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***Research article***

**Phenomenological and mechanistic models for predicting early transmission data of COVID-19**

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**Supplementary**

**Table S1.** Estimated parameters and basic reproduction numbers from the model calibrations using reported COVID-19 cases in China. Three different data periods (cutoff dates of February 1, 5, and 9) were used for the calibrations.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Data cutoff date** |  |
| **Parameters** | **1-Feb** | **5-Feb** | **9-Feb** |
| Richards model |  |  |  |
| *ti* | 44.38 (27.10, 48.20) | 30.86 (30.51, 31.29) | 32.80 (32.56, 33.04) |
| *a* | 1.30 (1.09, 2.90) | 0.76 (0.59, 0.90) | 0.52 (0.44, 0.60) |
| *K* | 2337170 (13042, 7605149) | 36752 (33587, 40517) | 53314 (50703, 56021) |
| *r* | 0.42 (0.35, 1.05) | 0.30 (0.25, 0.34) | 0.22 (0.20, 0.23) |
| SIR approximation model |  |  |  |
| *S0* | 54020.83 (51761.19, 56057.67) | 81297.15 (79812.45, 82576.59) | 94596.18 (93594.41, 95454.09) |
| *β* | 1.0×10-5 (1.0×10-5, 1.1×10-5) | 6.8×10-6 (6.7×10-6, 6.9×10-6) | 5.8×10-6 (5.7×10-6, 5.9×10-6) |
| *ρ* | 19856 (20806, 19124) | 30510 (31119, 30018) | 35901 (36290, 35582) |
| Exponential with lockdown model |  |  |  |
| *i0* | 6.48 (5.75, 7.15) | 9.15 (8.25, 9.96) | 9.41 (8.55,10.16) |
| *r1* | 0.29 (0.29, 0.30) | 0.27 (0.26, 0.27) | 0.27 (0.26, 0.27) |
| *r2* | -5.04 (-12.99, -0.98) | -0.21 (-0.25, -0.18) | -0.17 (-0.18, -0.16) |
| SIR with lockdown model |  |  |  |
| *i0* | 28.7 (26.1, 31.6) | 27.3 (24.4, 29.6) | 23.9 (21.6, 26.0) |
| *β1* | 0.51 (0.50, 0.51) | 0.51 (0.50, 0.51) | 0.52 (0.51, 0.52) |
| *β2* | 2.3×10-5 (8.3×10-9, 1.2×10-1) | 0.21 (0.19, 0.22) | 0.18 (0.17, 0.18) |