

Table 1: Parameters for the cholera model.

	$\hat{\theta}$	θ_{low}	θ_{high}
γ	20.80	10.00	40.00
ϵ	19.10	0.20	30.00
m	0.06	0.03	0.60
$\beta_{\text{trend}} \times 10^2$	-0.50	-1.00	0.00
β_1	0.75	-4.00	4.00
β_2	6.38	0.00	8.00
β_3	-3.44	-4.00	4.00
β_4	4.23	0.00	8.00
β_5	3.33	0.00	8.00
β_6	4.55	0.00	8.00
ω_1	-1.69	-10.00	0.00
ω_2	-2.54	-10.00	0.00
ω_3	-2.84	-10.00	0.00
ω_4	-4.69	-10.00	0.00
ω_5	-8.48	-10.00	0.00
ω_6	-4.39	-10.00	0.00
σ	3.13	1.00	5.00
τ	0.23	0.10	0.50
S_0	0.62	0.00	1.00
I_0	0.38	0.00	1.00
$R_{1,0}$	0.00	0.00	1.00
$R_{2,0}$	0.00	0.00	1.00
$R_{3,0}$	0.00	0.00	1.00

$\hat{\theta}$ is the MLE reported by [?]. Three parameters were fixed ($\delta = 0.02$, $N_s = 6$ and $k = 3$) following [?]. Units are year^{-1} for γ , ϵ , m , β_{trend} and δ ; all other parameters are dimensionless. θ_{low} and θ_{high} are the lower and upper bounds for a hyper-rectangle used to generate starting points for the search. Non-negative parameters (γ , ϵ , m , σ , τ) were logarithmically transformed for optimization. Unit scale parameters (S_0 , I_0 , $R_{1,0}$, $R_{2,0}$, $R_{3,0}$) were optimized on a logistic scale. These parameters were rescaled using the known population size to give the initial state variables, e.g., $S(t_0) = S_0\{S_0 + I_0 + R_{1,0} + R_{2,0} + R_{3,0}\}^{-1}P(t_0)$.