COV/SAN/20/04 - Multiscale mathematical model to simulate COVID-19 infection

Mathematical models are vital in advising government strategy during pandemics. The way infectious diseases transmit, and spread is different depending on where individuals live and, on their movements, and interactions. This means that epidemic models must take spatial features into account for accurate predictions, which currently they do not do effectively. We also must consider how infections affect individuals differently, e.g. weaker immune systems, gender and age. We will create a spatial mathematical model for COVID-19 that simulates infection in the body and the spread of disease from person to person. This multiscale model will be capable of robust predictions.