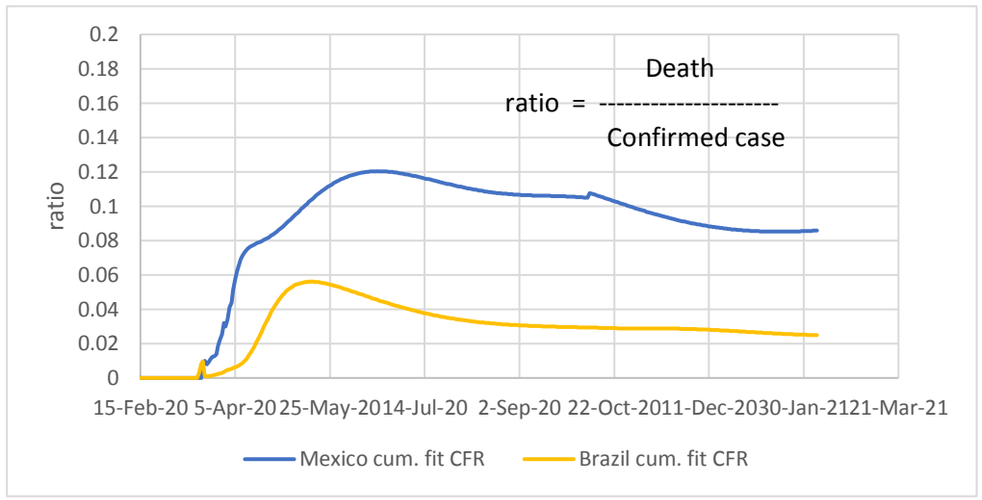
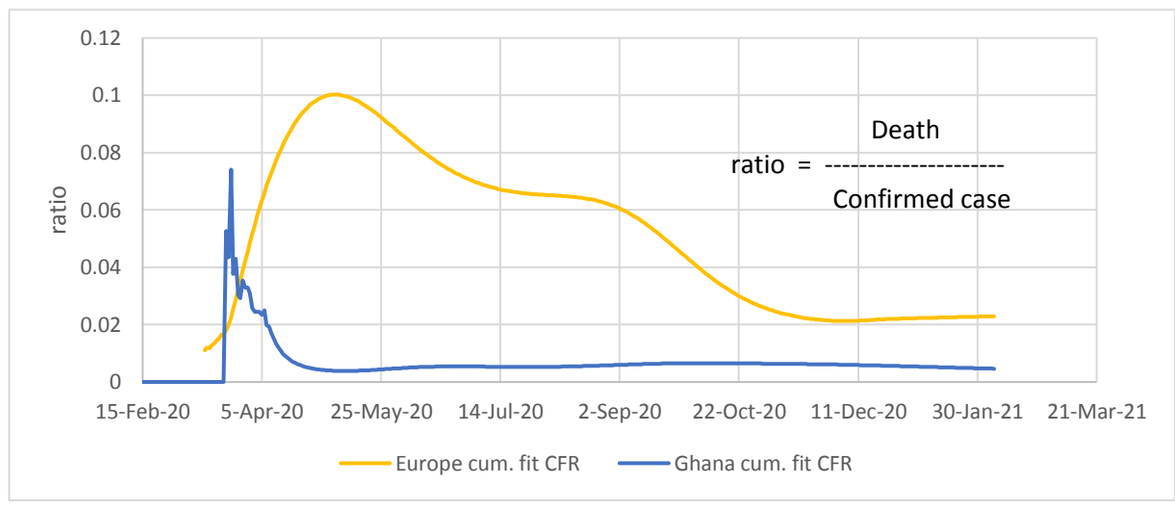
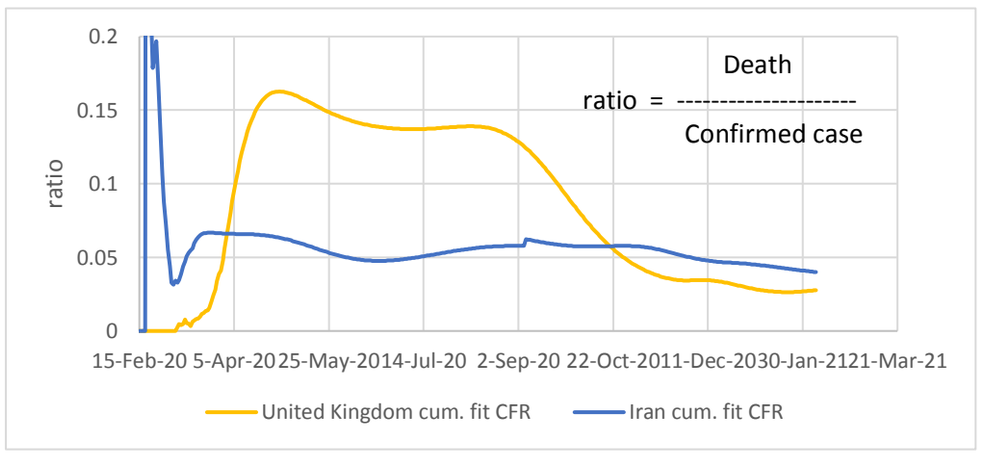
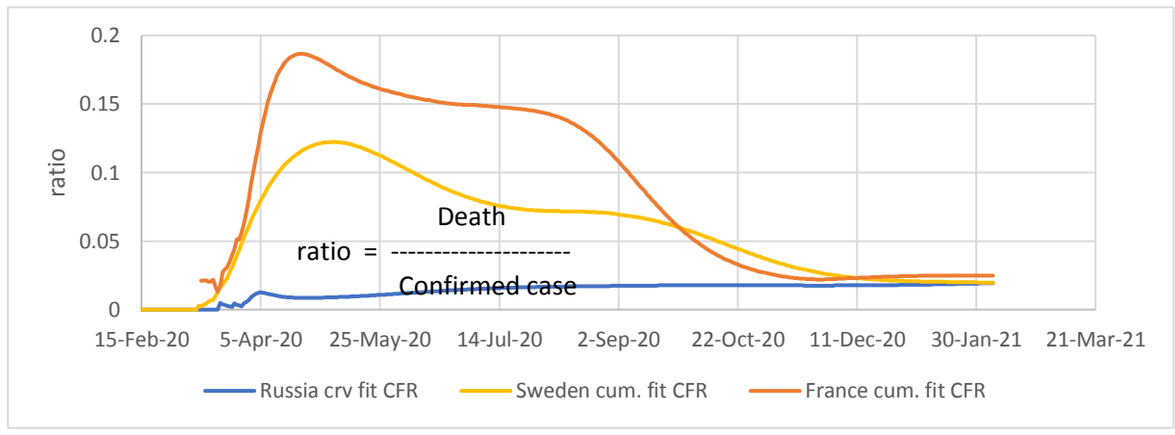
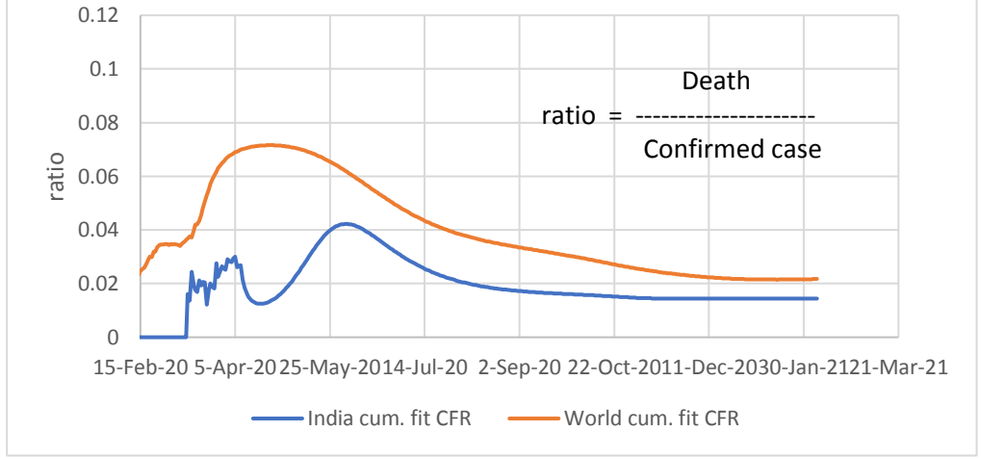
# Experimental page : ratios of curve fit deaths to curve fit confirmed cases (CFR)

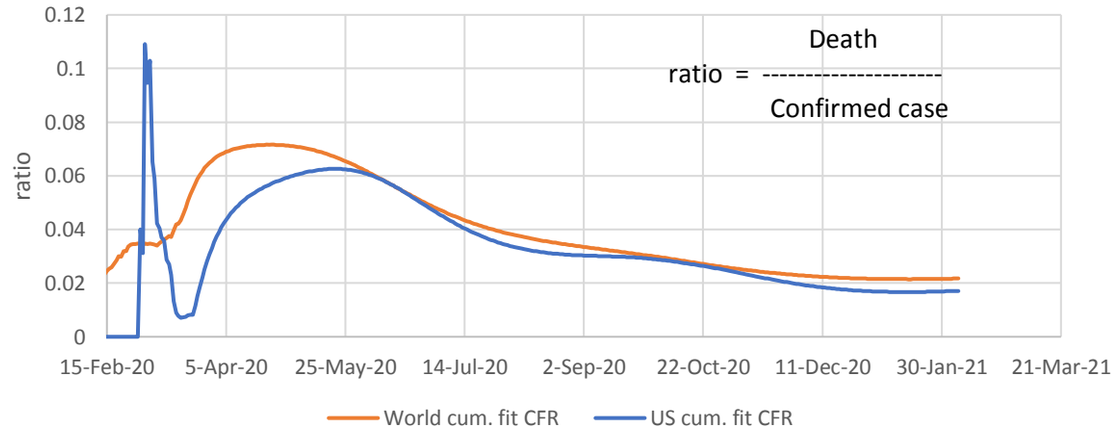


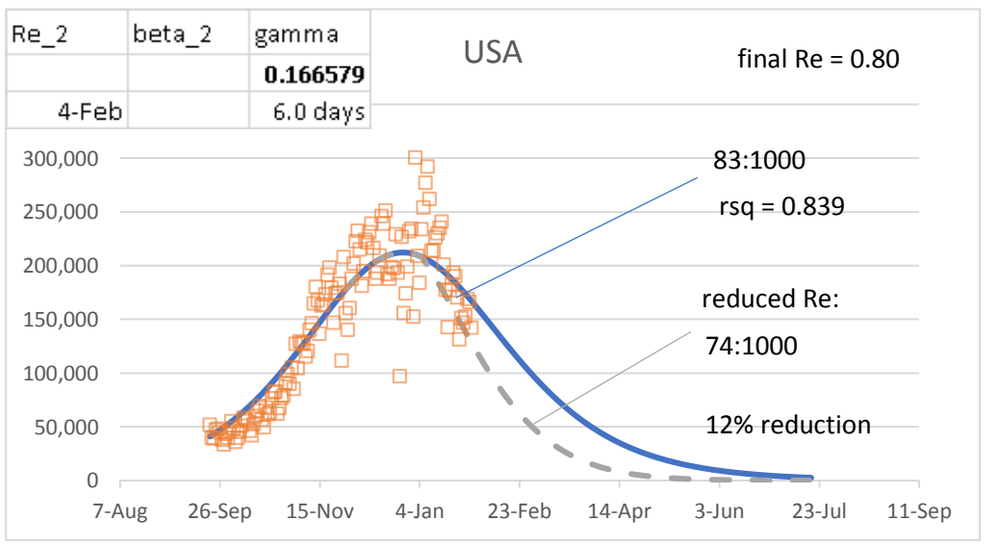



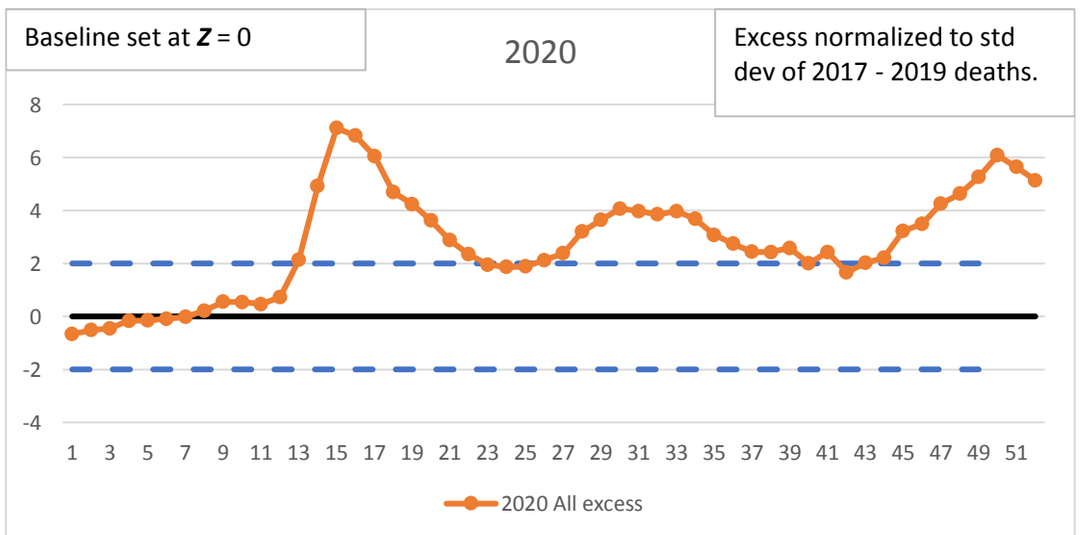



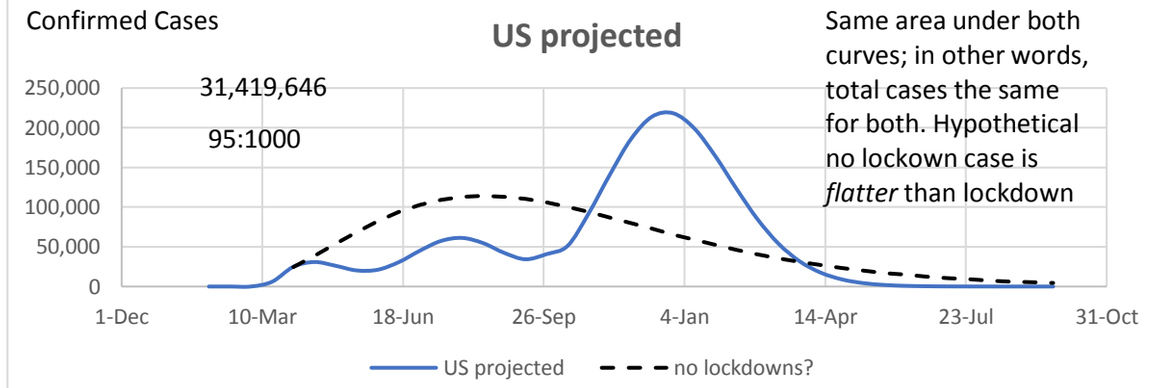



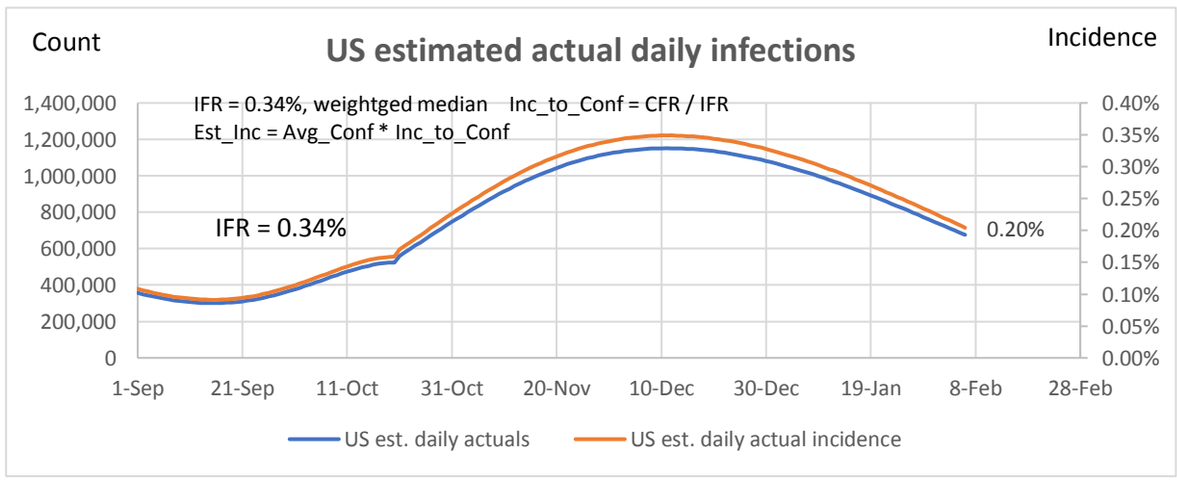

Demonstration of SIR model where $R_e$ is linearly reduced to 0.80 at the end of the sequence:




Reducing the $R_e$ while keeping gamma constant is the same as reducing contact rate. Contact rate is reduced through isolation, lockdowns, and vaccinations. Seems to indicate timing of start of measures is a big factor. The orange data taken as without measures, but we know certain measures were taken. Hard to determine effect, without a basis of comparison.




False Positives Demonstration

Use 0.20% from US est. incidence above as estimated daily incidence

*Prevalence* estimated as avg. infected period of 2 weeks X incidence

0.20% X 14 = 2.800%

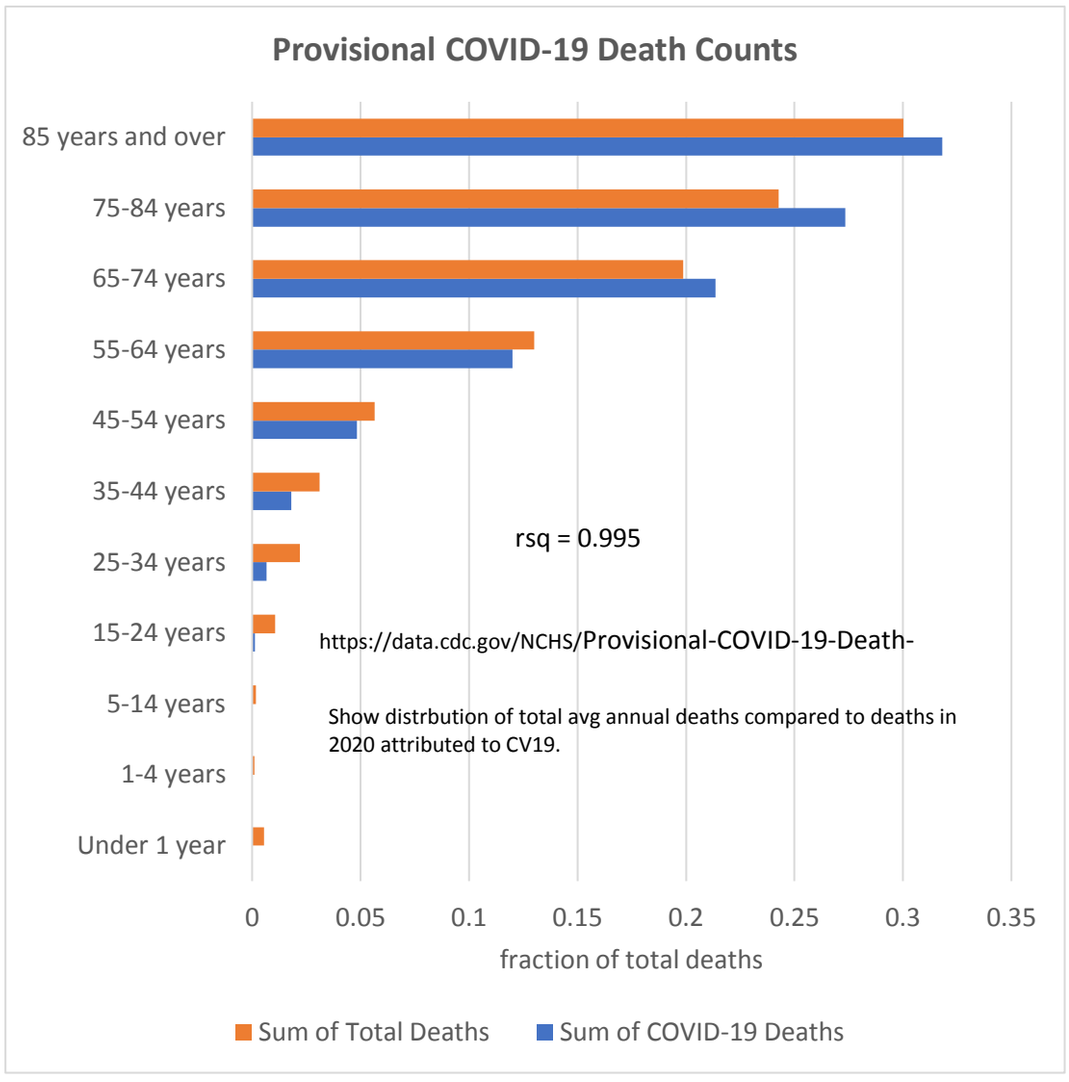
99% accuracy of test

| | Positive | Negative | |
|---|---|---|---|
| test pos | 2.772% | 0.972% | 3.74% |
| test neg | 0.028% | 96.228% | 96.26% |
| | 2.800% | 97.200% | 100.00% |

False pos. is a 1/4 of total positives.

| | | |
|---|---|---|
| TRUE + | 2.772%/3.74% | 74.0% |
| FALSE + | 0.972%/3.74% | 26.0% |
| Total | ---------- | 100.00% |

Counter-act this tendency by increasing test sensitivity. However this may increase false negatives, the recipients of which may be positive, think they're negative, and go spread it around some more.




**USA Excess Deaths (from CDC data):**

Annualized on 52 weeks

| | All Cause | All Cause, excl. CV19 | CV19 |
|---|---|---|---|
| 3 yr average before 2020 | 859:100,000 | 859:100,000 | - |
| 2020 | 1004:100,000 | 898:100,000 | - |
| Diff. | 148:100,000 | 39:100,000 | 109:100,000 |

| 3 yr average |
|---|
| 859:100,000 |

26% of All-Cause excess deaths are non-CV19

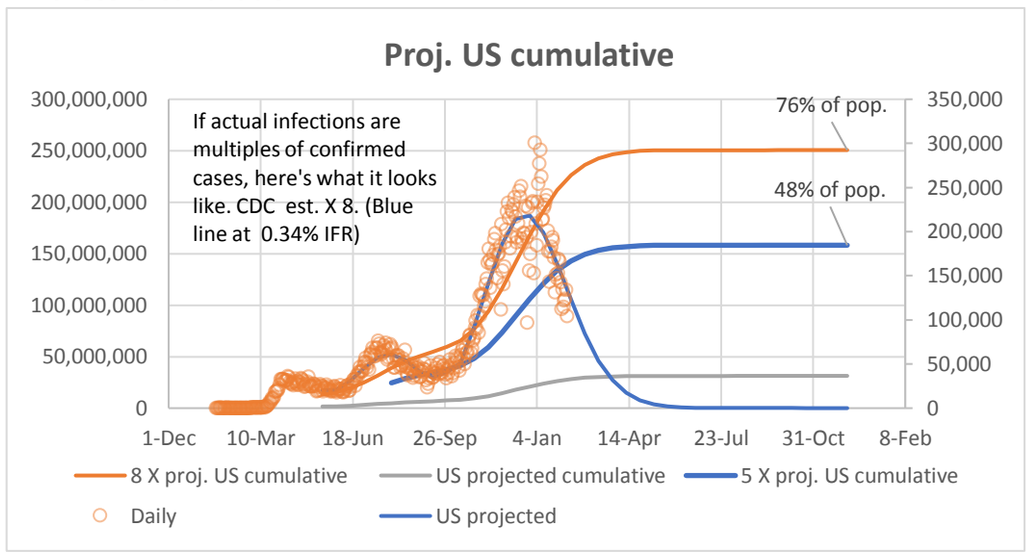
https://data.cdc.gov/NCHS/Excess-Deaths-Associated-with-COVID-19/xkkf-xrst/data

$K$ = 0.318

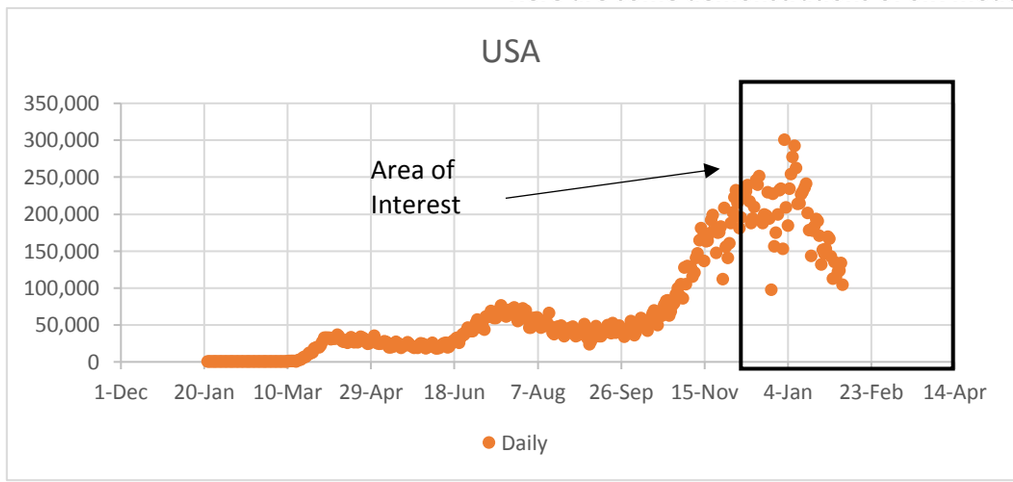
gamma = 0.171 $R_o$ = exp($K$/gamma) = 6.42 84%

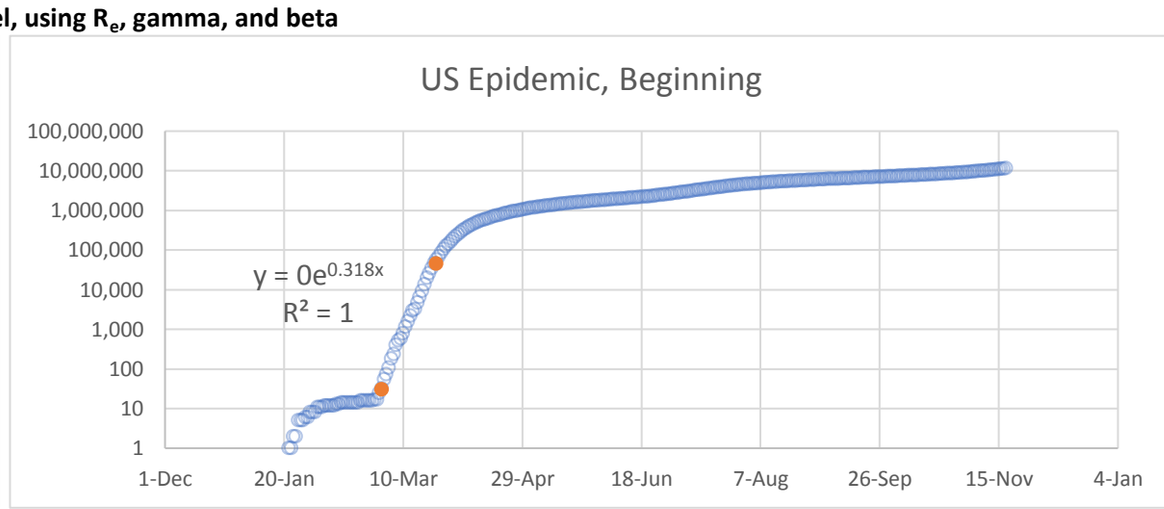
gamma = 0.286 $R > [1 - 1/R_0]/N$ = 3.04 67% <=Herd immunity

$R$ is recovered variable.

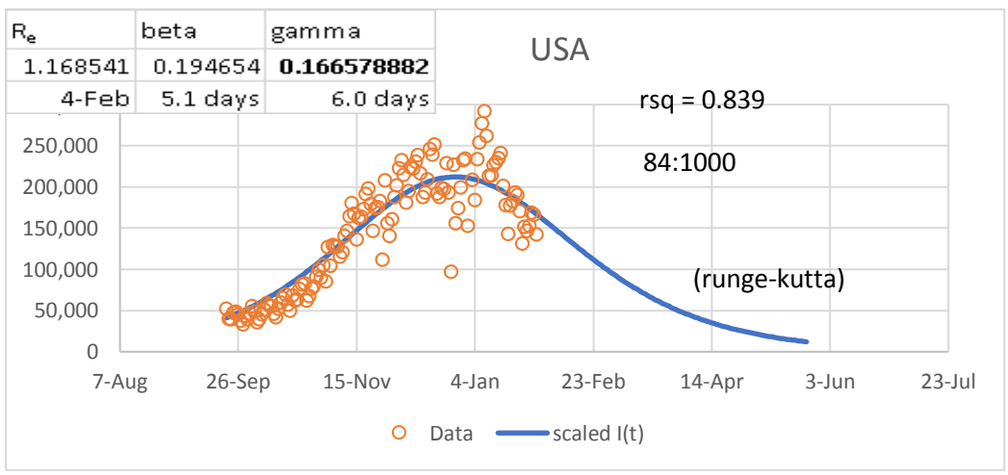


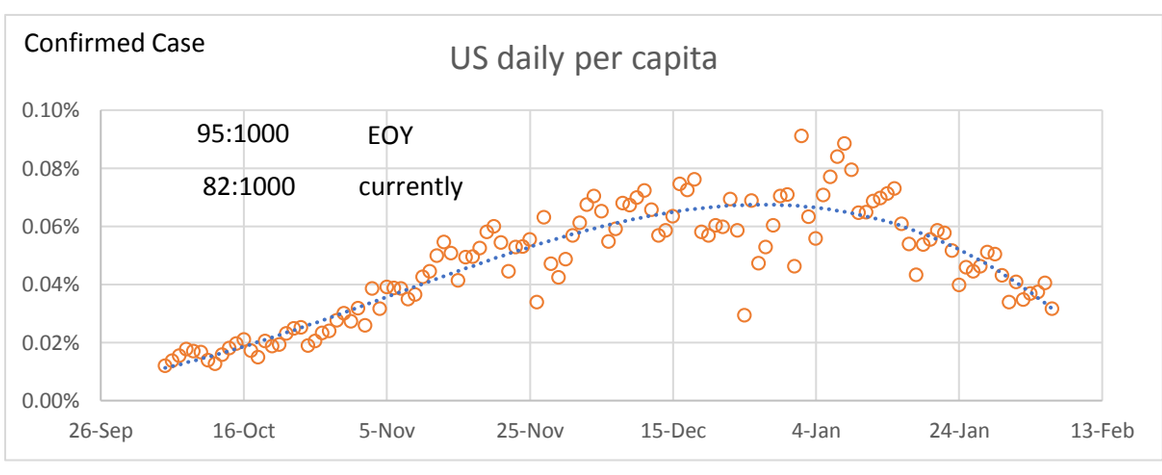

**Here are some demonstrations of SIR model, using $R_e$, gamma, and beta**



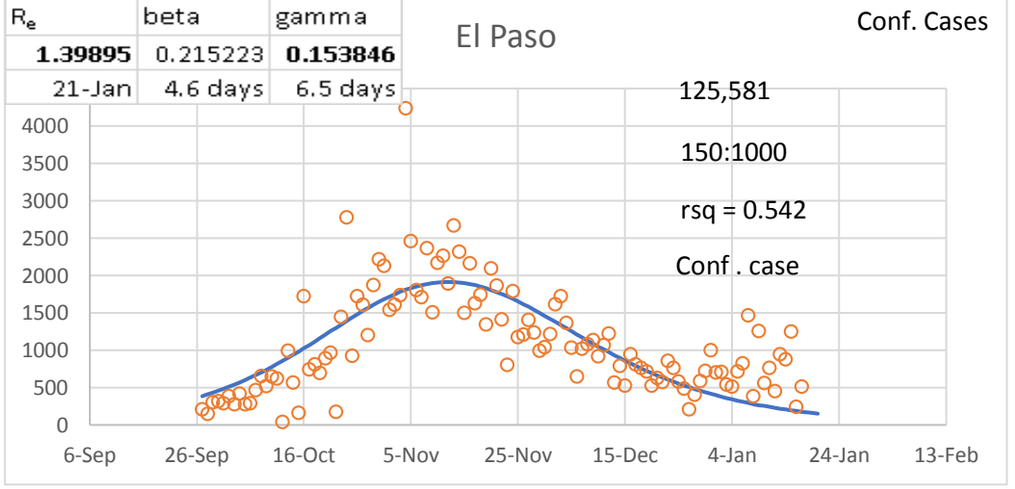




| $R_e$ | beta | gamma |
|---|---|---|
| 1.168541 | 0.194654 | **0.166578882** |
| 4-Feb | 5.1 days | 6.0 days |

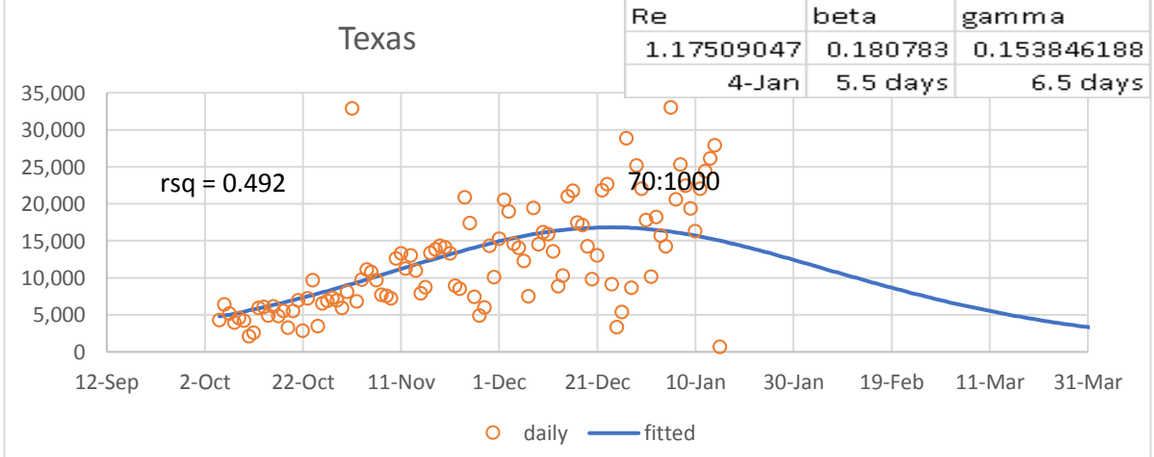


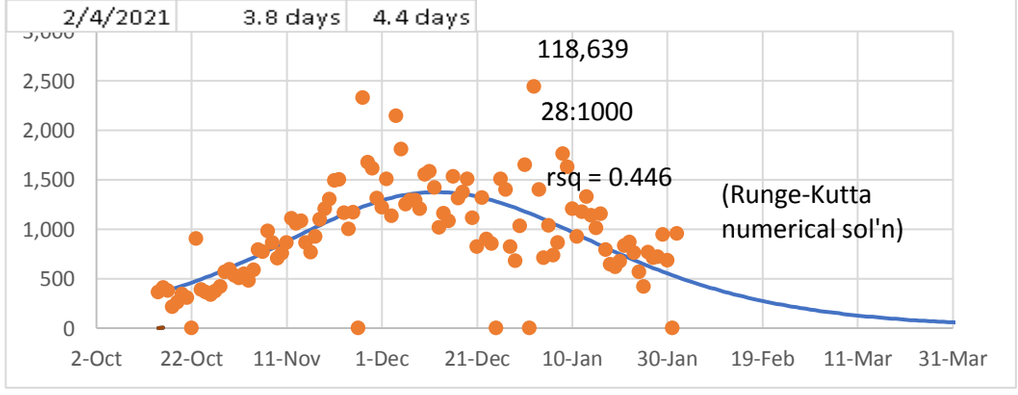

| $R_e$ | beta | gamma |
|---|---|---|
| **1.39895** | 0.215223 | **0.153846** |
| 21-Jan | 4.6 days | 6.5 days |



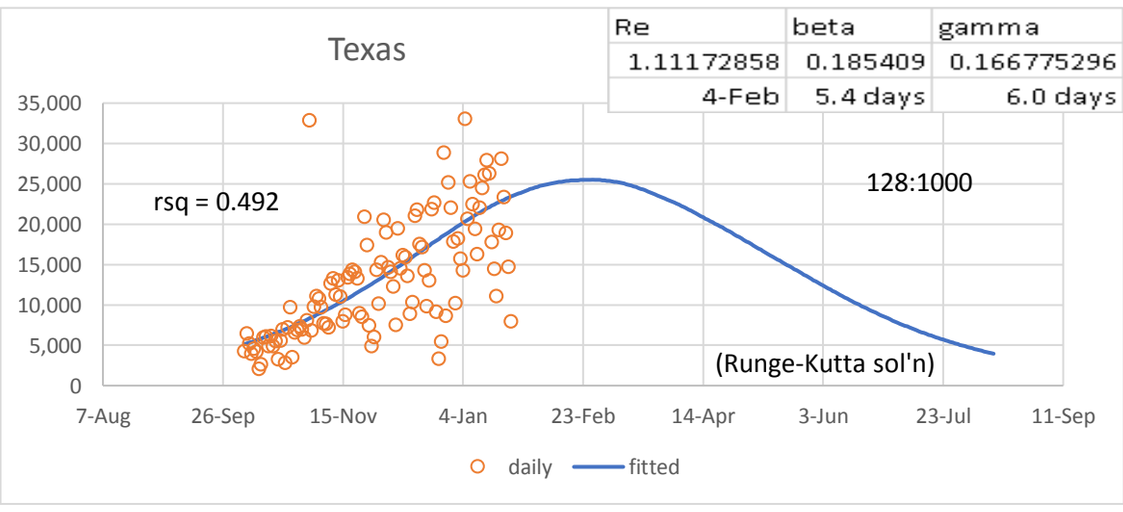

| Re | beta | gamma |
|---|---|---|
| 1.17509047 | 0.180783 | 0.153846188 |
| 4-Jan | 5.5 days | 6.5 days |

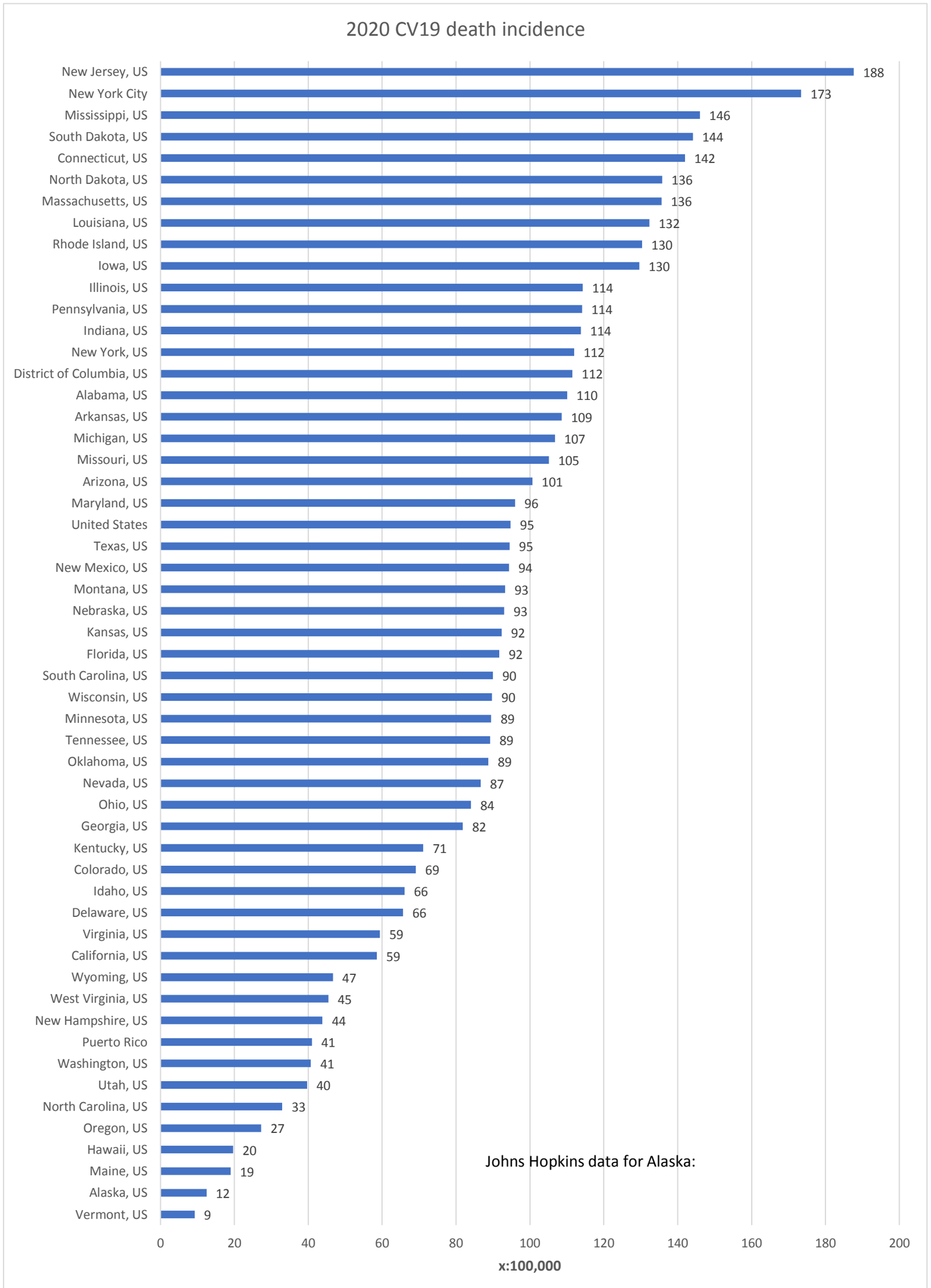



| Re | beta | gamma |
|---|---|---|
| **Re = 1.177** | 0.266399827 | **0.226422** |
| 2/4/2021 | 3.8 days | 4.4 days |




| Re | beta | gamma |
|---|---|---|
| 1.11172858 | 0.185409 | 0.166775296 |
| 4-Feb | 5.4 days | 6.0 days |






https://data.cdc.gov/NCHS/Weekly-Counts-of-Deaths-by-State-and-Select-Causes/muzy-jte6/data