

## S1 Appendix. Equations and parameters used in the SEIR model.

Total population:  $N = S(t) + E(t) + I(t) + R(t)$

$$\frac{dS(t)}{dt} = -\beta S(t)I(t)$$

$$\frac{dE(t)}{dt} = \beta S(t)I(t) - \epsilon E(t)$$

$$\frac{dI(t)}{dt} = \epsilon E(t) - \gamma I(t)$$

$$\frac{dR(t)}{dt} = \gamma I(t)$$

$\beta$  = interaction frequency among individuals \* probability of transmission of the disease

$$\epsilon = \frac{1}{\text{incubation period}}$$

$$\gamma = \frac{1}{\text{infectious period}}$$

Where:

$S(t)$ : Fraction of population that is susceptible.

$E(t)$ : Fraction of population that is exposed to infection.

$I(t)$ : Fraction of the population that is infected.

$R(t)$ : Fraction of population that has recovered or died.

$\beta$ : Contact rate

$\epsilon$ : Rate at which exposed individuals become infected.

$\gamma$ : Recovery rate.

Parameter	Value	Source
Infectious period	7.5 days	Comité Operativo de Emergencias UMSA. Situación y proyecciones de COVID-19 en Bolivia: 3er reporte. La Paz - Bolivia:
Incubation period	6 days	Universidad Mayor de San Andrés, May, 2020. Report No.: 3.
Interaction frequency	8.1	Birbuet JC, López R. Dinámica de expansión del COVID-19 en Bolivia durante las primeras 6 semanas. 2020.
Initial number of infected people	30	