S1 Table: Description of parameters for malaria transmission model.

Parameter	Description	Value	Reference
Mosquitoes			
a	mosquito biting frequency ($a = Q/\delta$)	0.21 day^{-1}	calculated
Q	human blood index (*An. farauti*)	0.64	[1]
δ	length of gonotrophic cycle	3 days	[2]
n	duration of sporogony in mosquito	12 days	[3]
g	mosquito death rate ⇔ 1/mosquito life expectancy	0.1 day^{-1}	[3]
c	transmission probability: human to mosquito (*An. darlingi)*	0.23	[4]
m	number of mosquitoes per human (*P. vivax*)	0.56 (0.511)[a]	calculated
m	number of mosquitoes per human (*P. falciparum)*	1.45 (1.362) [a]	calculated
Humans			
b	transmission probability: mosquito to human	0.5	[5]
r	rate of clearance of blood-stage infections	1/60 day^{-1}	[6]
f	relapse frequency (~ time to first relapse)	1/125 day^{-1}	[7]
γ	rate of hypnozoite clearance	1/500 day^{-1}	[8]
Treatment			
	coverage (5% pregnant women, 15% missed or refused)	80%	[d]
	diagnostic sensitivity (molecular PCR)	80%	[e]
	diagnostic specificity	95%	[e]
	duration of prophylactic protection (DHA-PIP/chloroquine)[b]	30 days	[9]
	duration of causal prophylactic protection (14 day PQ regimen)[c]	15 days	
	duration of prophylactic protection (tafenoquine)[c]	60 days	[10]
	primaquine effectiveness (5% G6PD deficient, 20% failure including 5% CYP 2D6 low metaboliser)	75%	[10]
	tafenoquine effectiveness (5% G6PD deficient, 5% failure including CYP 2D6 low metaboliser)	90%	[10]

[a]Estimated numbers of mosquitoes per human predicted to give an equilibrium parasite prevalence of 20% in the deterministic (stochastic) model. [b]Prophylactic prevention of new blood-stage infections. [c]Prophylactic prevention of new blood-stage and liver-stage infections. [d] Intervention coverage was set at 80%, based on the assumption that pregnant women, who can not be treated with primaquine, represent 5% of the population and that 15% of the population are either missed or refused to participate. This level of participation is comparable to that achieved in recent trials of mass drug administration for the elimination of yaws [11]. [e] The choice of 80% diagnostic sensitivity reflects both the limited detectability of *Plasmodium spp.* by standard PCR (~90% [12]) and the presence of infections with ultra-low parasites

densities that are below the limit of detection of standard PCR [13]. Although PCR-based diagnosis is highly specific, diagnostic specificity was assumed to be 95% to account for either non-specific amplifications and/or human errors.

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