

Parameter	Description	Units	Prior
Clone-specific parameters¹			
ω	burst size of pRBCs	parasites	$N_T(7, 0.5^2)^2$
P_0	initial parasite density	parasites/ μl	$\log P_0 \sim N(1.5, 0.5^2)$
β_R	infection rate of reticulocytes	$\mu\text{l}/\text{cell}\cdot\text{s}$	
β_N	infection rate of normocytes	$\mu\text{l}/\text{cell}\cdot\text{s}$	
ρ	β_R/β_N		$\log \rho \sim N(0, 1)$
κ	parasite death rate within multiply parasitised RBCs	day^{-1}	$\text{Exp}(1)$
μ	background loss rate of merozoites	s^{-1}	
$\hat{\mu}$	μ/β_N	cells/ μl	$\text{Exp}(5 \times 10^6)$
ν	background loss rate of pRBCs	day^{-1}	$\text{Exp}(1)$
c_m	maximum adaptive immune clearance rate of merozoites	s^{-1}	
\hat{c}_m	c_m/β_N	cells/ μl	$\text{Exp}(10^8)$
c_p	maximum adaptive immune clearance rate of pRBCs	day^{-1}	$\text{Exp}(1)$
d_m	duration of adaptive immune clearance of merozoites	day	$U(0, 20)$
d_p	duration of adaptive immune clearance of pRBCs	day	$U(0, 20)$
<i>Piecewise linear adaptive immune response</i>			
s_m	start day of clearance of merozoites	day	$U(5, 20)$
s_p	start day of clearance of pRBCs	day	$U(5, 20)$
r_m	rise time of clearance of merozoites	day	$U(1, 20)$
r_p	rise time of clearance of pRBCs	day	$U(1, 20)$
<i>Exponential adaptive immune response</i>			
s_m	first day of maximum clearance of merozoites	day	$U(5, 20)$
s_p	first day of maximum clearance of pRBCs	day	$U(5, 20)$
<i>Sigmoidal adaptive immune response</i>			
s_m	day of half maximum clearance of merozoites	day	$U(5, 20)$
s_p	day of half maximum clearance of pRBCs	day	$U(5, 20)$
r_m	rate of increase of clearance of merozoites	day^{-1}	$\text{Exp}(1)$
r_p	rate of increase of clearance of pRBCs	day^{-1}	$\text{Exp}(1)$
Clone-non-specific parameters			
A	maturation age of reticulocytes	day	2
θ	rate of up-regulation of erythropoiesis	day^{-1}	$N_T(0.3, 0.1^2)$
τ	time lag in erythropoiesis	day	$U(0, 6)$
K	normal RBC density	cells/ μl	$N_T(10^7, 10^{12})$
d	natural death rate of RBCs	day^{-1}	0.025
δ_m	increased death rate of multiply parasitised RBCs	day^{-1}	$\text{Exp}(1)$
ν_{both}	$\frac{\nu_{\text{AS}} + \nu_{\text{AJ}}}{2}$, loss of AJ+AS pRBCs	day^{-1}	
c_u	maximum bystander clearance rate of uRBCs	day^{-1}	$\text{Exp}(1)$
s_u	start day of bystander clearance of uRBCs	day	$U(0, 20)$
r_u	rise time of bystander clearance of uRBCs	day	$U(1, 20)$
d_u	duration of bystander clearance of uRBCs	day	$U(0, 20)$

Table S2: Model parameters. ¹Dependence on AS and AJ removed for brevity. ² N_T is a Normal distribution truncated at 0.