**Supplementary File 1. Estimated parameters of the three models**

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| Parameter Name | Symbol (Unit) | Baseline model | “Eclipse phase” model | “Innate immune response” model |
| Maximum rate constant for viral replication | (day-1) |  |  |  |
| Rate constant for virus infection | ([copies/ml]-1 day-1) |  |  |  |
| Death rate of infected cells | (day-1) |  |  |  |
| Viral load at symptom onset | (copies/ml) |  |  |  |
| Ratio of infected cells | (unitless) | -- |  | -- |
| Mean length of eclipse phase | (day) | -- |  | -- |
| Concentration of INFs | (concentration) | -- | -- |  |
| Concentration of INFs that produces a half-maximum rate constant for viral replication | (concentration) | -- | -- |  |
| Rate constant which is proportional to secretion of INFs from infected cells | (day-1) | -- | -- |  |
| Removal rate of IFNs | (day-1) | -- | -- |  |

&The unit is [copies/ml] day-1. \*Parameter values are fixed based on previous studies (Gonçalves et al., 2020; Néant et al., 2021). #Parameter values are assumed.