

Global aspects in vaccination

Julien Arino¹ P. van den Driessche²

¹ *University of Manitoba, Winnipeg, Manitoba R3T 2N2 Canada*

Julien.Arino@umanitoba.ca

² *University of Victoria, Victoria, B.C. V8W 2Y2 Canada* vandendr@uvic.ca

Recent micro-epidemics of measles have highlighted the role that poorly vaccinated communities can play in the global spread of infectious diseases. We consider a simple model for vaccination set in a resident-traveller context, in order to explore ideas linked to spatial heterogeneity of vaccination. The motivation for the work lies not only in measles but also in an epidemic of poliomyelitis that started in 2002 because of a vaccine scare. We investigate mathematical properties of the model, then conduct a brief computational exploration of the model, with focus on a setting in which countries have quite different vaccination coverages.