Epidemiological Models: An epidemiological model attempts to **predict** how a virus will spread, based on assumptions regarding the frequency with which people encounter each other and the length of time a person is infectious. It is impossible to unequivocally identify the window of infectivity; therefore, these models are re-seeded with assumptions. For COVID-19, some of the assumptions (such as the duration of infection and the reproduction rate of the virus) were derived from early reports on cases in China, in which outbreaks of viral transmission were identified and timelines were constructed from self-reported dates of when individuals were in contact with each other and when symptoms began. The models assume infectivity begins prior to symptom onset and the "infectivity window" is determined using a probability equation called (usually assuming something called a gamma distribution). To identify the actual infectivity window empirically, we would need to take a group of subjects, infect them with a virus on a given day, expose a second group to their respiratory droplets over the entire course of the illness and determine what time of exposure corresponded to the most infections. Obviously, such an experiment is not ethical, which is why these epidemiological models are necessary. However, that doesn't mean we should ignore the limitations of modeling studies. Most of these models do not adjust predicted transmission based on the type of contact (living in the same house as someone vs encounters outside the home) and they combine pre-symptomatic and asymptomatic individuals into a single group. Many of the COVID-19 models assume transmission by asymptomatic individuals occurs at 70-75% the rate of a symptomatic individual-something that may be true for pre-symptomatic transmission in household settings, but not in the general population. These epidemiology studies are important for pandemic planning in hospitals and other healthcare settings but should not be presented as standalone evidence of viral dynamics. They can be used to guide the formulation of a hypothesis which can then be proven or disproven. They should not be presented as fact until they are disproven, which is what has been happening these past two years.