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Angelica Bloomquist* (abloomquist@sdsu.edu) and **Naveen K Vaidya**. *Modeling the risk of HIV infection for drug abusers.*

It has been well established that drugs of abuse, such as opiates, are one of the leading causes for transmission of HIV in the United States and many parts of the world. Drug abusers often face a higher risk of acquiring HIV infection because target cell (CD4+ T-cell) receptor expression differs in response to morphine, a metabolite of common opiates, exposure as shown in previous studies. In this study, we use a viral dynamics model that incorporates the T-cell expression difference to formulate the increased probability of infection among drug abusers. With a more in depth understanding of the dynamics and the increased risk for these individuals, we further evaluate how preventive therapies, including pre- and post-exposure prophylaxis, affect the infection risk in drug abusers. These results are useful to devise ideal treatment protocols to combat the several obstacles those under drugs of abuse face. (Received September 17, 2019)