

# Modello epidemiologico SIR

popolazione  $N$  individui

$S$  suscettibili

$I$  contagiati

$R$  rimossi

$$\begin{cases} \frac{dS}{dt} = -\beta \frac{S}{N} I \\ \frac{dI}{dt} = \beta \frac{S}{N} I - \gamma I \\ \frac{dR}{dt} = \gamma I \end{cases}$$

The parameters:  $\beta, \gamma, N$

Note:  $S + I + R = N$

$$\frac{dN}{dt} = \frac{dS}{dt} + \frac{dI}{dt} + \frac{dR}{dt} = 0$$