**Table S4:**

**Fitting multidimensional surfaces to simulated data of the agent-based model.**

Here, the root means square errors (RMSD) are calculated to find the best mathematical expression to the simulated estimates of wild-type COVID-19 reproduction number (R0WT). The equations have four parameters: Decrease in working hours DW, social distancing measure (SDM), stay-at-home restriction (SH), and vaccination ratio (Vac). The row shaded by grey demonstrates the best mathematical expression for simulated data.

|  |  |  |
| --- | --- | --- |
|  | **Equation** | **RMSD** |
| A | $$d+a∙DW+b∙SH+c∙\frac{Vac}{100}+e∙\frac{SDM}{100}$$ | 0.0303 |
| B | $$d+a∙DW+b∙SH+c∙\frac{Vac}{100}+e∙\frac{SDM}{100}+f∙\left(\frac{SDM}{100}\right)^{2}$$ | 0.0248 |
| C | $$d+a∙DW+b∙SH+c∙\frac{Vac}{100}+f∙\left(\frac{Vac}{100}\right)^{2}+e∙\frac{SDM}{100}$$ | 0.0293 |
| D | $$d+a∙DW+b∙SH+f∙\left(SH\right)^{2}+c∙\frac{Vac}{100}+e∙\frac{SDM}{100}$$ | 0.0302 |
| E | $$d+a∙DW+f∙\left(DW\right)^{2}+b∙SH+c∙\frac{Vac}{100}+e∙\frac{SDM}{100}$$ | 0.0303 |
| F | $$\left(d+a∙DW+b∙SH+c∙\frac{Vac}{100}\right)∙\left(1+e∙\frac{SDM}{100}\right)$$ | 0.0139 |
| G | $$\left(d+a∙DW+b∙SH+c∙\frac{SDM}{100}\right)∙\left(1+e∙\frac{Vac}{100}\right)$$ | 0.0196 |
| H | $$\left(d+a∙DW+b∙\frac{Vac}{100}+c∙\frac{SDM}{100}\right)∙\left(1+e∙SH\right)$$ | 0.0224 |
| J | $$\left(d+a∙SH+b∙\frac{Vac}{100}+c∙\frac{SDM}{100}\right)∙\left(1+e∙DW\right)$$ | 0.0300 |
| K | $$\left(d+a∙DW\right)∙\left(1+b∙SH\right)∙\left(1+c∙\frac{Vac}{100}\right)∙\left(1+e∙\frac{SDM}{100}\right)$$ | 0.0131 |
| L | $$\left(d+a∙DW+b∙SH\right)∙\left(1+c∙\frac{Vac}{100}\right)∙\left(1+e∙\frac{SDM}{100}\right)$$ | 0.0130 |
| M | $$\left(d+a∙DW+b∙SH+c∙\frac{Vac}{100}\right)∙\left(1+e∙\frac{SDM}{100}+f∙\left(\frac{SDM}{100}\right)^{2}\right)$$ | 0.0060 |
| N | $$\left(d+a∙DW+b∙SH+c∙\frac{Vac}{100}+f∙\left(\frac{Vac}{100}\right)^{2}\right)∙\left(1+e∙\frac{SDM}{100}\right)$$ | 0.0130 |

**Table S4:**

**Fitting multidimensional surfaces to simulated data of the agent-based model (Continue).**

Here, the root means square errors (RMSD) are calculated to find the best mathematical expression to the simulated estimates of wild-type COVID-19 reproduction number (R0WT). The equations have four parameters: Decrease in working hours DW, social distancing measure (SDM), stay-at-home restriction (SH), and vaccination ratio (Vac). The row shaded by grey demonstrates the best mathematical expression for simulated data.

|  |  |  |
| --- | --- | --- |
| O | $$\left(d+a∙DW+b∙SH+f∙\left(SH\right)^{2}+c∙\frac{Vac}{100}\right)∙\left(1+e∙\frac{SDM}{100}\right)$$ | 0.0139 |
| P | $$\left(d+a∙DW+f∙\left(DW\right)^{2}+b∙SH+c∙\frac{Vac}{100}\right)∙\left(1+e∙\frac{SDM}{100}\right)$$ | 0.0139 |
| R | $$\left(d+a∙DW+b∙SH+c∙\frac{Vac}{100}+e∙\frac{SDM}{100}+f∙\left(\frac{SDM}{100}\right)^{2}+g∙\left(\frac{SDM}{100}\right)^{3}\right)$$ | 0.0246 |
| S | $$\left(d+a∙DW+b∙SH+c∙\frac{Vac}{100}\right)∙\left(e∙\frac{SDM}{100}+f∙\left(\frac{SDM}{100}\right)^{2}+g∙\left(\frac{SDM}{100}\right)^{3}\right)$$ | 0.0057 |