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| **Variables and parameters**d = 1/gametocyte lifespan in density model (logd = natural logarithm of d)G0 = gametocyte density on day 0 (logG0 = natural logarithm of G0)loggam\_m = natural logarithm of density of male gametocytesloggam\_f = natural logarithm of density of female gametocyteszero\_m = indicator variable for censored observation for male gametocyte density– ie male gametocyte density measured as zero so assumed below detection threshold.zero\_f = indicator variable for censored observation for female gametocyte density– ie female gametocyte density measured as zero so assumed below detection threshold.varre = variance of subject level random effect (logvarre = its natural logorathm)varloggamd = variance of log gametocyte density around predicted value (logvarloggamd = its natural logarithm)sdloggamd = standard deviation of variance of log gametocyte density around predicted value (ie square root of varloggamd)lg0 = mean predicted log gametocyte density e = subject level random effectloggamd = subject specific predicted log gametocyte densityll = log likelihood**Model code**proc nlmixed data=**’datasetname’** alpha=0.05;parms logd=-2 logvarre=0 logG0=5 logvarloggamd=0 ;d = exp(logd);G0=exp(logG0);varre = exp(logvarre);varloggamd=exp(logvarloggamd);sdloggamd = sqrt(varloggamd);lg0= log(exp(-d\*day)\*G0);loggamd = e + lg0;if (zero\_m=0) then ll=-0.5\*logvarloggamd-(1/(2\*varloggamd))\*(loggam\_m-loggamd)\*\*2; else ll=log(probnorm((loggam\_m-loggamd)/sdloggamd));model loggam\_m~general(ll);random e ~normal(0, varre) subject=id;estimate "mean male gct circulation time" 1/exp(logd);run;proc nlmixed data=**’datasetname**’ alpha=0.05;parms logd=-2 logvarre=0 logG0=5 logvarloggamd=0 ;d = exp(logd);G0=exp(logG0);varre = exp(logvarre);varloggamd=exp(logvarloggamd);sdloggamd = sqrt(varloggamd);lg0= log(exp(-d\*day)\*G0);loggamd = e + lg0;if (zero\_f=0) then ll=-0.5\*logvarloggamd-(1/(2\*varloggamd))\*(loggam\_f-loggamd)\*\*2; else ll=log(probnorm((loggam\_f-loggamd)/sdloggamd));model loggam\_f~general(ll);random e ~normal(0, varre) subject=id;estimate "mean female gct circulation time" 1/exp(logd);run; |

**Supplementary File 7. SAS code used for estimation of gametocyte half-life for gametocytes**