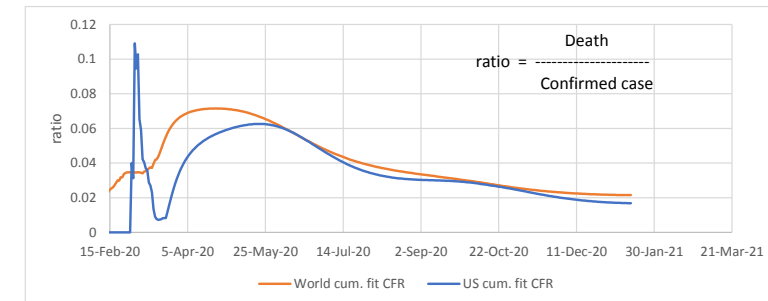
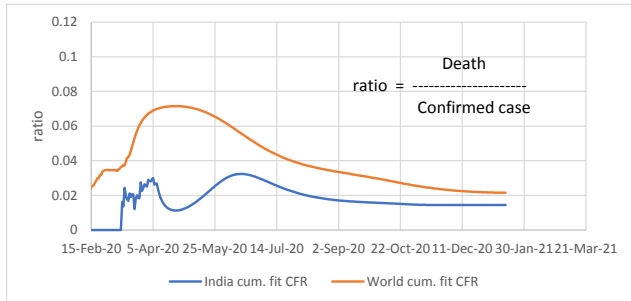
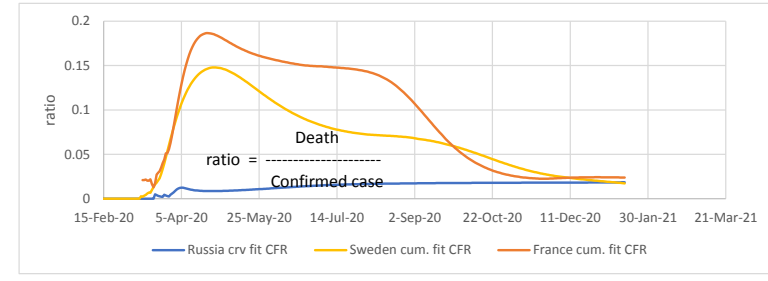
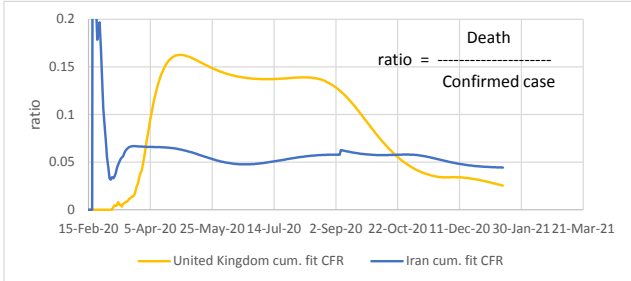
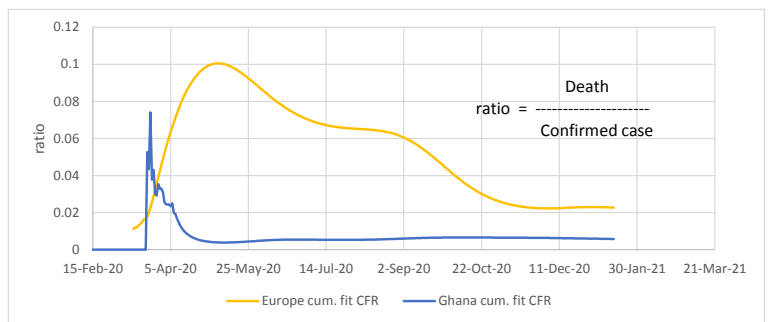
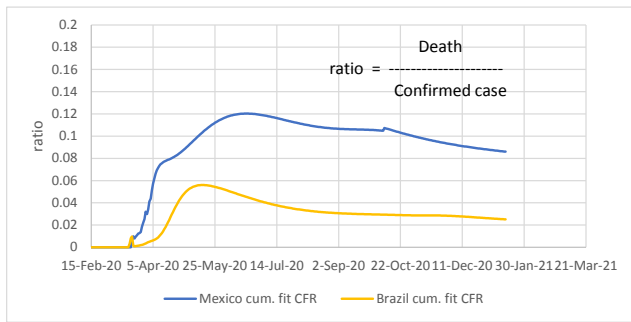
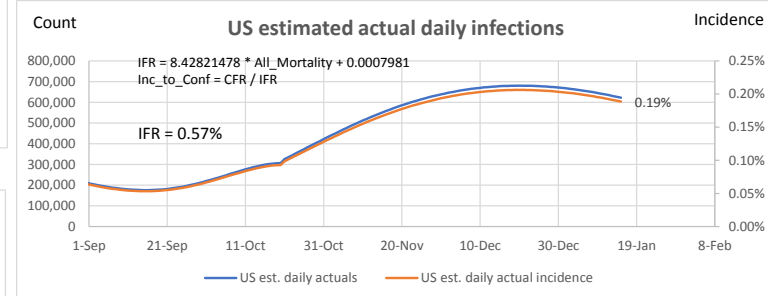
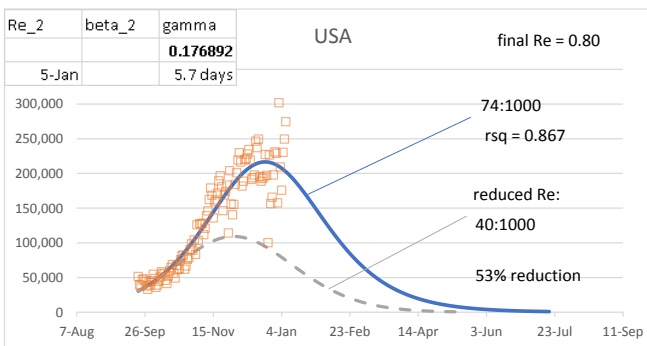
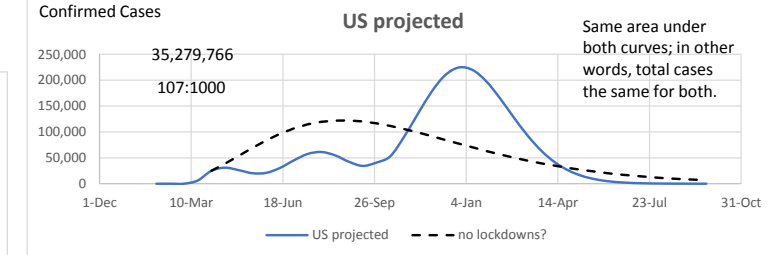
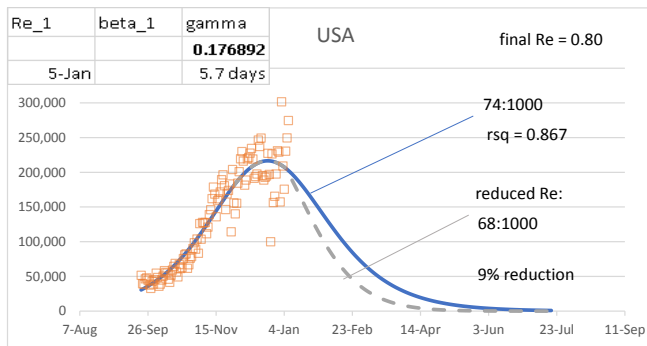


## Experimental page : ratios of curve fit deaths to curve fit confirmed cases (CFR)



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



### False Positives Demonstration

Use 0.19% from US est. incidence above as estimated daily incidence  
Prevalence estimated as avg. infected period of 2 weeks X incidence

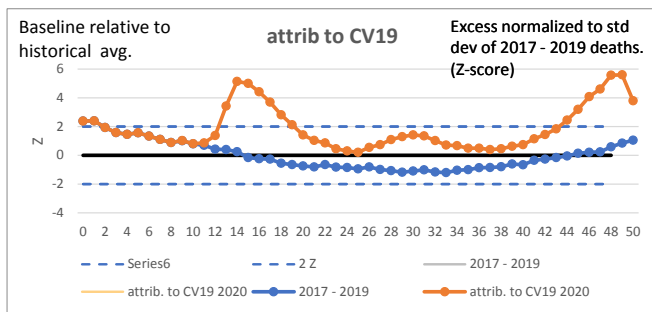
	99% accuracy of test		0.19% X 14 = 2.660%
	Positive	Negative	
test pos	2.633%	0.973%	3.61%
test neg	0.027%	96.367%	96.39%
	2.660%	97.340%	100.00%

False pos. is a bit over 1/4 of total positives!

TRUE +	2.633%/3.61%	73.0%
FALSE +	0.973%/3.61%	27.0%
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.

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.



#### 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	876:100,000	-
2020	1009:100,000	909:100,000	-
Diff.	133:100,000	34:100,000	99:100,000

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/xkxf-xrst/data>

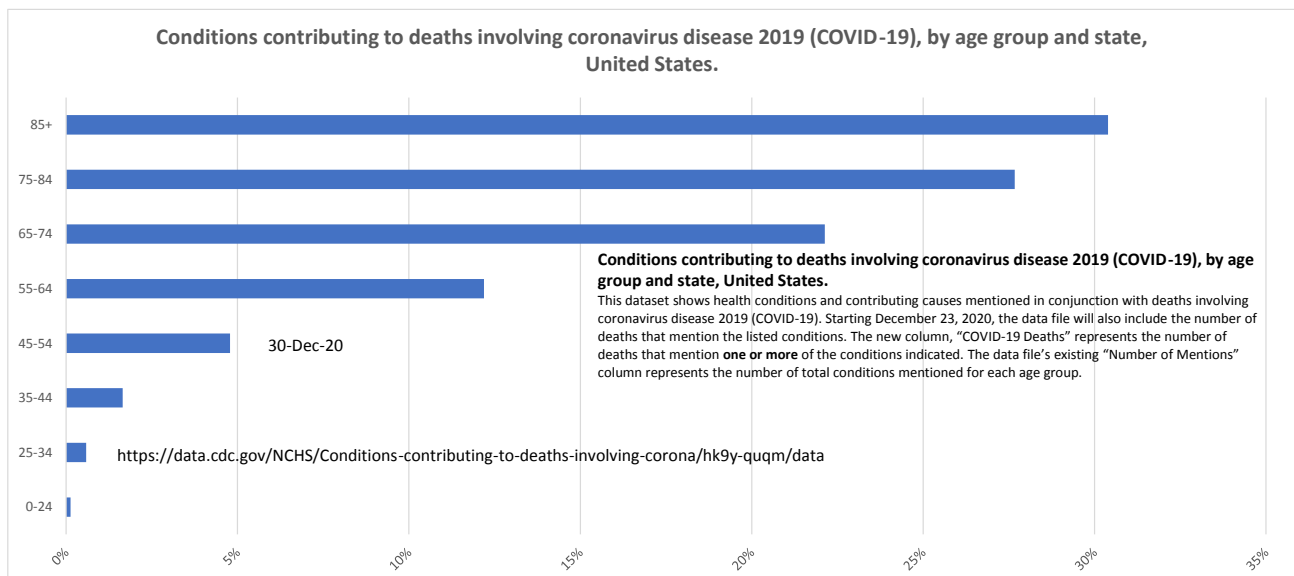
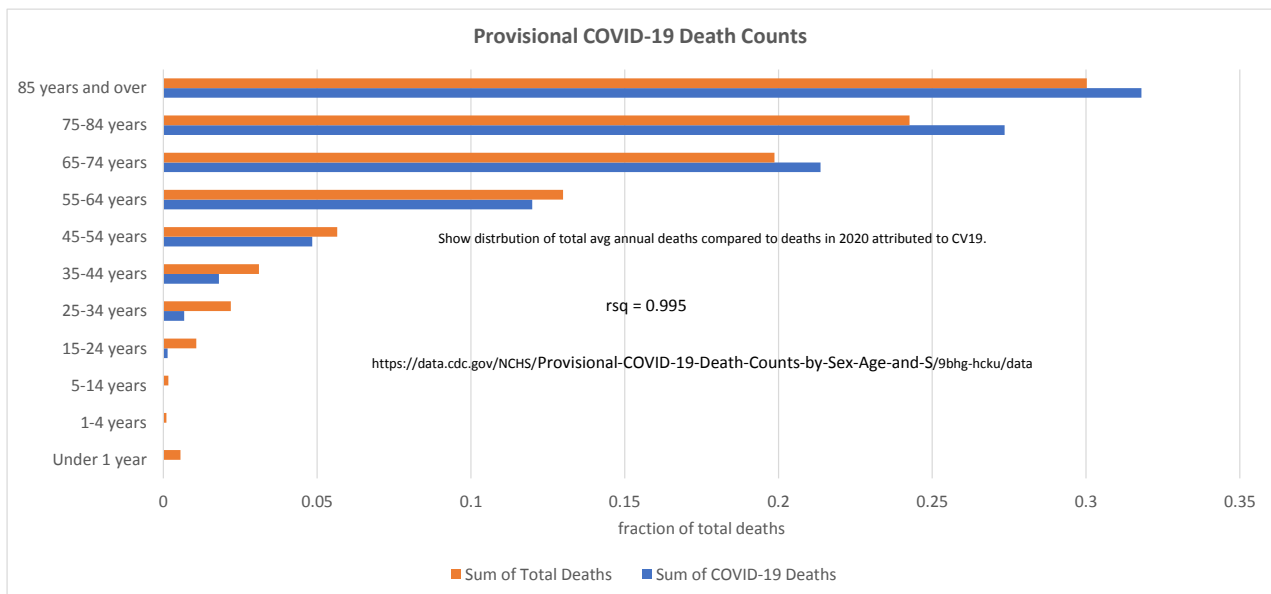
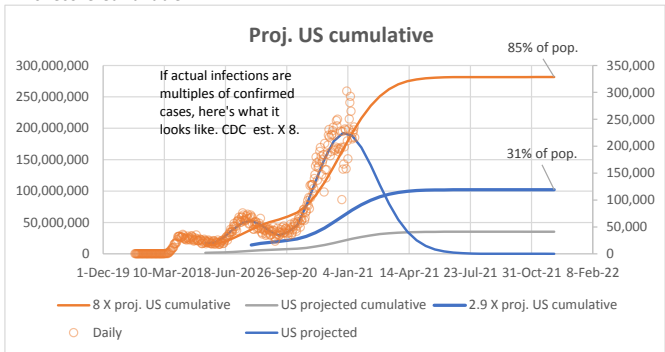
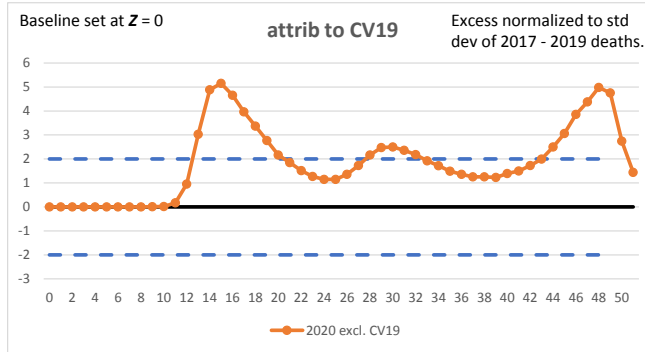
$$K = 0.318$$

$$\gamma = 0.171 \quad R_o = \exp(K/\gamma) = 6.42$$

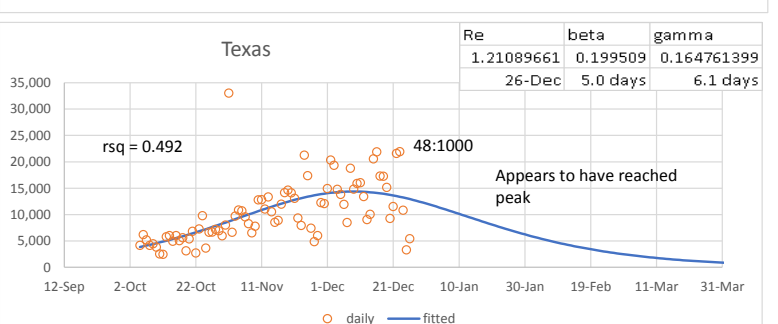
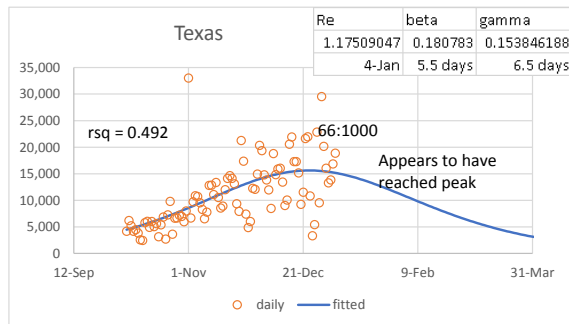
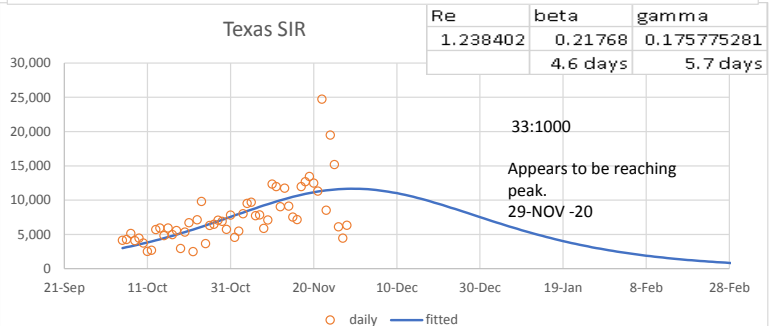
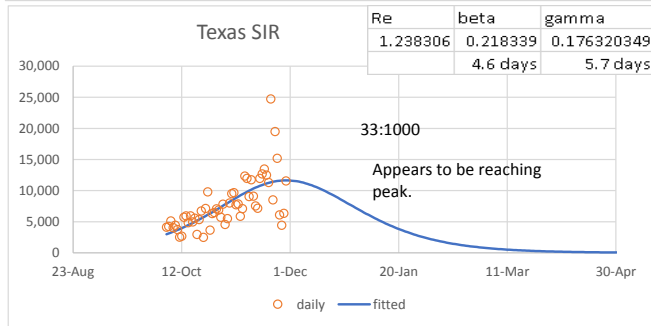
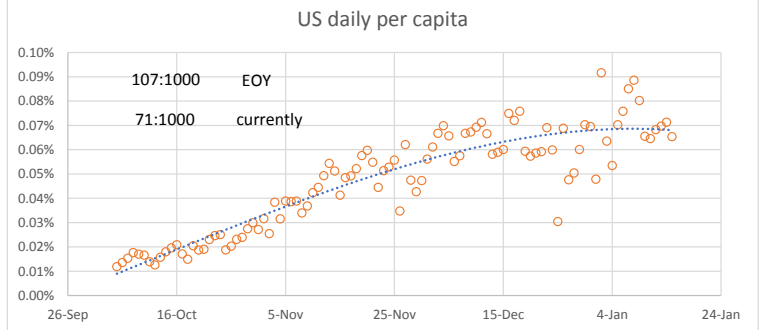
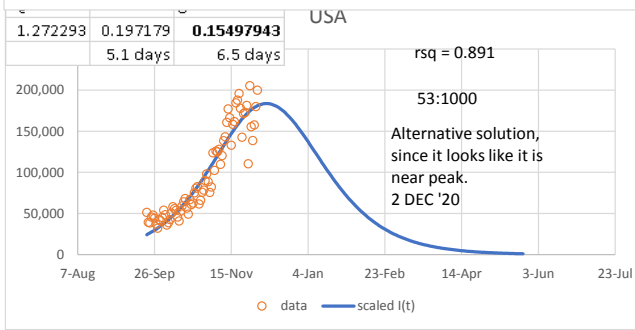
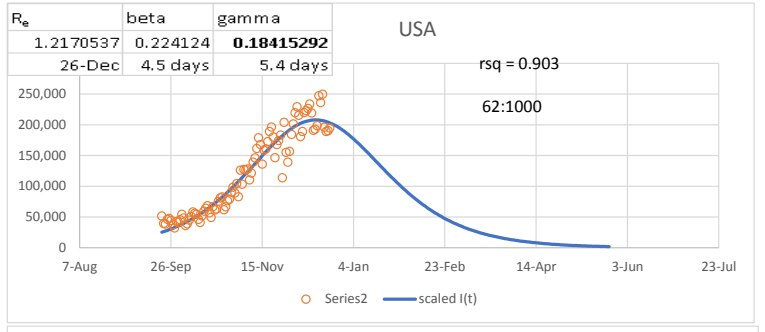
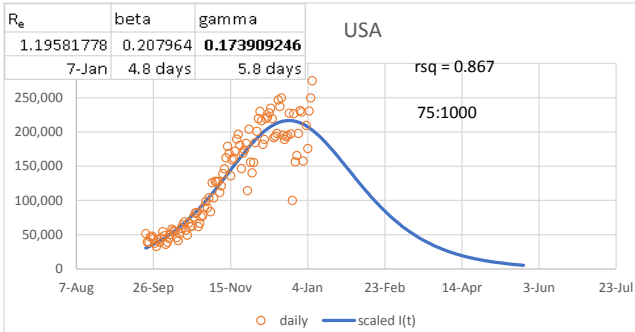
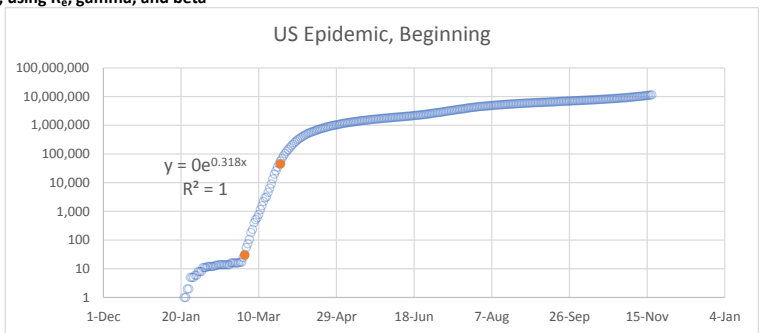
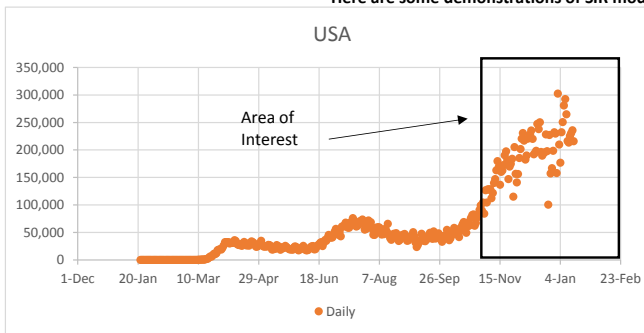
$$\gamma = 0.286 \quad R > [1 - 1/R_o] / N = 3.04$$

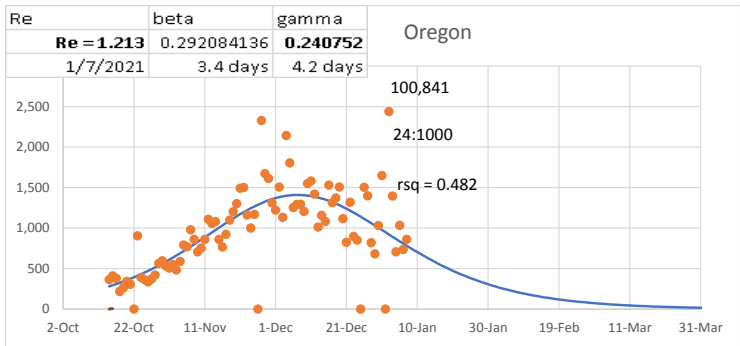
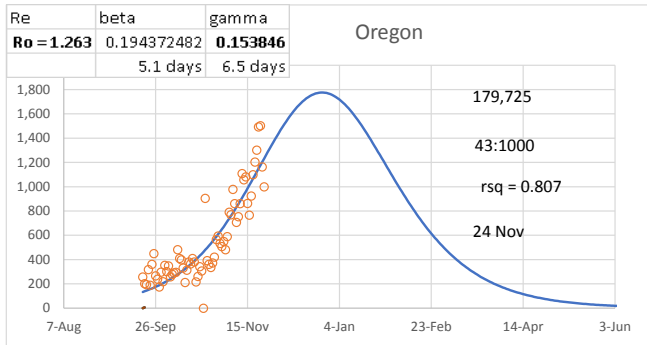
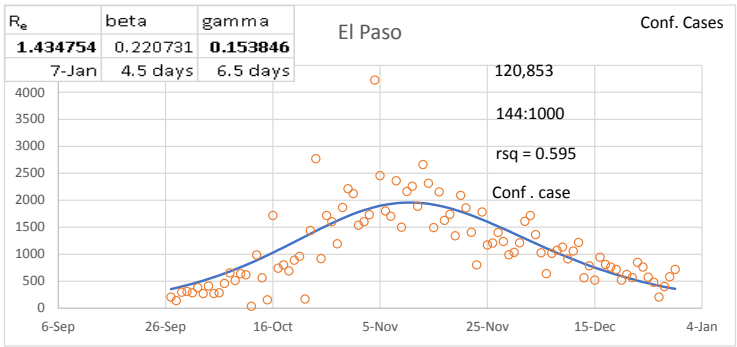
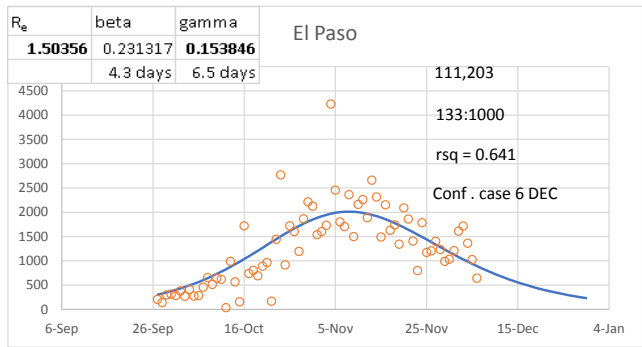
84% <= Herd immunity  
67%

R is recovered variable.

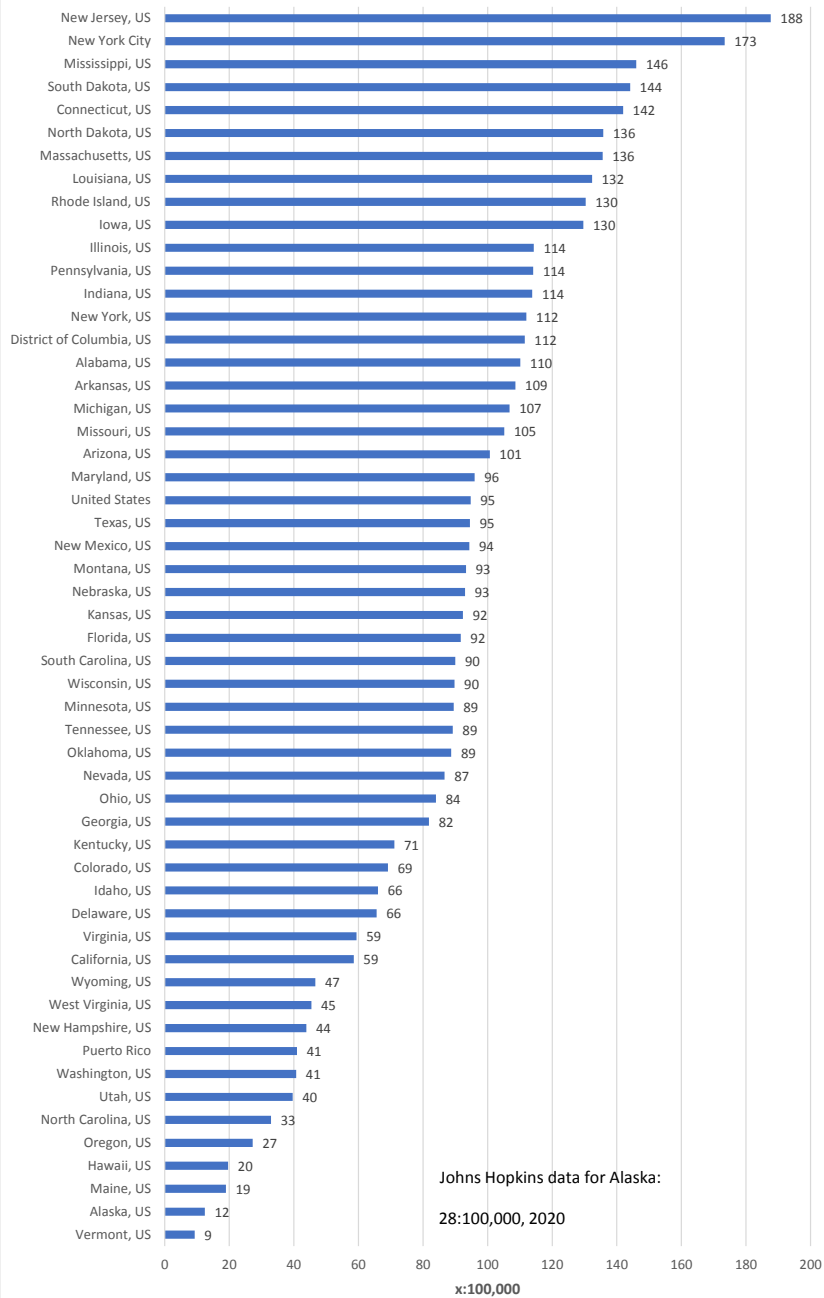


Here are some demonstrations of SIR model, using  $R_e$ , gamma, and beta





2020 CV19 death incidence



<https://data.cdc.gov/NCHS/Weekly-Counts-of-Deaths-by-State-and-Select-Causes/muzy-ite6/data>