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An age-structured epidemic disease model with delayed contact tracing

We developed a partial differential equation model about the spread of an infectious disease in a closed community in order to consider the efficacy of several basic public health interventions: (i) identifying and isolating symptomatic cases, (ii) tracing and quarantine of the contacts of identified infectives, and (iii) delayed tracing based on the real-world conduct of contact tracing strategies. Simulations and different aspects of contact tracing effects will be presented and discussed. The model can be applied as a rational basis for decision makers to guide interventions and deploy public health resources in future epidemics. Joint work with Professors Kunquan Lan and Jianhong Wu.