Dissertation Defense

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Sexual concurrency and its potential contribution to HIV transmission within racial/ethnic groups among men who have sex with men in the United States

Friday, November 2nd, 10:00am
Rita Anne Rollins Room (8th floor GCR)

Committee
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Abstract

In the United States, the majority of HIV infections occur among men who have sex with men (MSM). MSM of color bear disproportionately higher levels of HIV prevalence and incidence. Individual-level risk behaviors have failed to explain this disparity and network factors have been suggested. Sexual concurrency, or the overlapping on one’s sexual partnerships in time, catalyzes HIV transmission in networks and remains little studied among MSM. In populations where concurrency has been studied, methodological limitations have resulted in inconsistent estimates of its prevalence and relationship to HIV transmission.

For this dissertation, three studies were conducted to understand the occurrence and potential impact of concurrency in an online cohort of MSM in the US. Simultaneously, three methodological issues were addressed: accurate measurement, inference at the appropriate levels of analysis, and the measurement of biologically relevant concurrency.

In the first study we evaluated existing methods and a novel partnership timing module (PTM) for measuring concurrency. The PTM had strong concurrency detection ability and agreement with previous measures, at the individual-, dyad-, and triad-levels, suggesting it may be well-suited to quantifying concurrency among MSM.

In the second study we assessed concurrency and concurrent unprotected anal intercourse (UAI) at the individual and triad levels. Forty-five percent of individuals indicated concurrent partnerships and 16% indicated concurrent UAI in the previous 6 months, with no significant heterogeneity by race/ethnicity. Respondents had a two-fold odds of UAI with two partners when they were concurrent.

In the third study we implemented a new technique for quantifying the indirect exposure imparted to sex partners attributable to concurrency and concurrent UAI. Levels of indirect exposure to other partners were high among repeat sex-partners: 58% were exposed by concurrency and 37% of UAI partners were by concurrent UAI. Black non-Hispanic and casual partners were more likely to be exposed.

Concurrency is highly prevalent among MSM, potentially contributing to high HIV incidence, and may place black and casual partners at greater risk. The methods developed may aid in the understanding of concurrency in other contexts where concurrency is thought to play a role in HIV transmission, such as sub-Saharan Africa.