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Title:	Modelling the role of awareness and screening of infectives in the transmission dynamics of HIV
Authors:	Kaur, Navjot (/jspui/browse?type=author&value=Kaur%2C+Navjot)
Keywords:	Awareness HIV Stability theory Simulation
Issue Date:	2016
Publisher:	World Academic Union
Citation:	World Journal of Modelling and Simulation, 12(2), pp. 97-111
Abstract:	Prevention is better than the cure, more so for incurable infectious diseases. The awareness, screen-ing of infectives and counseling can help in devising suitable preventive policies for controlling the incurableinfectious diseases. This paper proposes a nonlinear mathematical model to study the effect of awareness,screening of infectives and counseling on the spread of HIV infection in the endemic region. In this work,we determine the basic reproduction numberR0of the model by the method of next generation matrix and itis found that the global dynamics of the spread of the HIV infectious disease are completely determined bythe basic reproduction numberR0. IfR0≤1, the disease always dies out and the disease-free equilibriumis globally stable. IfR0>1, the positive endemic equilibrium is locally asymptotically stable and it maybe globally stable under some conditions on parameters. The effect of awareness, screening of infectives andcounseling on the transmission of HIV is studied using numerical simulation and we observe that all theseparameters have positive impact in reducing the transmission of HIV in the population. Our analysis show thatwith some suitable choice of parameters corresponding to awareness, screening and counseling, the diseasecan be eliminated from the population within a reasonable duration of time.
Description:	Only IISERM authors are available in the record.
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