

| Term | Abbreviations or symbols | Definition |
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| Basic Reproduction Number (in epidemiology) | R_0 | The expected* number of secondary cases produced by a single infected case in an otherwise susceptible population *expected in the statistical sense, i.e. the mean |
| Calibration | | Any process by which model parameters are adjusted, to bring a model's outputs into agreement with data |
| Case fatality rate | | The proportion of infected cases who die from a given disease. Note this is more properly thought of as a proportion, and is not a per-capita rate as described above |
| Closed population | | A population with no immigration or emigration |
| Cluster | | An aggregation of cases grouped in place and time that are suspected to be greater than the number expected, even though the expected number may not be known. |
| Compartmental model | | A modelling approach where the population is divided into different 'compartments', representing their status of disease, demographics and other factors, and where mathematical equations are used to model transitions between different compartments. Contrast with 'individual-based' models, where each individual in the population is modelled explicitly |
| Competing hazards | | Different hazards acting on a single compartment in a model; for example, infected people may be subject to hazards of recovery and death. Population outcomes depend on the relative sizes of each hazard |
| Deterministic model | | A model that has only one possible output when all of its parameters are fully specified. Called 'deterministic' because the model behaviour is predictable in this way |
| Effective Reproduction Number (in epidemiology) | R_{eff} | The expected* number of secondary cases arising from an infected case, with a given level of immunity in the population *expected in the statistical sense, i.e. the mean |
| Endemic | | Refers to the constant presence, and/or usual prevalence of a disease of infectious agent in a population within a geographic area. The amount of a particular disease that is usually present in a community is referred to as the baseline or endemic level of the disease. |
| Epidemic | | The occurrence of disease cases in excess of normal expectancy, usually referring to a larger geographical area than "outbreak". |
| Epidemiology | | The study of how often diseases occur in different groups of people, and why. |
| Exposed | | A contact between a susceptible and infected person that could potentially lead to infection |
| Extinction (in epidemiology) | | When prevalence of an infection in the population becomes zero |
| Force of infection | λ (lambda) | Risk of infection of an individual, per unit time. Think of this as a force that is acting on susceptible people in the population and is working to turn them into infected people. |
| Generation time | | The mean duration between the onset of symptoms in an infected case, and the onset of symptoms in their secondary infections |
| Homogenous population | | Refers to a population which all faces the same hazards. |
| Incidence | | The number of new infections during a given interval of time (for example, weekly incidence) |

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| Incubation period | | period between exposure and onset of clinical symptoms |
| Infectious period | | The length of time for which an infected individual is infectious to others |
| Latent period | | period between exposure and ability to transmit to others |
| mortality rate (μ) | μ (μ) | Rate at which death of individuals occurs, per unit time |
| Outbreak | | The occurrence of disease cases in excess of normal expectancy, usually referring to a smaller geographical area than "epidemic". |
| Pandemic | | An epidemic that has spread over several countries or continents, usually affecting a large number of individuals. |
| Parameter | | Any quantity governing rates of change of different compartments, and is thus used to specify a model. Examples include the per-capita rate of recovery, and the proportion of infections that are symptomatic |
| Pathogen | | A micro-organism which can cause, or causes disease or damage to a host. |
| Per-capita rate (or hazard) | | A rate of transition between two different states in a compartmental model, that is assumed to apply equally to every individual in the source compartment' |
| Population turnover | | Change over time in the individuals making up a population, as a result of birth or death |
| Prevalence | | The number of infected people in a population at a given point in time |
| SIR model | | Foundational model of infectious disease epidemiology, used for perfectly immunising infections such as measles. |
| State variable | | Describes the state of a population at a given point in time: for example, the number of susceptible people. Each compartment has an associated state variable representing the number of people in that compartment. |
| Stochastic model | | A model that may produce a range of outputs despite having fully specified parameters, as a result of incorporating probabilistic processes |
| Vaccination | | Use of a biological formulation to raise immunity without disease |
| Vectorial capacity | | The number of secondary cases arising per day from a single infective case in a totally susceptible human population |