Modeling of human immunodeficiency virus modes of transmission in Iran.

Nasirian M, Doroudi F, Gooya MM, Sedaghat A, Haghdooest AA.

Source

Regional Knowledge Hub for HIV/AIDS Surveillance, Kerman University of Medical Sciences, Iran. maryamnasiran77@gmail.com.

Abstract

BACKGROUND:

Main technique to control acquired immunodeficiency syndrome (HIV) infection is the effective preventive programs among high-risk groups. Modeling is one of the effective methods where there is inadequate data. We used the modes of transmission (MOT) model to predict the transmission of HIV infection in Iran.

METHODS:

We systematically searched published and grey literature to find values for the input parameters of MOT in 2012. The data were discussed by experts before being fed into the model. Using the Monte Carlo simulation, we computed the 95% confidence interval (CI) for the outputs of the MOT.

RESULTS:

The MOT estimates that 6319 new HIV infections would have occurred in Iran in 2012 (95% CI: 1386, 7571). About 96% (95% CI: 94.4%, 97.2%) of new infections were among intravenous drug users (IDUs) and 13% (95% CI: 9.5%, 16%) among their sexual partners. The major routes of direct and indirect HIV transmission in Iran are unsafe injection (86%) and unprotected sexual contact (74% unprotected heterosexual and 1% homosexual) respectively. If current coverage for safe injection among IDUs increases from 8% to 59%, new HIV infections in this group would decrease around 57%.

CONCLUSION:

IDUs remain at highest risk of HIV infection in Iran, so the preventive program coverage for IDUs and their spouses needs to be increased. As the sexual transmission of HIV contributes increasingly to the pool of new infections, serious measures such as harm reduction program are required to reduce sexual transmission of HIV among the relevant key populations.

PMID: 23241016
[PubMed - in process]