EPIDEMIC MODELLING

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2024-02-25

##MODELLING AN EPIDEMIC ##Why do we model epidemics? #Predict the current conditions #Predict future progress of any given epidemic #Understand the mechanisms behind the epidemic #Understand which interventions might be successful

##How do we model epidemics? #Identify key biological processes #Abstract them into a mathematical model #Investigate effect(s) of changing parameters

## SI MODEL

#Assume #fixed population of constant size (S+I=N) #All members of the population are in contact

#Rate at which a susceptible person gets infected depends upon: #The number or proportion of infected persons #The transmission rate β

##Rate of infection #We are going to focus on frequency dependent transmission #This is the most appropriate for models in humans #Livestock models may use density dependent transmission