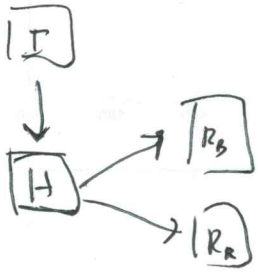
Sara: ① Why SEIR? → ≈ 21 day exposure period

Range ≈ 10–12 days (21–30 days max)

② Hospitalization — source of infection (new compartment)

⊛ Paper: Chowell



No $H \rightarrow R_I$ because the spread here is negligible

③ β_1, β_2 → should represent transmission rates

infection term = $\beta \frac{S}{N} \left(I + x_1 H + x_2 R_I \right)$

$x_1, x_2 \in (0,1)$

N = total population (fixed constant)

④ Fatality rate? → changes depending on geographic location (Healthcare structure)

30–50% typically (up to 80%)

⑤ Fitting → infection rates (k_1, k_2)
duration of infection (γ)
incubation period (μ)

⊛ μ – should represent death rates; change incubation period variable from μ to ?

⊛ γ – infection period (varies greatly)

⊛ Hospitalization rate – these want optimal rate → $\min_{h \geq 0} \int_0^T I(t; h, x_1, x_2)\, dt$