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Models of infectious disease control with limit treatment resource

The number of patients need to be treated may exceed the carry capacity of local hospitals during the spreading of a severe infectious disease. We propose an epidemic model with saturation recovery from infective individuals to understand the effect of limited resources for treatment of infectives on the emergency disease control. It is shown that saturation recovery from infective individuals leads to vital dynamics, such as bistability and periodicity, when the basic reproduction number $\mathbb{R}_0$ is less than unity.

References

[1] J.Cui, X.Mu, H.Wan,*Saturation Recovery Leads to Multiple Endemic Equilibria and Backward Bifurcation.* Journal of Theoretical Biology **254** 275–283.

[2] W. Wang, S. Ruan, *Bifurcations in an epidemic model with constant removal rate of the infectives.* J. Math. Anal. Appl. **291** 775–793.

[3] W. Wang, *Backward bifurcation of an epidemic model with treatment.* Math. Biosci. **201** 58–71.