3.3%) with female gender than the male (2.4%) counterpart. HIV/AIDS in Africa and Nigeria in particular has a feminine face due to culture of silence, early child marriage and religious barriers that forbids female gender to discuss issues around sexuality or seek reproductive health services at age 15.

Conclusion. The age limit for access to HIV counseling and testing (HCT) should be adjusted to include young people who are sexually active as early as age 15. Findings revealed that the legal framework on access to HCT (HIV Counselling and Testing), of WHO at 18 years and above have created a barrier to young people who are below 18 and are active sexually to access HCT as the Health personnel would ask for the parental consent.

Disclosures. All authors: No reported disclosures.

1280. Geospatial Spread of HIV in the Cologne-Bonn Region, Germany: From 2001 to 2016

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Session: 141. HIV: Molecular Epidemiology
Friday, October 5, 2018: 12:30 PM

Background. Geographical targeting of interventions of hotspots of HIV transmission increases the impact of HIV intervention. We combined molecular epidemiology and geospatial analyses to provide insights into the drivers of HIV transmission and the contribution of geographical hot spots to the rapidly evolving local HIV epidemic of Cologne-Bonn.

Methods. We included 714 HIV-1-infected ART naive individuals, followed at the University Hospitals Cologne and Bonn between 2001 and 2016. Phylogenetic and network analyses were performed to infer putative relationships. Assortativity index (AI, i.e., shared attributes) and characteristics of genetically linked individuals were analyzed. The geospatial diffusion of the local epidemic (i.e., viral gene flow) was evaluated using a Slatkin-Maddison approach. Geospatial dispersal of local HIV transmission was determined by calculating the average distance between genetically linked individuals (centroids of 3-digit zip code of residency, ArcGIS®).

Results. Of 714 sequences, 217 (30.4%) had a putative linkage with at least one other sequence, forming 77 clusters (size range: 2–8). Genetically linked individuals were significantly more likely to live in suburban areas ($P = 0.035$), <30 years of age ($P = 0.013$), infected with HIV-1 subtype B ($P = 0.002$). AI for concurrent area of residency showed that individuals were nonassortative in the network (-0.0026 , $P = 0.046$), indicating that clustering individuals tended to cluster with individuals living in a different zip code. Geospatial analyses revealed that the median distance between genetically linked individuals was 23.4 km, significantly lower than expected (median 39.68 km; $P < 0.001$) (Figure 1A). Slatkin Maddison analyses revealed increased gene flow originating from Central Cologne toward the surrounding areas ($P < 0.001$, Figure 1B).

Conclusion. Phylogeographic analysis suggests that central Cologne may be a significant driver of the regional epidemic. While clustering individuals lived closer than unlinked individuals, they were less likely to be linked to others from their same zip code. This may reflect individuals reaching out of their neighborhoods and social circles to meet new partners.

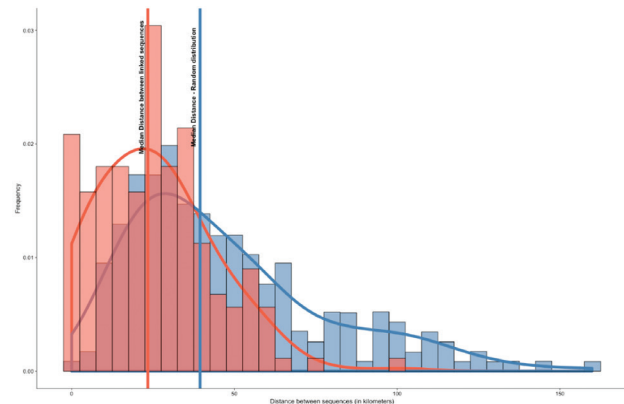


Figure 1. Median distance between linked sequences and a random distribution. The distance between linked sequences (median 23.4 kilometers [IQR 11.3–34.6]) was significantly lower than the random distribution (median 39.68 kilometers, IQR 23.79–62.59, $p < 0.001$).

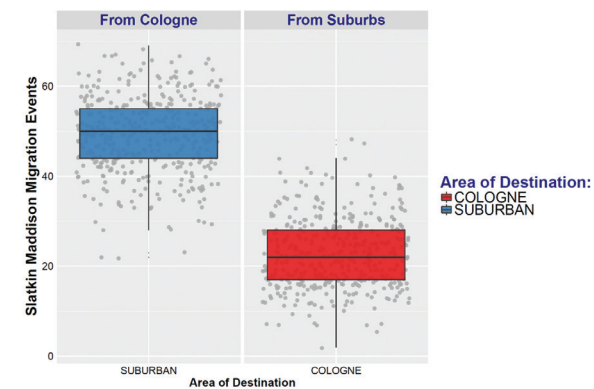


Figure 2. Viral gene flow between Central Cologne and the suburban areas. We used a Slatkin-Maddison approach on 1,000 of random subsets of equal number of sequences per location (Cologne vs. Suburban areas) to identify the diffusion of the epidemic. The HIV gene flow was significantly higher from central Cologne ($p < 0.001$), illustrating the potential role of central Cologne as geographical hotspot in the spread of the local epidemic.

Disclosures. All authors: No reported disclosures.