

Modeling pulse infectious events irrupting into a controlled context: A SIS disease with almost periodic parameters

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A new epidemic model of seasonal/cyclical pulse contagions of an infectious disease is introduced: a population with a controlled infectious disease is perturbed by a sequence of pulse infectious events arising from the specific features of the population's behavior. The purpose of this article is to obtain an epidemic threshold which allows us to decide how a sequence of epidemic events could destabilize the previous controlled scenario and how a new endemic equilibrium appears. A threshold is obtained when supposing a set of almost periodic properties in the model. © 2011 Elsevier Inc.