

COVID-19 Modelling Glossary of Terms



This glossary relates specifically to the Public Health Agency of Canada ([PHAC](#)) [COVID-19 models](#), published in [Canada Communicable Disease Report \(CCDR\)](#) and [Canadian Medical Association Journal](#).

Agent based modelling: Mathematical model that measures the actions and interactions of independent ‘agents’ (people, places or objects) within a system

Asymptomatic: People infected with COVID-19 who never develop any symptoms of the disease but can spread it

Attack rate: Percentage of population that has COVID-19

Basic reproduction number: (R_0), Expected number of new cases generated from someone who has COVID-19

Case detection: Surveillance strategy that can identify infected individuals, resulting in reduced community transmission through isolation of these individuals within their households

Community closures: Public health measures to close schools, churches or other public and semi-public facilities, taken to reduce and prevent the spread of disease

Contact rate pre-intervention: The daily interactions between susceptible and infectious people before physical distancing was required

Contact rate reduction: The percentage of minimized interactions between susceptible and infectious people since implementation of actions to reduce the spread of disease

Contact trace effectiveness: Speed and accuracy of correctly identifying new persons with disease

Contact trace implementation day: The day that contact tracing was used in relation to the start of community transmission

Contact tracing: Identification of people who had close contact with someone who has been tested and diagnosed with a disease

Criterion: In the context of evaluating settings for COVID-19 transmission risk, criteria represent the concerns and risk factors over which settings are evaluated

Daily incidence rate: The proportion of population that gets COVID-19 each day

Deterministic compartmental model: Mathematical model of infectious disease dynamics

Duration of social distancing : duration of the limitation of social interactions and maintenance of 2 meters between people

Enhanced contact tracing: Rapid identification, testing and isolation of people who had an interaction with someone who has COVID-19

Enhanced testing: Measures such as speed, effectiveness and volume of testing in identifying disease

Enhanced testing implementation day: A day that testing was done more rapidly in reference to the start of community transmission

Epidemic: Sudden increase in the number of new cases of a disease above what is expected within a specific population

Epidemic curve: A graphic representation of the progression of COVID-19 spread over a population

Exposed heading to quarantine: Number of people who have been infected with COVID-19 and are isolating in place

Exposed: People who have been infected but are not yet infectious

Exposed quarantined: Number of exposed persons who are sent to quarantine per day as a result of contact tracing



Hamming distance: A metric used to compare two binary data strings. The Hamming distance between two equal-length strings of symbols is the number of positions at which the corresponding symbols are different

Immunization: Process by which a person becomes protected from disease through vaccination

Infected isolated: People who are infectious and are in quarantine or isolation

Infectious: People who have the disease and can transmit it

Infectious period: The time (10-day average for COVID-19) when spread from infectious to susceptible people can occur

Intervention: Measure taken to reduce and prevent the spread of disease

Kendall distance: The number of pairwise disagreements between two ranking lists. It can also be defined as the total number of discordant pairs

Latent period: Time interval between infection and ability to transmit disease (average of 4 days)

Mallow model: A probability model for distribution on permutation

Mitigation measure: Measures conceived to avoid, prevent or reduce an adverse effect

Non pharmaceutical interventions (NPIs): Actions that people, communities and governments can take in order to slow the spread of an infectious disease

Physical/ Social distancing: Reduction of daily contact with others and /or restrictive community measures to slow or end the spread of a communicable disease

Pre-symptomatic: People who are infected with the virus but are still developing the disease and do not yet experience any symptoms (typically 1-2 days before symptom onset for COVID-19)

Probability model: Mathematical description of an experiment listing all possible outcomes and their associated probabilities

Proportion of cases detected: Percentage of COVID-19 cases that are identified through contact tracing

Proportion severe: Percentage of population who have tested positive and display extreme symptoms of COVID-19

Proportion symptomatic: Percentage of population who test positive and display symptoms and have COVID-19

Quarantine: Isolation (14 days for COVID-19) for people who interacted with someone who has the disease

Recover/removed: People who had COVID-19 but either no longer experience symptoms and do not transmit the disease or have died

SARS-COV-2: The severe acute respiratory syndrome coronavirus 2 that is responsible for COVID-19

Severe hospitalized: The development of severe disease symptoms in a person with the disease that require hospitalization (average 3 days after infection for COVID-19)

Susceptible: People who have not yet been exposed

Susceptible-Exposed-Infectious-Recovered curves: Graphs of disease parameters

Susceptible-Exposed-Infectious-Recovered model: A method of simulating the flow of people between four specific states during the outbreak of a disease

Symptomatic: Persons who test positive for the disease and who display symptoms

Symptomatic mild: People who test positive for COVID-19 who display little in the way of symptoms

Symptomatic severe: People who test positive for COVID-19 and display extreme symptoms

Time for test result: The interval between testing for COVID-19 and finding out the outcome

Time to contact trace: The interval (1-7 days) between identifying a person with COVID-19 and tracing their contacts for quarantine

Total attack rate: Percentage of population that gets infected from COVID-19

Transmissibility with contact: Probability of spreading the disease through close contact, depending on the expected number of new cases directly generated by each person with COVID-19 and the number of daily interactions before social distancing measures

Transmission: spread of infectious disease from person to person

Variant of Concern: In the context of SARS-CoV-2, a variant of concern is a category of variant of the virus for which there is evidence of mutations linked with either one or a combination of the following: more rapid spread, increased disease severity, or decreased effectiveness of public health measures such as vaccines and other therapeutics