MODELING-AN-EPIDEMIC.R

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##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?  
   
# 1. Identify key biological processes  
  
#2. Abstract them into a mathematical model  
  
#3. 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