

Additional File 2: Bayesian survival model priors and likelihoods

Priors

$$\beta_i \sim N(\mathbf{0}, \sigma_\beta) \text{ for } i = 1, 2, \dots, 12$$

$$Z_j \sim N(\mathbf{0}, \sigma_Z) \text{ for } j = 1, 2, \dots, 62$$

$$\sigma_\beta \sim \text{Exp}(1)$$

$$\sigma_Z \sim \text{Exp}(1)$$

$$\log c_k \sim N(\log c_{k-1}, \frac{1}{10}(t_k - t_{k-1}))$$

Likelihoods

Given a survival curve $S(t)$, the likelihood of an individual being RDT positive at time t_{lower} and RDT negative at t_{upper} is

$$P(t_{lower} < t < t_{upper}) = S(t_{lower}) - S(t_{upper})$$

For individuals who are still RDT positive at time of the end of study, t_{max} , is

$$P(t > t_{max}) = S(t_{max})$$