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Models for the spread of universally fatal diseases. II. (English) [Zbl 0737.92014](#)

Differential equations models in biology, epidemiology and ecology, Proc. Conf., Claremont/CA (USA) 1990, Lect. Notes Biomath. 92, 57-69 (1991).

Summary: [For the entire collection see [Zbl 0732.00026](#); and for part I see J. Math. Biol. 28, No. 4, 451-462 (1990; [Zbl 0718.92021](#)).]

We consider a simple model for a universally fatal disease with an infective period long enough to allow natural deaths during the infective period. The analysis of this model is considerably more complicated than the analysis of a model with an infective period short enough that the population dynamics are confined to the susceptible class. However, the basic result that in some circumstances the stability of an endemic equilibrium may depend on the distribution of infective periods is shared by both models.

Reviewer: [Reviewer \(Berlin\)](#)

MSC:

- [92D30](#) Epidemiology
- [45M10](#) Stability theory for integral equations
- [45J05](#) Integro-ordinary differential equations
- [45M05](#) Asymptotics of solutions to integral equations

Cited in **12** Documents

Keywords:

long infective periods; universally fatal disease; stability of endemic equilibrium; distribution of infective periods