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SOCIAL AND INDIVIDUAL COST OF VACCINATION FOR IMPERFECT VACCINATION

Paula Patrício*¹,
Paulo Doutor¹ and M.C. Soares¹

Department of Mathematics,
Universidade Nova de Lisboa, Portugal
pcpr@fct.unl.pt (*corresponding author),
pjd@fct.unl.pt, mcs@fct.unl.pt

It is known that imperfect vaccination decreases the rate of infection, but, as side effect, increases the average age at infection. In this work we consider an age-structured population with imperfect vaccination. Our aim is to compare the social and individual costs of such a vaccination, assuming that disease costs are age dependent. We determine the parameter region for which vaccination has positive social impact. Further, we study the Nash equilibria corresponding to the individual optimum. We further describe different actions where both the society and individuals goals are attained.