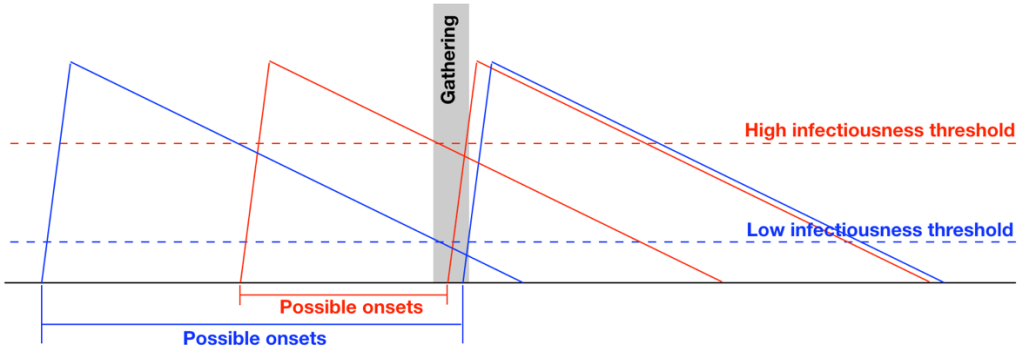

S19 Fig. Illustration of why effective sensitivity declines more sharply with testing delays for high vs. low infectiousness thresholds. For a given viral trajectory conditioned on infectiousness during a gathering, there is a wider range of possible proliferation onset times when the infectiousness threshold is low (blue) *vs.* when the infectiousness threshold is high (red). Additionally, the range of possible onset times for the low infectiousness threshold *vs.* the high infectiousness threshold is skewed to the left since the clearance time is longer than the proliferation time. Because of this, a low infectiousness threshold makes it easier for a pre-gathering test to pick up a trajectory that would be infectious at the time of the gathering. Conversely, a high infectiousness threshold shortens the window of possible onset times that guarantee infectiousness during the gathering, making it more difficult for a pre-gathering test to detect the trajectory. This is reflected in the steeper decline in the effective sensitivity for a high infectiousness threshold (Ct = 20) than for a low infectiousness threshold (Ct = 35) (**S18 Fig, A/C**).