COVID-19: TACKLING THE NOVEL CORONAVIRUS LONDON SCHOOL OF

HYGIENE & TROPICAL MEDICINE



WEEK 3 WHAT RESEARCH HAS AND IS BEING DONE TO ADDRESS COVID-19? STEP 3.5 HOW CAN MODELLING HELP?

Frequently asked questions

Question	Answer
How reliable is modelling in predicting the spread of disease?	During the early stages of an outbreak, models are crucial to attempt to understand the dynamics of the infection in order to quickly enact control measures.
	Modelling estimates include a range of uncertainty (the credible interval) within which the true value lies. At the start of an outbreak, there is limited data available and the credible interval around the estimations made is wide to try to capture the true value within the interval. As more data are collected, this information is used to narrow the credible interval and produce more accurate estimations, but the early models are often crucial to understanding the dynamics of the infection.
	It is important that models make their underlying assumptions and what is and what is not known, clear. It is not possible to predict the future but using modelling we can estimate what might happen using data from this pandemic along with other information on healthcare capacity, population demographics and properties of the infection such as R0. More information can be found here - <u>https://www.nature.com/articles/d41586-020-01003-6</u>
What are the implications of under reported case numbers on model estimates?	Infectious disease models draw from multiple data sources and there are methods to correct for uncertainty around reported cases and mortality. An alternative method to estimate potential underreporting is to identify people who have recently returned from an area with a high number of cases of a disease and this was possible for COVID-19 as shown here - https://www.nejm.org/doi/full/10.1056/NEJMc2001899