

Model Parameter	Symbol	Min. Value	Max. Value	Value
Detectability rate	κ	0.00	1.00	0.05
Immigration rate	μ	0.00	100.00	5.00
Contact rate	β	0.00	100.00	4.00
Infectivity	b	0.01	10.00	0.80
Pre-symptomatic infectivity factor	ϕ	0.01	10.00	0.50
Isolation effectiveness of strong cases	ϵ_I	0.00	0.50	0.10
Isolation effectiveness of serious cases	ϵ_Y	0.00	50.00	0.90
Rate of the appearance of infectious capacity	σ	0.00	10.00	0.25
Rate of the appearance of symptoms	γ_1	0.00	10.00	0.25
Age-dependent probability of the appearance of strong symptoms (p_0)	p_0	0.00	2.00	0.10
Rate of appearance of serious symptoms	α	0.00	2.00	0.50
Disease-induced mortality	δ	0.00	100.00	0.25
Rate of recovery	γ_2	0.00	1000.00	0.10
Contact Matrix Element [00]	β_{00}	0.00	100.00	4.00
Contact Matrix Element [01]	β_{01}	0.00	100.00	4.00
Contact Matrix Element [02]	β_{02}	0.00	0.01	4.00
Contact Matrix Element [03]	β_{03}	0.00	1.00	4.00
Contact Matrix Element [10]	β_{10}	0.00	10.00	4.00
Contact Matrix Element [11]	β_{11}	0.00	2.00	4.00
Contact Matrix Element [12]	β_{12}	0.00	2.00	4.00
Contact Matrix Element [13]	β_{13}	0.00	2.00	4.00
Contact Matrix Element [20]	β_{20}	0.00	100.00	4.00
Contact Matrix Element [21]	β_{21}	0.00	1000.00	4.00
Contact Matrix Element [22]	β_{22}	0.00	100.00	4.00
Contact Matrix Element [23]	β_{23}	0.00	100.00	4.00
Contact Matrix Element [30]	β_{30}	0.00	0.01	4.00
Contact Matrix Element [31]	β_{31}	0.00	1.00	4.00
Contact Matrix Element [32]	β_{32}	0.00	10.00	4.00
Contact Matrix Element [33]	β_{33}	0.00	2.00	4.00
Age-dependent Alpha Rate [0]	α_0	0.00	2.00	0.50
Age-dependent Alpha Rate [1]	α_1	0.00	2.00	0.50
Age-dependent Alpha Rate [2]	α_2	0.00	100.00	0.50
Age-dependent Alpha Rate [3]	α_3	0.00	1000.00	0.50
Age-dependent disease-induced mortality [0]	δ_0	0.00	100.00	0.25
Age-dependent disease-induced mortality [1]	δ_1	0.00	100.00	0.25
Age-dependent disease-induced mortality [2]	δ_2	0.00	0.01	0.25
Age-dependent disease-induced mortality [3]	δ_3	0.00	1.00	0.25
Age-dependent probability of the appearance of strong symptoms (p_1)	p_1	0.00	10.00	0.10
Age-dependent probability of the appearance of strong symptoms (p_2)	p_2	0.00	2.00	0.30

Age-dependent probability of the appearance of strong symptoms (p_3)	p_3	0.00	2.00	0.50
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Table 1: caption for this table