Impulsive multigroup SIS model for spread of modeling multidrug-resistant bacteriae

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In the talk we present a system of SIS models coupled by impulses at fixed times in the way that it can describe the transfer of patients between health-care facilities. The first aim for his considerations is to provide analytical background for numerical simulation of multidrug-resistant bacteriae spread based on admission/discharge data from insurance provider for Saxony and Thuringia (Germany) for years 2010 - 2016 considered in [1]. Dynamical properties developed at possibly high level of generality allow to examine statements hypothesize in [1] and can be easily applied for other settings.

References:
[1] A. Lonc, M. J. Piotrowska and K. Sakowski, Analysis of the AOK Plus data and derived hospital network (2019) Mathematica Applicanda, vol. 47, 127 – 139, doi: 10.14708/ma.v47i1.6497