



Inflow restrictions can prevent epidemics when contact tracing efforts are effective but have limited capacity

Hannes Malmberg* and Tom Britton†

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Abstract

When a region tries to prevent an outbreak of an epidemic, two broad strategies are available: limiting the inflow of infected cases using travel restrictions and quarantines, or limiting the risk of local transmission from imported cases using contact tracing and other community interventions. A number of papers have used epidemiological models to argue that inflow restrictions are unlikely to be effective. We simulate a simple epidemiological model to show that this conclusion changes if containment efforts such as contact tracing have limited capacity. In particular, our results show that moderate travel restrictions can lead to large reductions in the probability of an epidemic when contact tracing is effective, but the contact tracing system is close to being overwhelmed.

*Department of Economics, University of Minnesota, USA; pmalmber@umn.edu

†Department of Mathematics, Stockholm University, Sweden; tom.britton@math.su.se