**Extended data**

**Supplementary Table 1:** Parameter estimates for the exponential decay model with no plateau (Model 1) and including a plateau (Model 2) for random samples of individuals infected with the Alpha variant chosen to match the distribution of Ct values seen in individuals infected with wildtype.

**Supplementary Figure 1:** Best fit exponential decay model with no plateau (dark green line) and 95% credible interval fit to subsets of the data. Data (black points) and 95% Binomial confidence intervals (black error bars) are included for the proportion of tests that were positive. (A) Model fit to all individuals aged between 18 and 40 years inclusive. (B) Model fit to all individuals aged between 41 and 59 years inclusive.(C) Model fit to all individuals aged 60 years and over. (D) Model fit to all individuals reporting having the most predictive COVID-19 symptoms in the month prior to their first test. Note that the models are not fit to the data as presented, but to the exact ordering of test outcomes for each individual.

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