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The final size of an epidemic

The early disease transmission model of Kermack and McKendrick established two main results that are still at the core of most disease transmission models today: the basic reproduction number, $\mathcal{R}_o$, as a threshold for disease spread in a population; and the final size of an epidemic. As models become more complex, the relationship between disease spread, final size and $\mathcal{R}_o$ are not as clear; yet $\mathcal{R}_o$ remains the main object of study when comparing control measures.

In this talk I review the final size relation for a simple epidemic model and discuss its form in more complex models for treatment and control of influenza and HIV.