

1067-92-2375

Aprillya Lanz* (lanzAR@vmi.edu), 430 Mallory Hall, Lexington, VA 24450. *Mathematical Model of Methamphetamine and HIV Epidemics among Men-Seeking-Men Community*. Preliminary report.

Recent data suggest that methamphetamine use is on the rise and has been considered as an epidemic. Many studies have focused on the physiological and psychological issues related to methamphetamine use which found that the popularity of methamphetamine are due to the effects of intoxication in self-confidence, euphoria, increase sexual drive and appetite suppression. Because of the sexual drive side effect, the use of methamphetamine has been rapidly rising among the men-seeking-men community in which they practice risky sexual behavior. Thus, methamphetamine is a potential cause for the exacerbation of HIV epidemic in the men-seeking-men community. This presentation will discuss the mathematical model of the relationship between methamphetamine use and its effects on the HIV transmission among the men-seeking-men community. A modified cross-community SI model will be presented along with the analysis of the model that include the methamphetamine-HIV epidemic threshold, equilibria, and some numerical simulations. (Received September 22, 2010)