

Busenberg, Stavros; Cooke, Kenneth; Thieme, Horst

Demographic change and persistence of HIV/AIDS in a heterogeneous population. (English)

Zbl 0739.92014

SIAM J. Appl. Math. 51, No. 4, 1030-1052 (1991).

A simple model of the transmission of the HIV virus is proposed. The basic epidemiological classes are the juveniles, non-core and core adults. The birth and death rates of the adults are taken into account. Mathematical analysis is provided with epidemiological implications. Thresholds for the persistence of the disease are derived. Two diverse notions of the disease persistence are shown to exist. The global behaviour of the solution is obtained. This model can provide guidelines for the appropriate time scales and parameters that need to be considered in simulation studies.

Reviewer: P.R.Parthasarathy (Madras)

MSC:

92D30 Epidemiology

34D05 Asymptotic properties of solutions to ordinary differential equations

92D25 Population dynamics (general)

Cited in **15** Documents

Keywords:

transmission of HIV virus; demographic change; age structure; endemic thresholds; non-core adults; juveniles; core adults; birth and death rates; disease persistence; global behaviour; simulation studies

Full Text: [DOI](#)