Florida (Non-Spatial Analysis) Results

2022-08-25

Models 1-3: 77 timepoints

- Model 1: Unconstrained growth; no interventions
- Model 2: Baseline intensity plus linear time component beginning on first intervention date (school closure)
- Model 3: Baseline intensity plus two linear time components, beginning on respective intervention dates (school closure and state mandated stay-at-home-order)

Models 4-14: 184 timepoints

- Model 4: Baseline intensity plus two linear time components, beginning on respective intervention dates (school closure and state mandated stay-at-home-order)
- Model 5: Baseline intensity plus two linear time components, beginning on respective intervention dates (school closure and state mandated stay-at-home-order) and temporal basis splines of 3 degrees of freedom
- Model 6: Baseline intensity plus two linear time components, beginning on respective intervention dates (school closure and state mandated stay-at-home-order) and temporal basis splines of 4 degrees of freedom
- Model 7: Baseline intensity plus two linear time components, beginning on respective intervention dates (school closure and state mandated stay-at-home-order) and temporal basis splines of 5 degrees of freedom
- Model 8: Baseline intensity plus two linear time components, beginning on respective intervention dates (school closure and state mandated stay-at-home-order) and temporal basis splines of 6 degrees of freedom
- Model 9: Baseline intensity plus three linear time components, two beginning on respective intervention dates (school closure and state mandated stay-at-home-order) and one beginning on the end of the stay-at-home order
- Model 10: Baseline intensity plus three linear time components, two beginning on respective intervention dates (school closure and state mandated stay-at-home-order), one beginning on the end of the stay-at-home order and temporal basis splines of 3 degrees of freedom
- Model 11: Baseline intensity plus three linear time components, two beginning on respective intervention dates (school closure and state mandated stay-at-home-order), one beginning on the end of the stay-at-home order and temporal basis splines of 4 degrees of freedom
- Model 12: Baseline intensity plus three linear time components, two beginning on respective intervention dates (school closure and state mandated stay-at-home-order), one beginning on the end of the stay-at-home order and temporal basis splines of 5 degrees of freedom
- Model 13: Baseline intensity plus three linear time components, two beginning on respective intervention dates (school closure and state mandated stay-at-home-order), one beginning on the end of the stay-at-home order and temporal basis splines of 6 degrees of freedom
- Model 14: Baseline intensity plus three linear time components, two beginning on respective intervention dates (school closure and state mandated stay-at-home-order), one beginning on the end of the stay-at-home order and a temporal trigonometric term

Models 15: 121 timepoints

- Model 15: Baseline intensity, a temporal trigonometric term and proportion of population vaccinated (at least one vaccine shot) and proportion fully vaccinated (all doses prescribed by the initial vaccination protocol)

```
## Loading required package: Rcpp
```
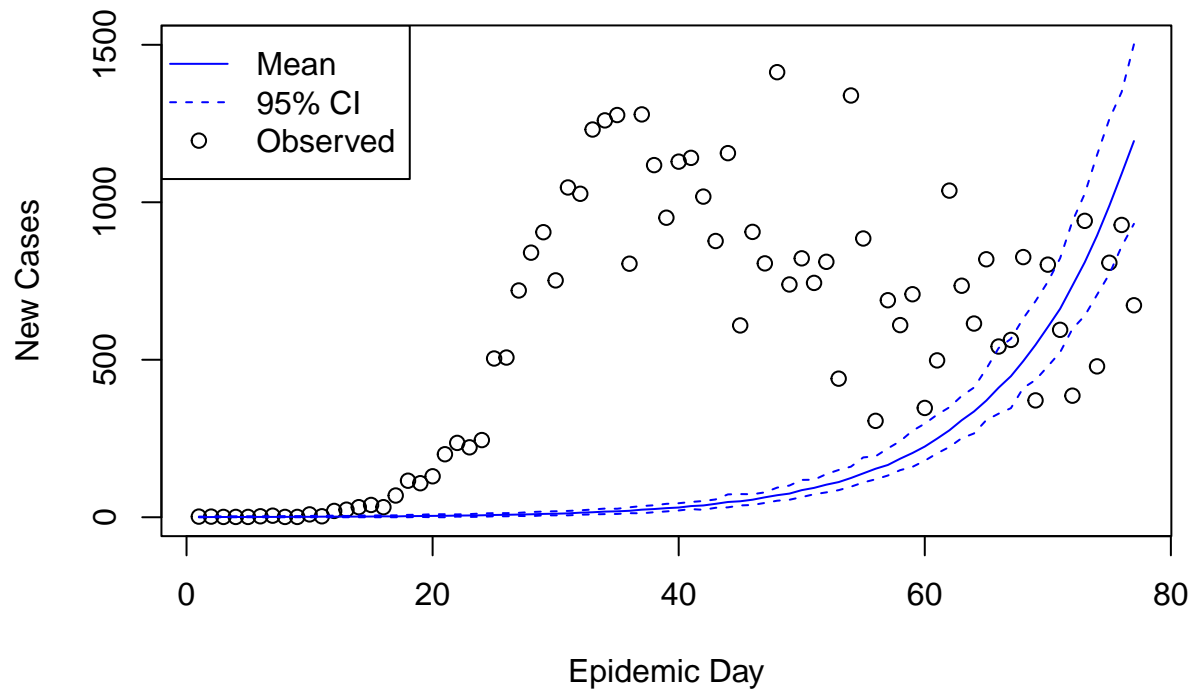
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## Loading required package: parallel
```

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## Loading required package: compiler
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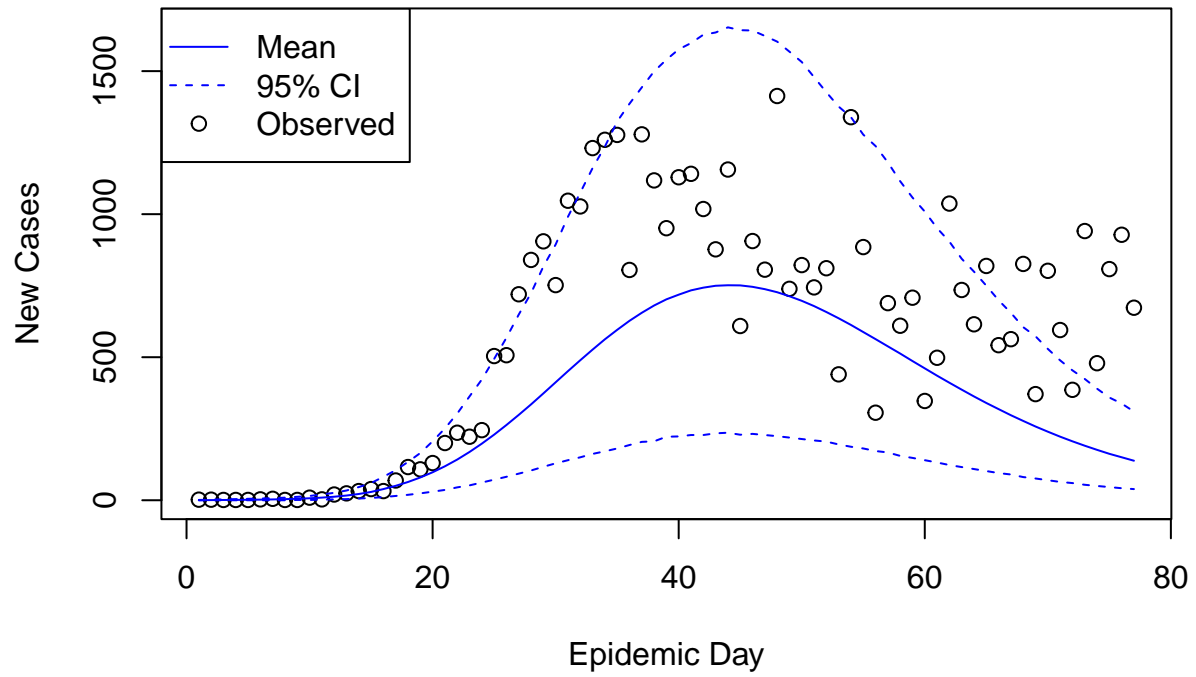
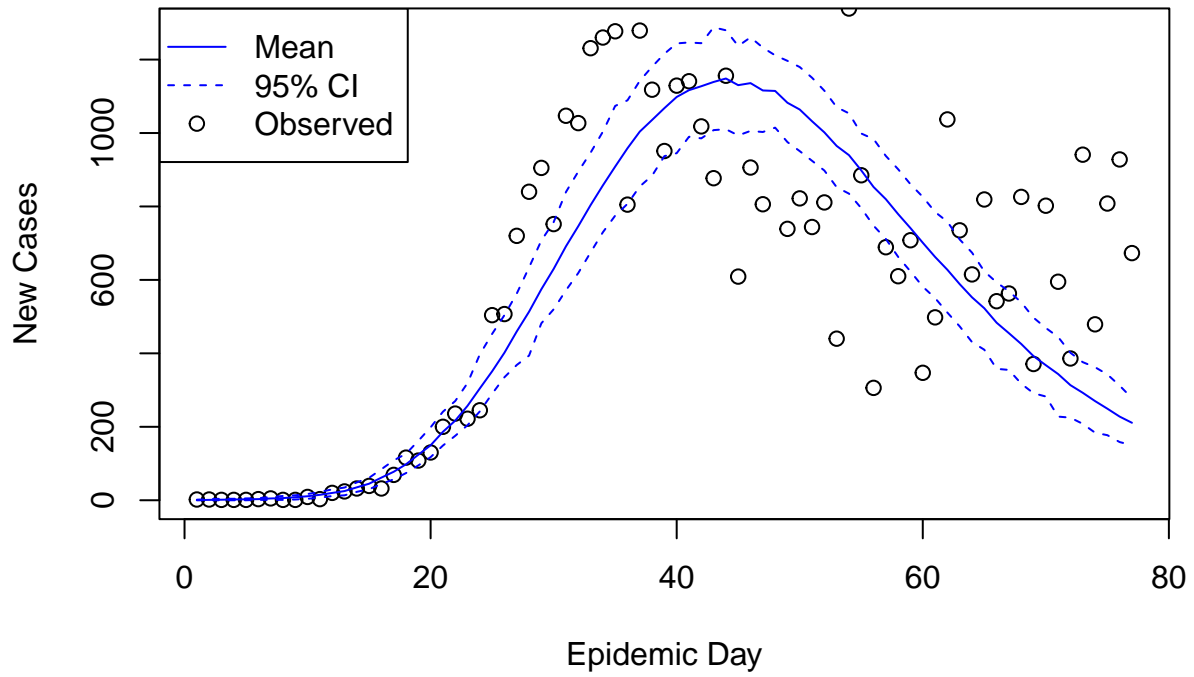## Model 1: Posterior Predictive Distribution
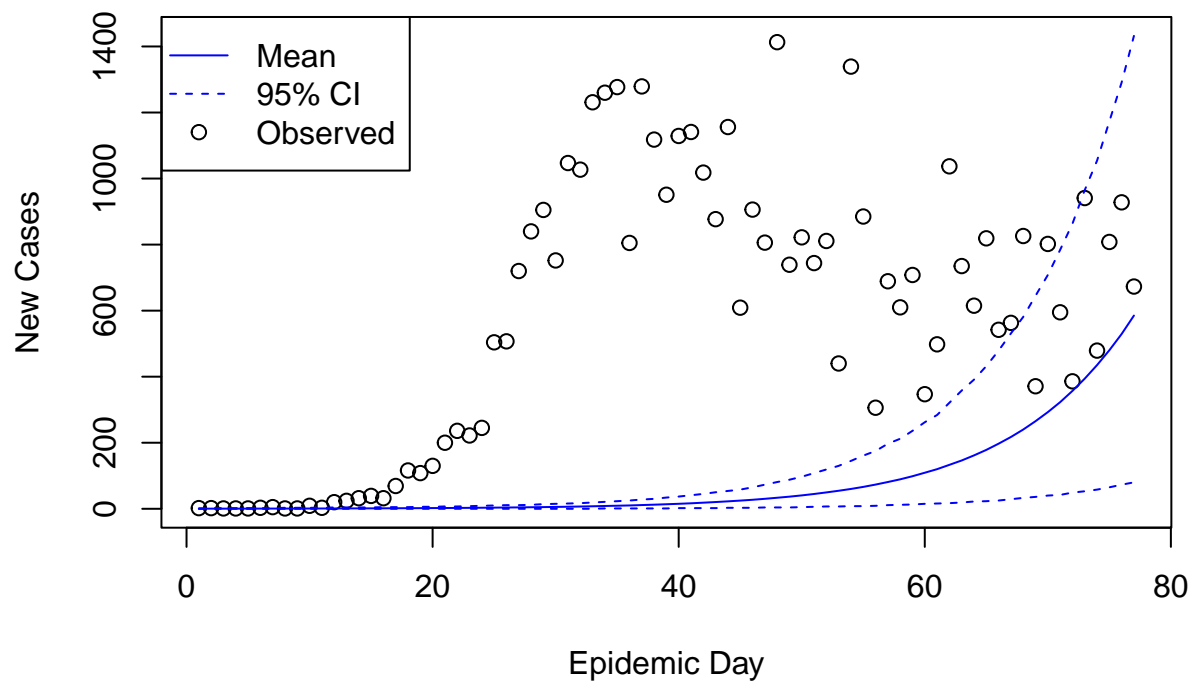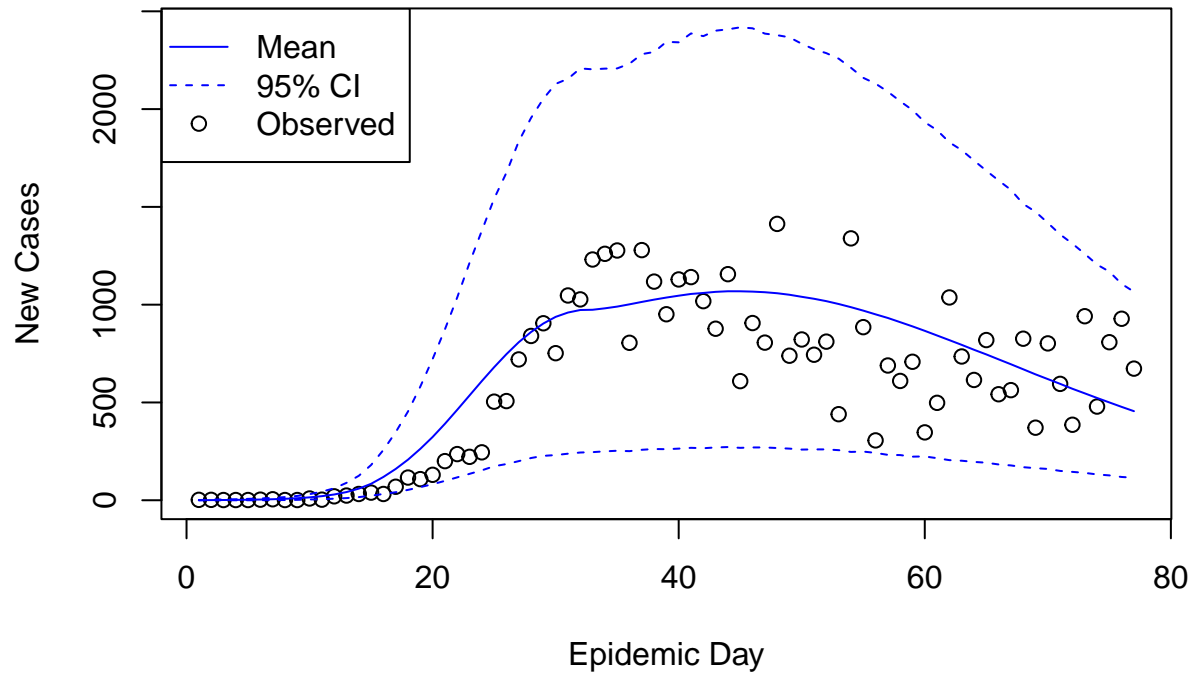
Model 1: Posterior Distribution

Model 2: Posterior Predictive Distribution

Model 2: Posterior Distribution

Model 3: Posterior Predictive Distribution

Model 3: Posterior Distribution

Model 4: Posterior Predictive Distribution

Model 4: Posterior Distribution

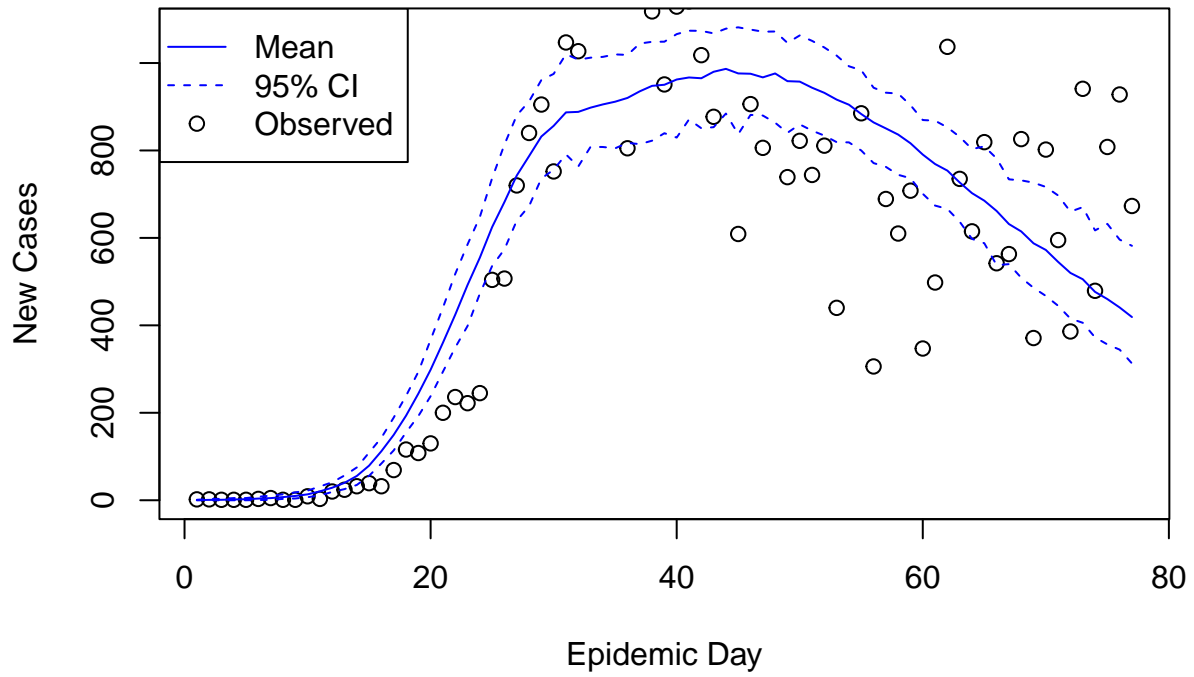# Model 5: Posterior Predictive Distribution

Model 5: Posterior Distribution

Model 6: Posterior Predictive Distribution

Model 6: Posterior Distribution

Model 7: Posterior Predictive Distribution
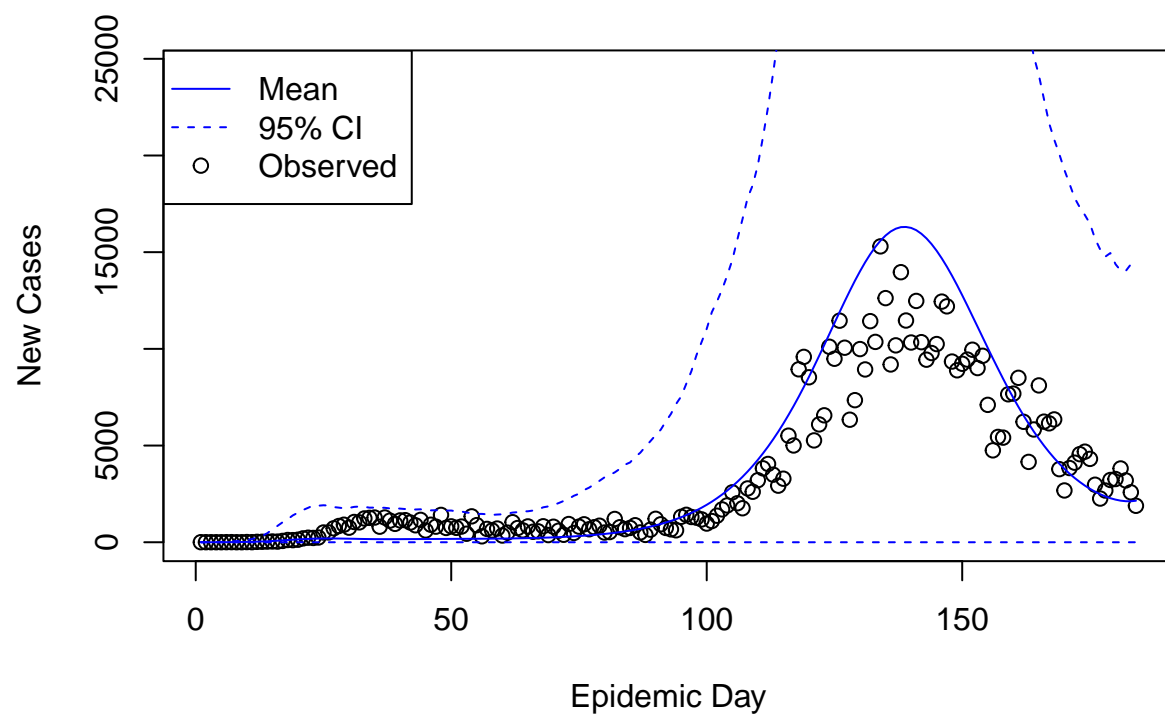
Model 7: Posterior Distribution

Model 8: Posterior Predictive Distribution
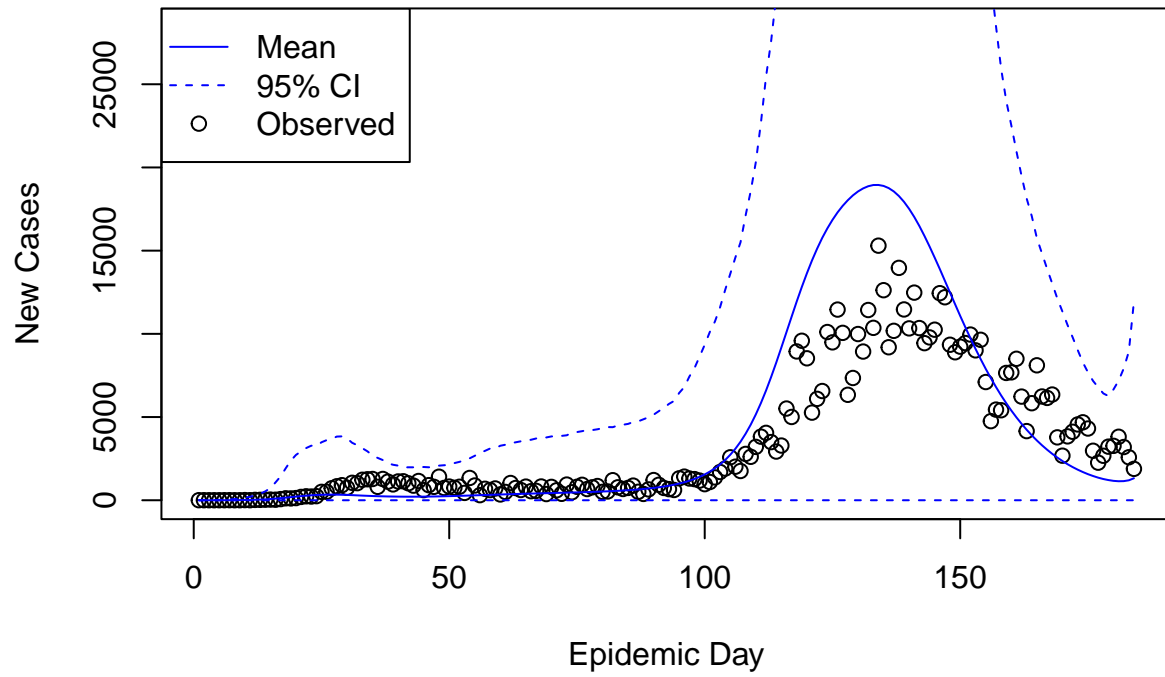
Model 8: Posterior Distribution
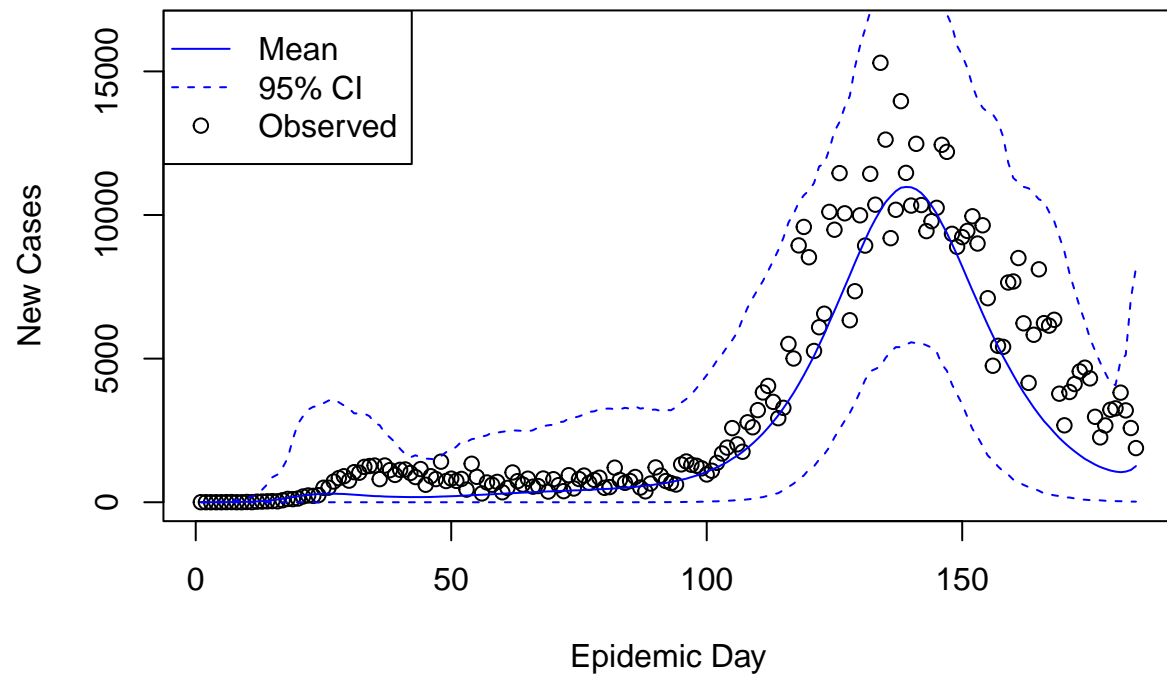
Model 9: Posterior Predictive Distribution
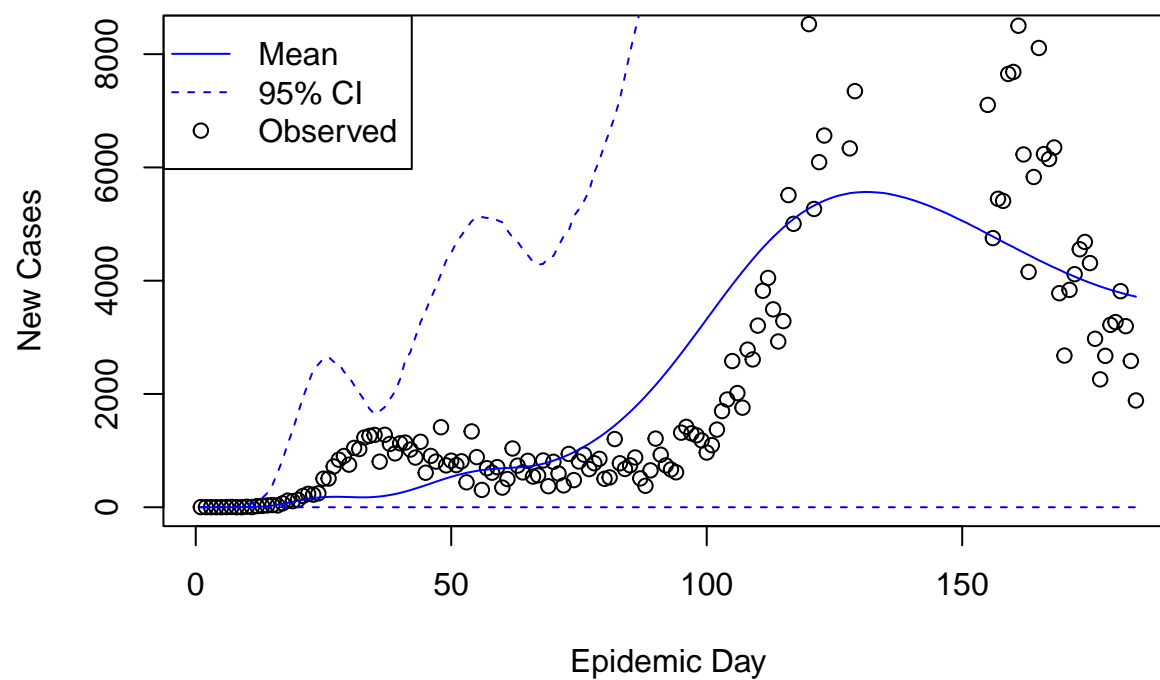
Model 9: Posterior Distribution
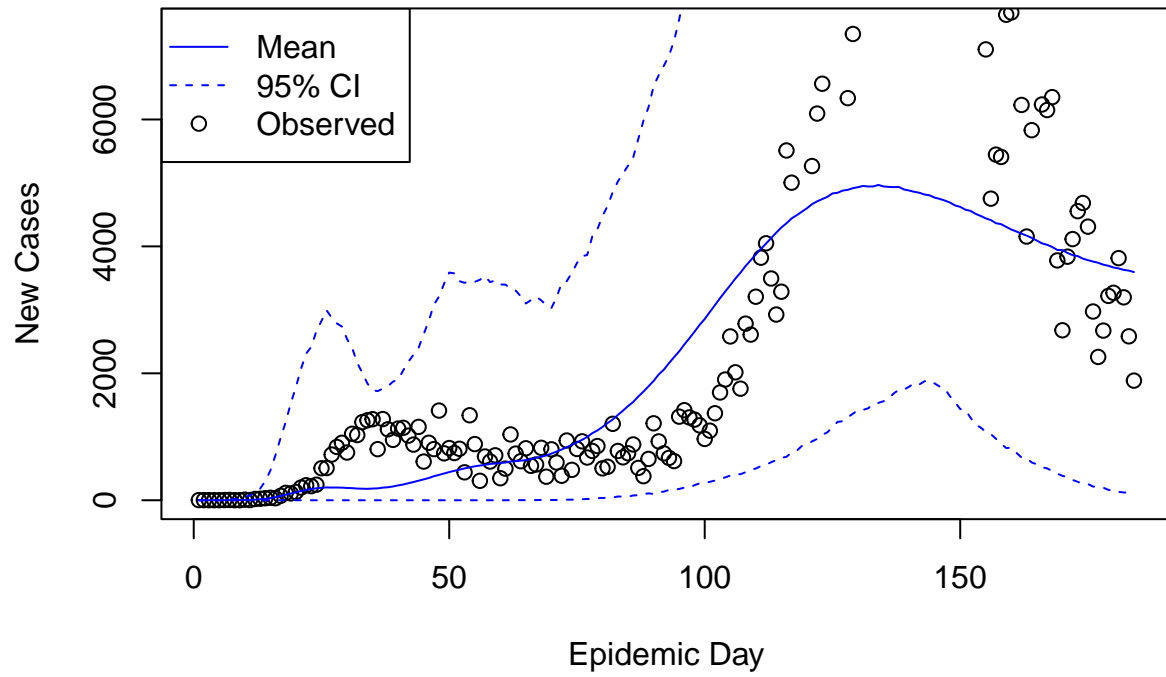
Model 10: Posterior Predictive Distribution
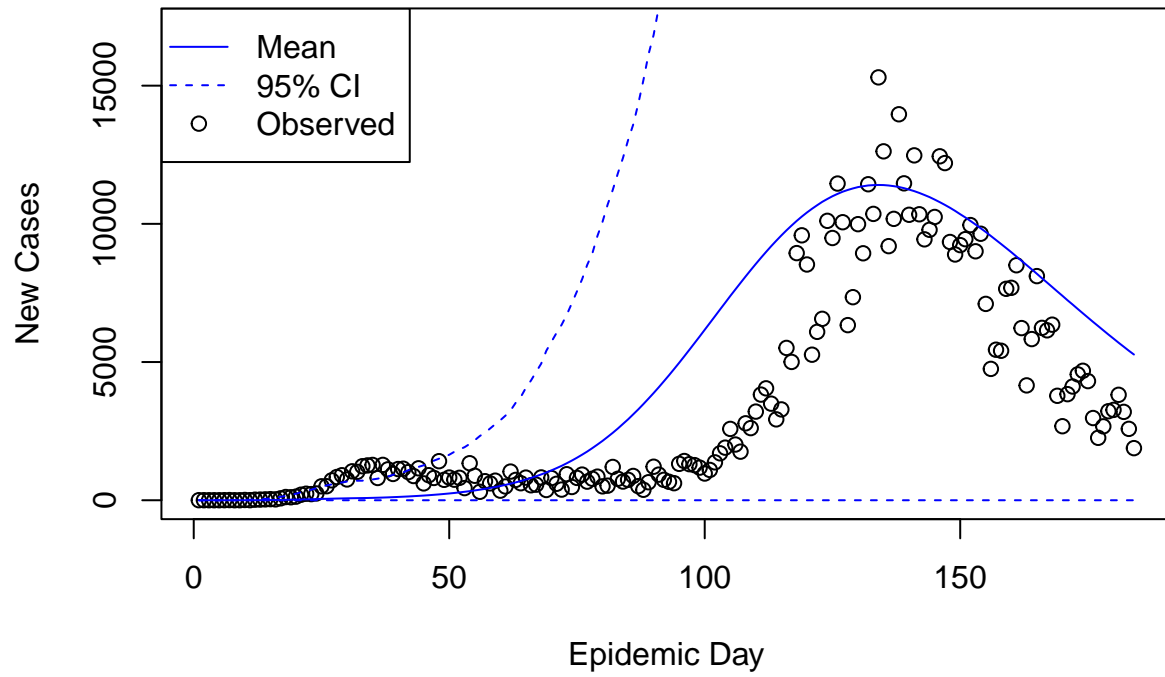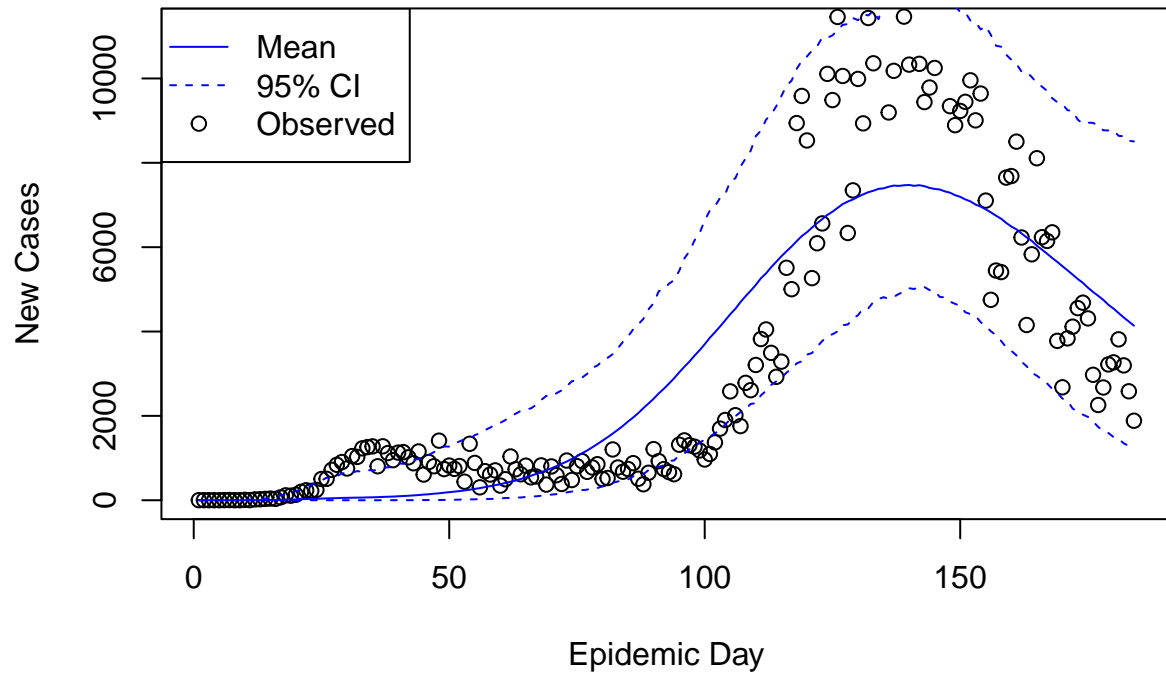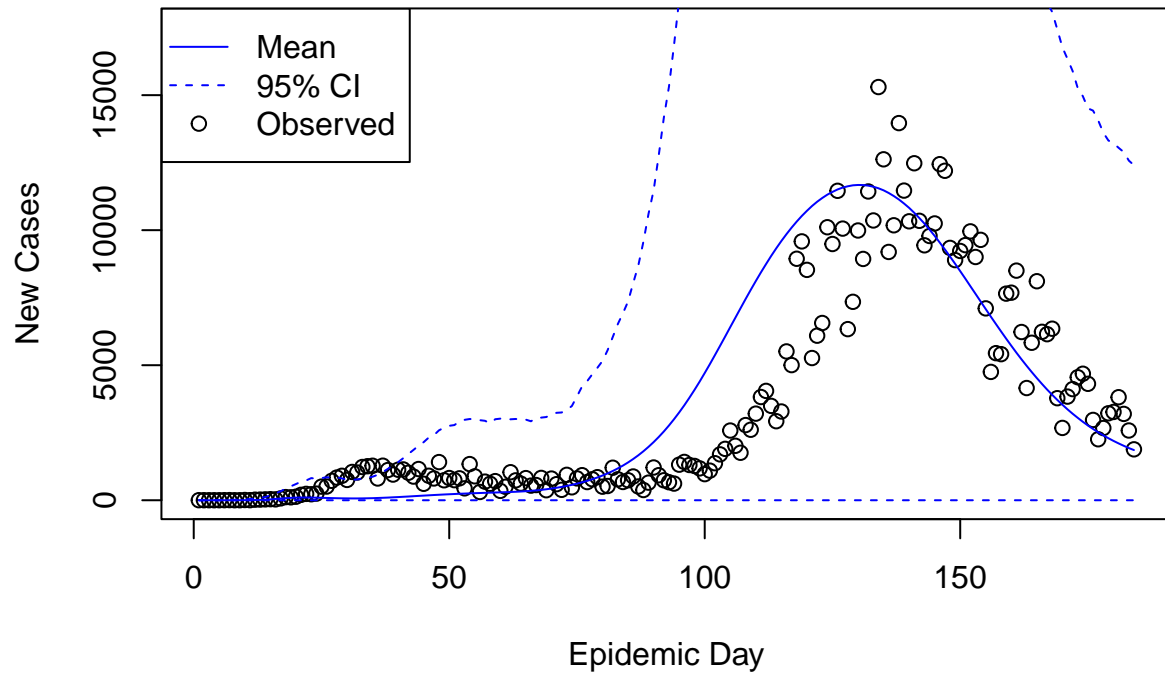
Model 10: Posterior Distribution
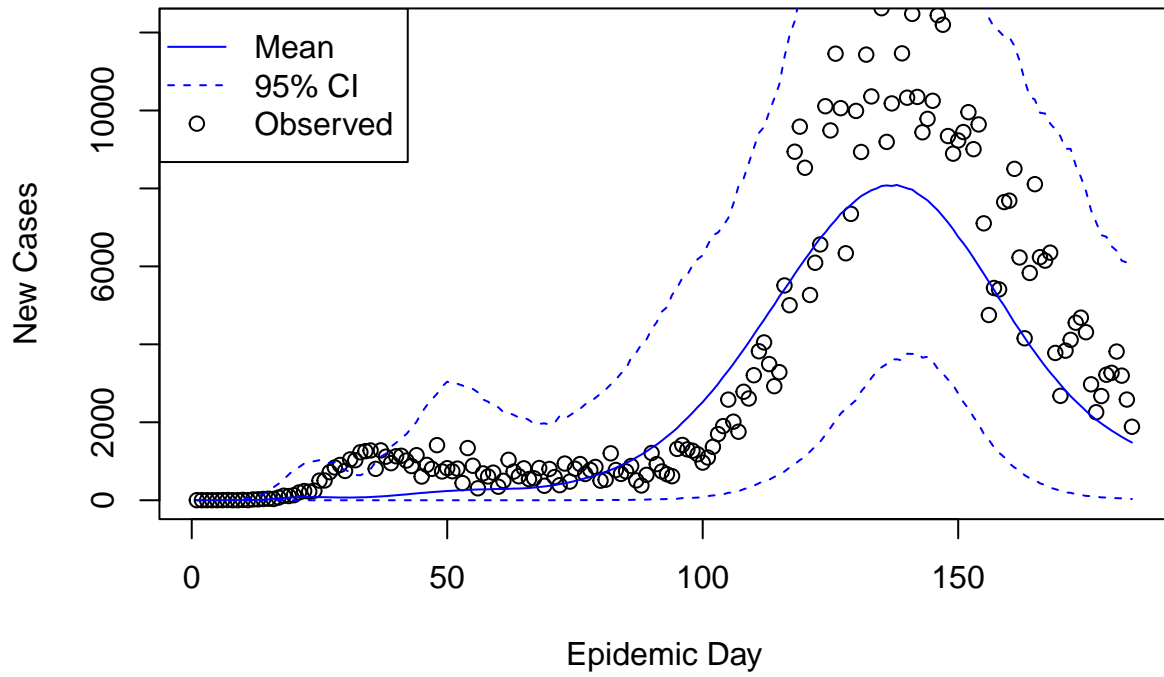
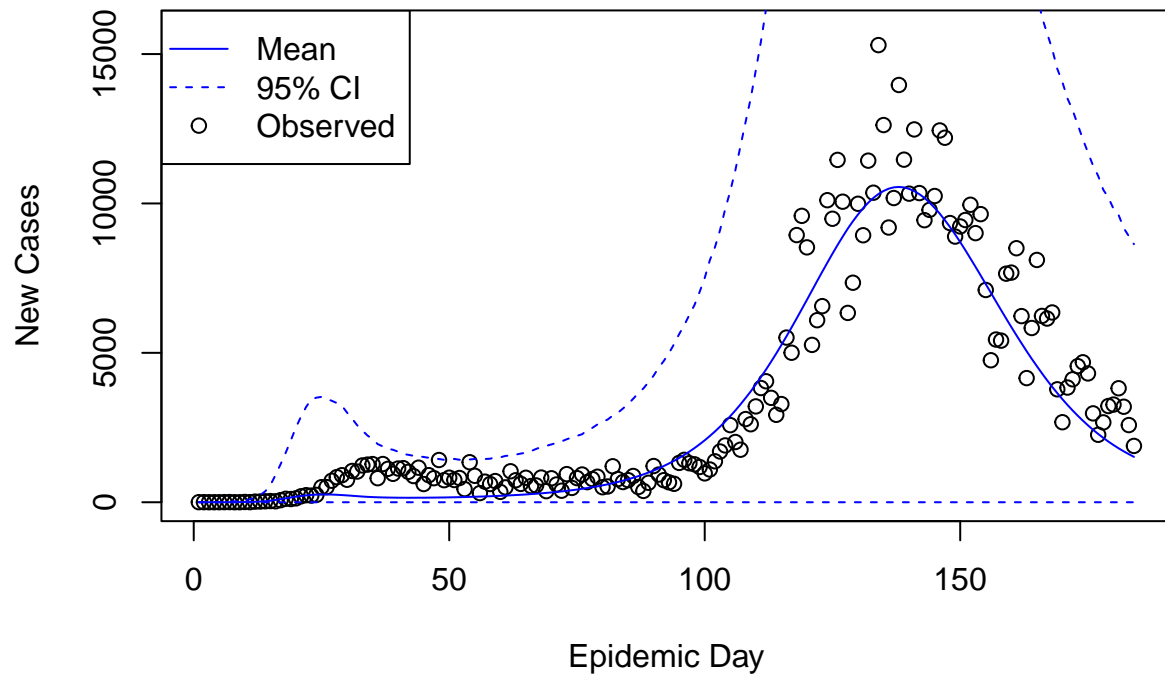# Model 11: Posterior Predictive Distribution
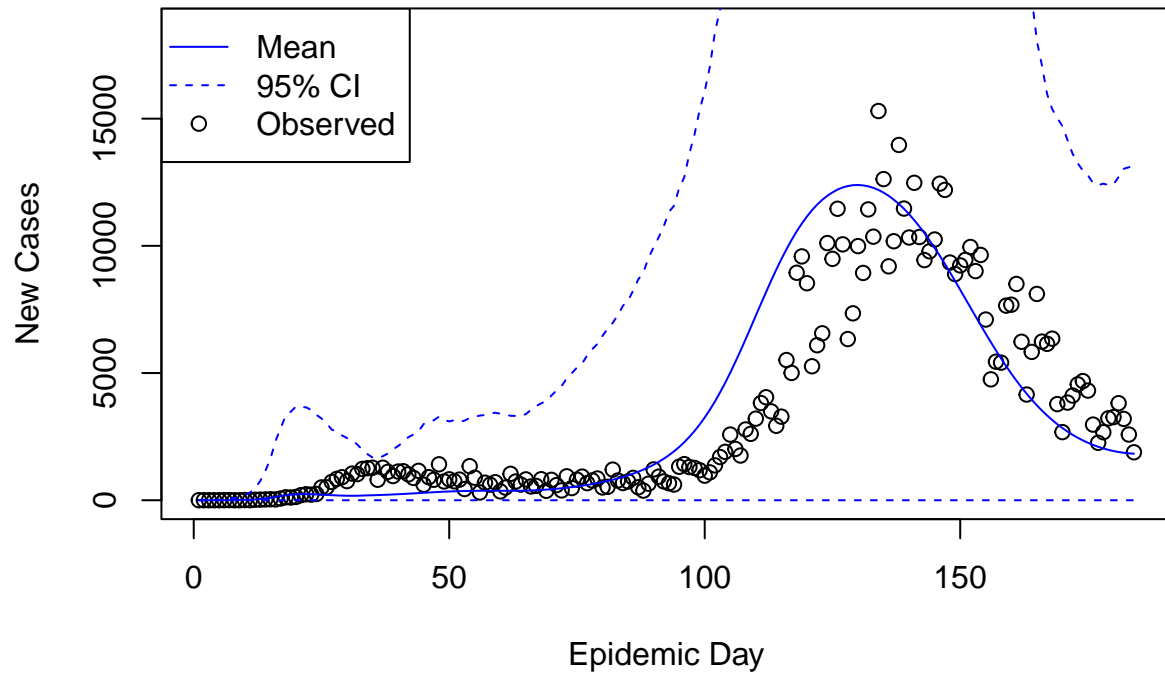
Model 11: Posterior Distribution
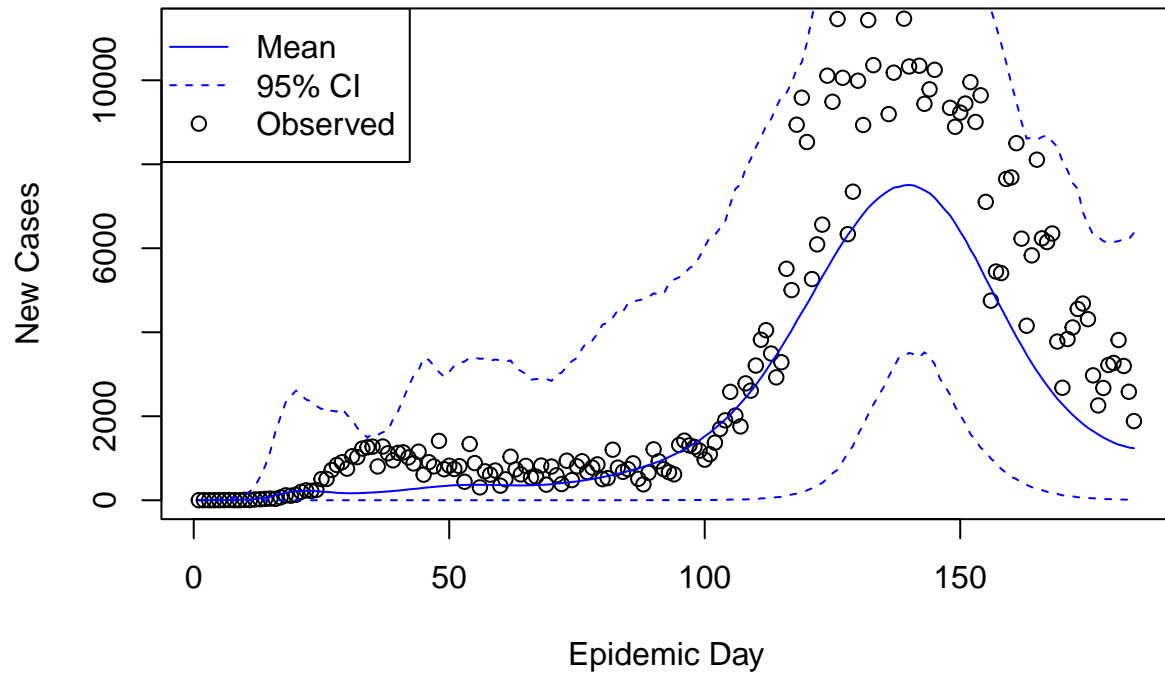
Model 12: Posterior Predictive Distribution
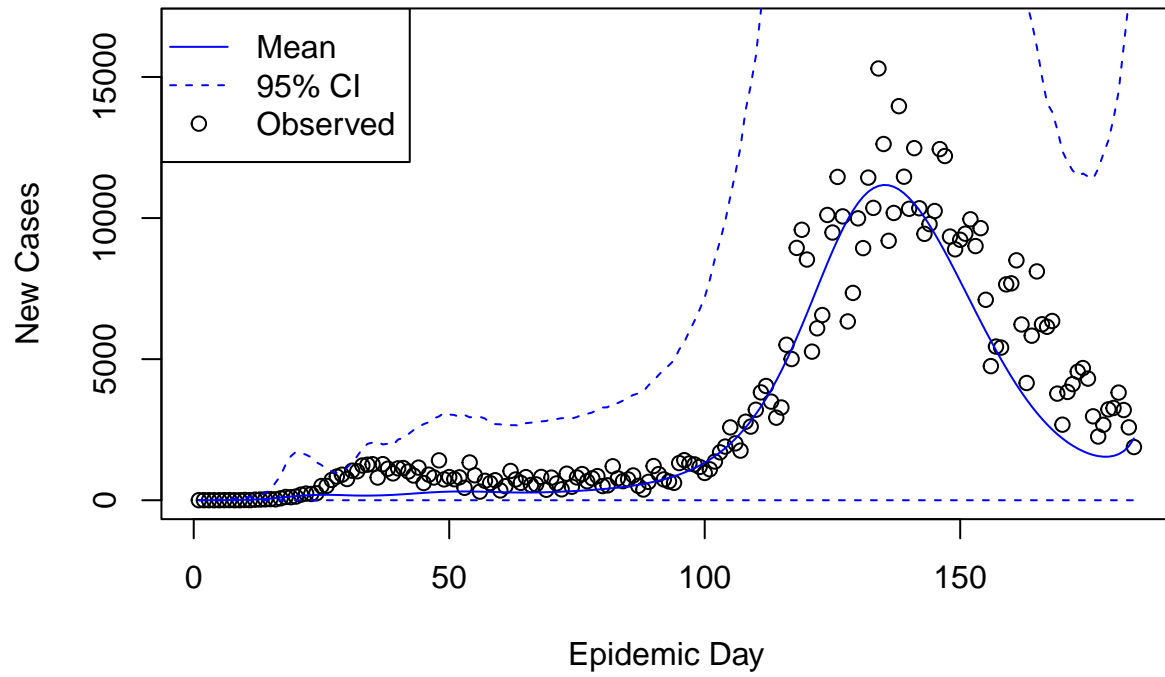
Model 12: Posterior Distribution
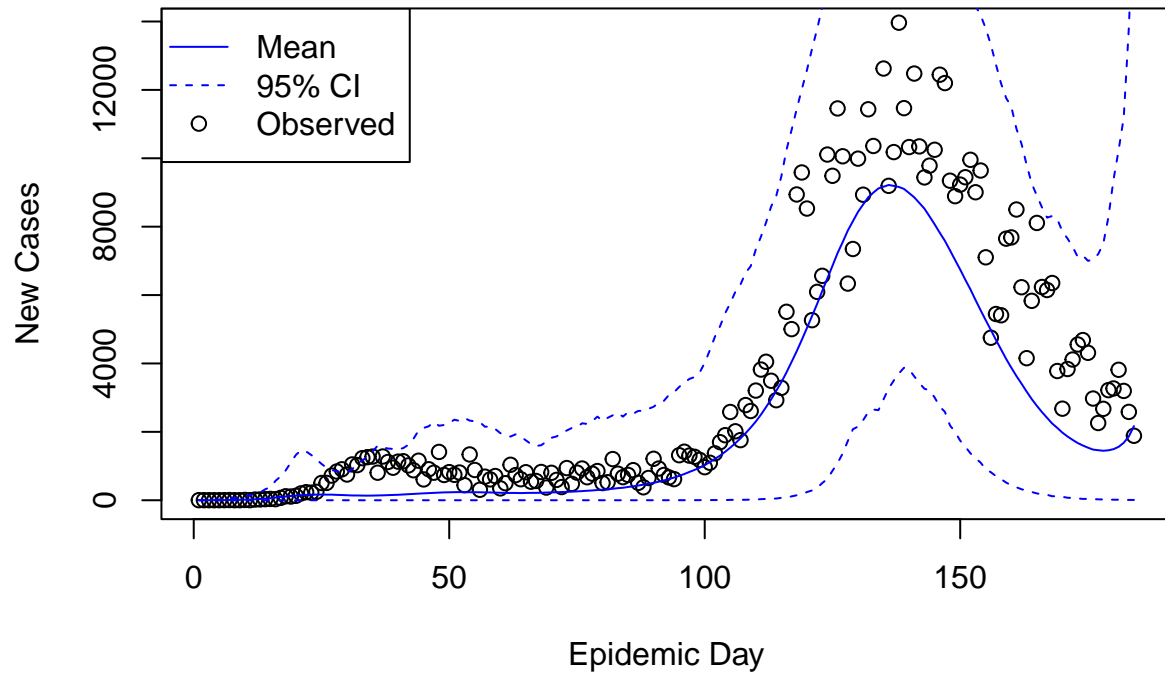
Model 13: Posterior Predictive Distribution
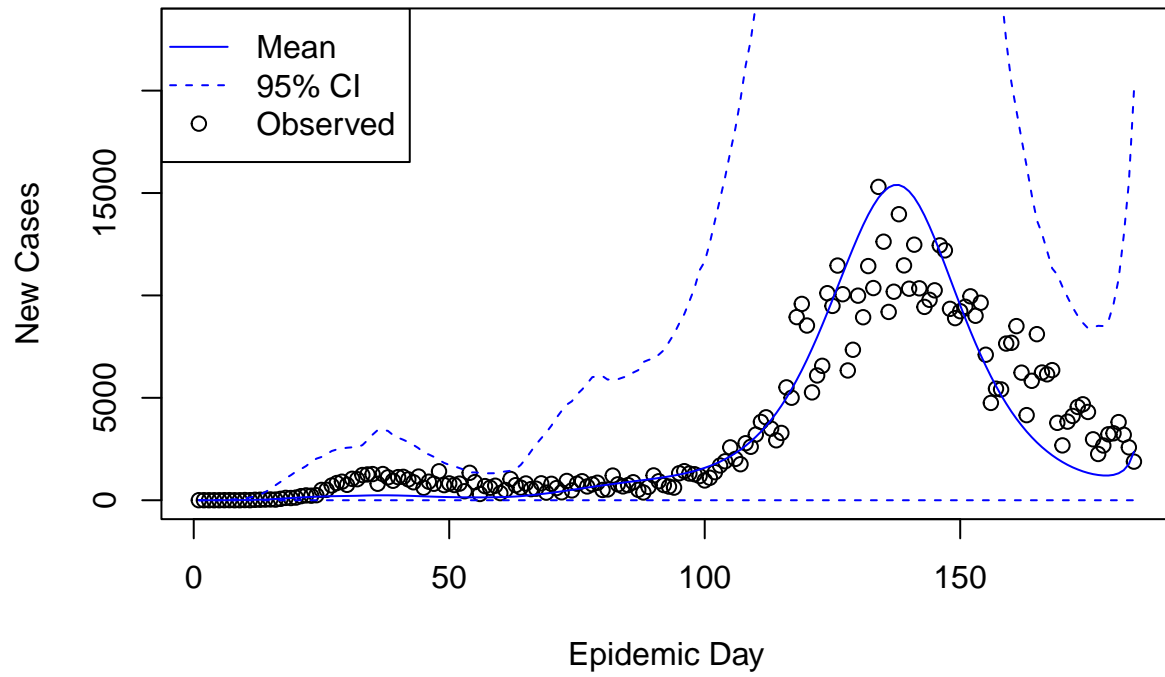
Model 13: Posterior Distribution
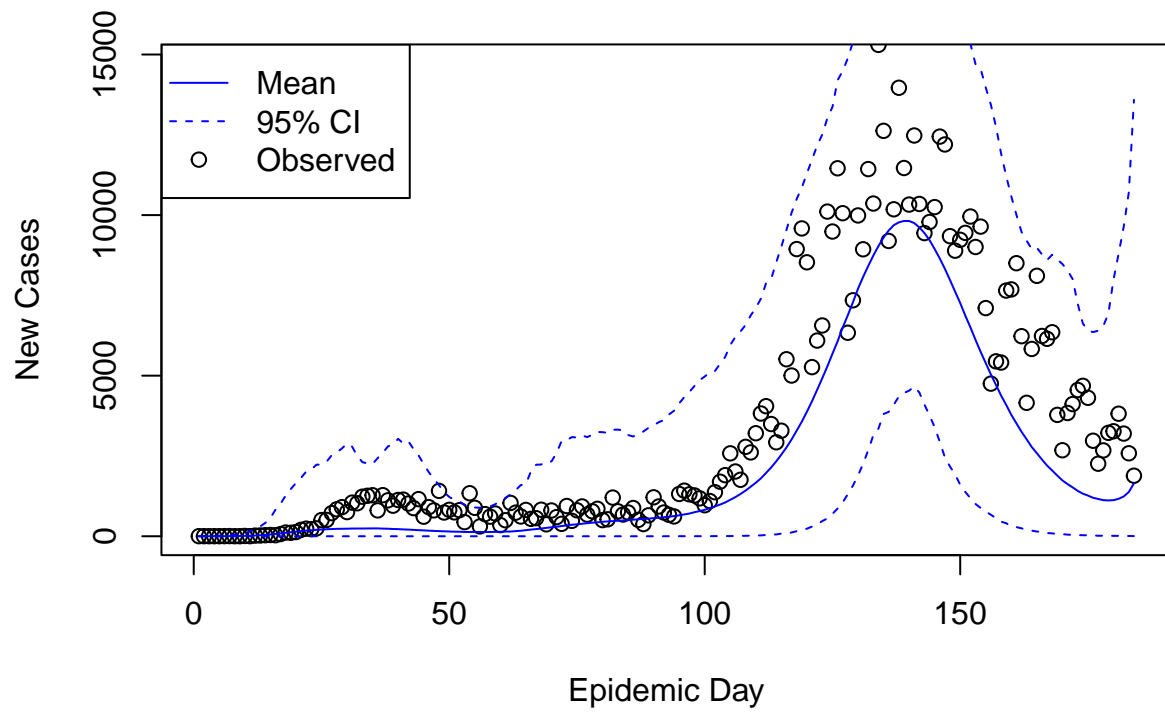
Model 14: Posterior Predictive Distribution
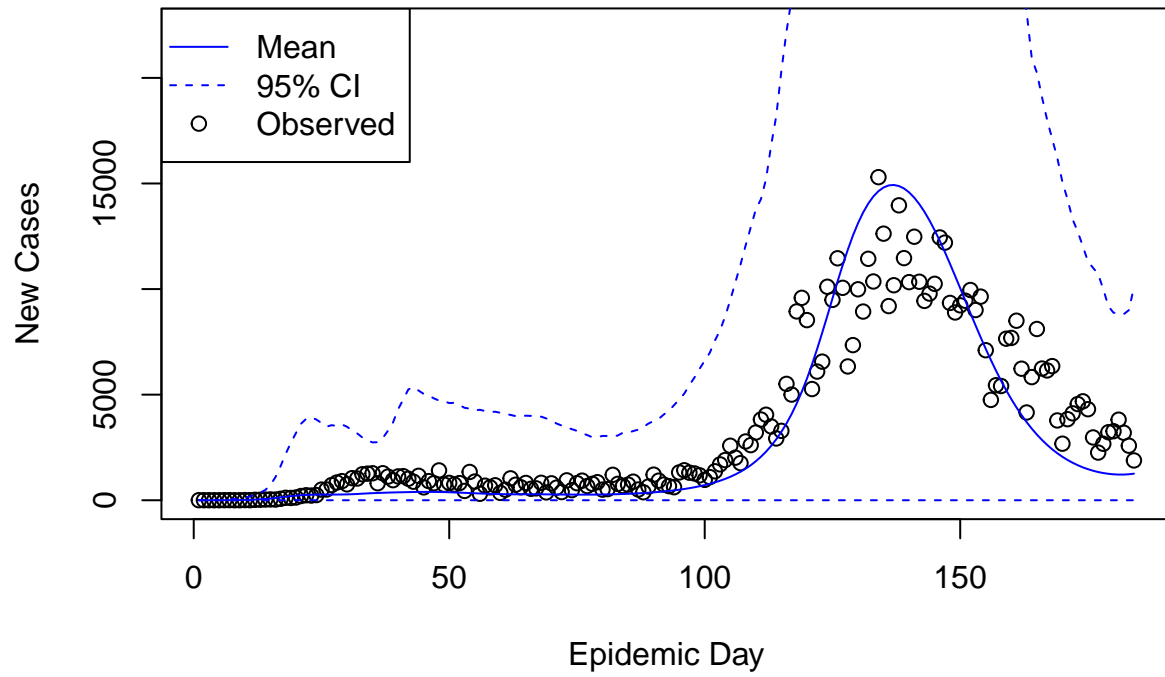
Model 14: Posterior Distribution
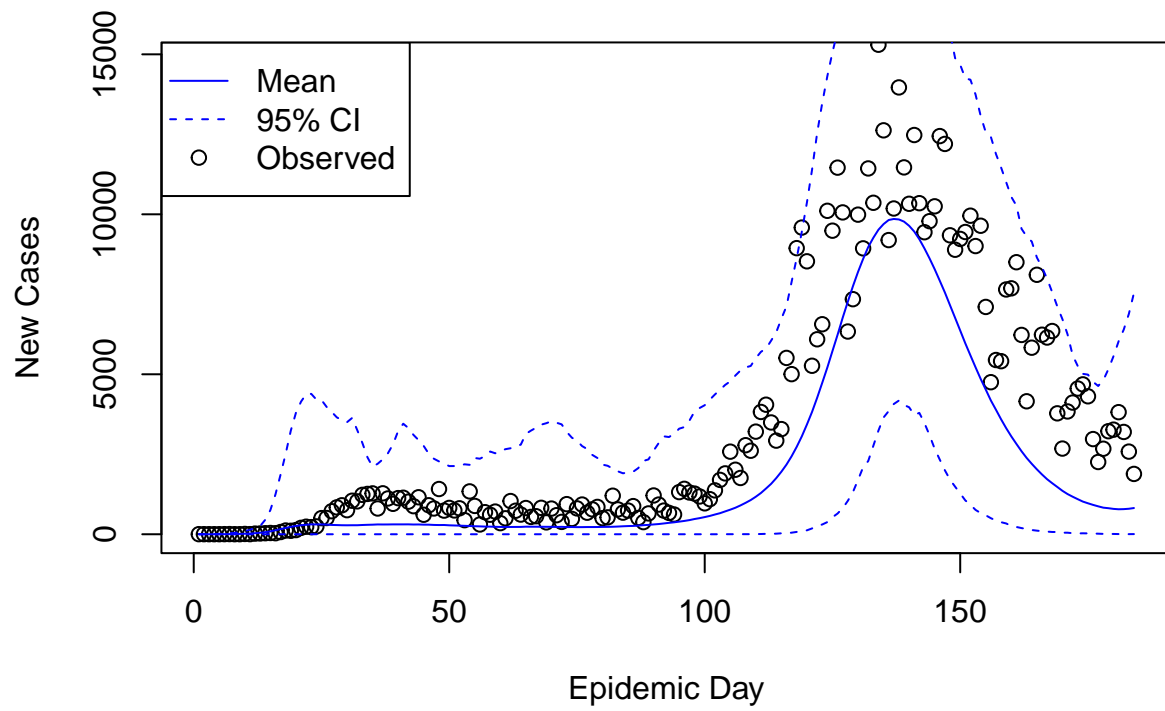
Model 6 (Weibull Distribution): Posterior Predictive Distribution
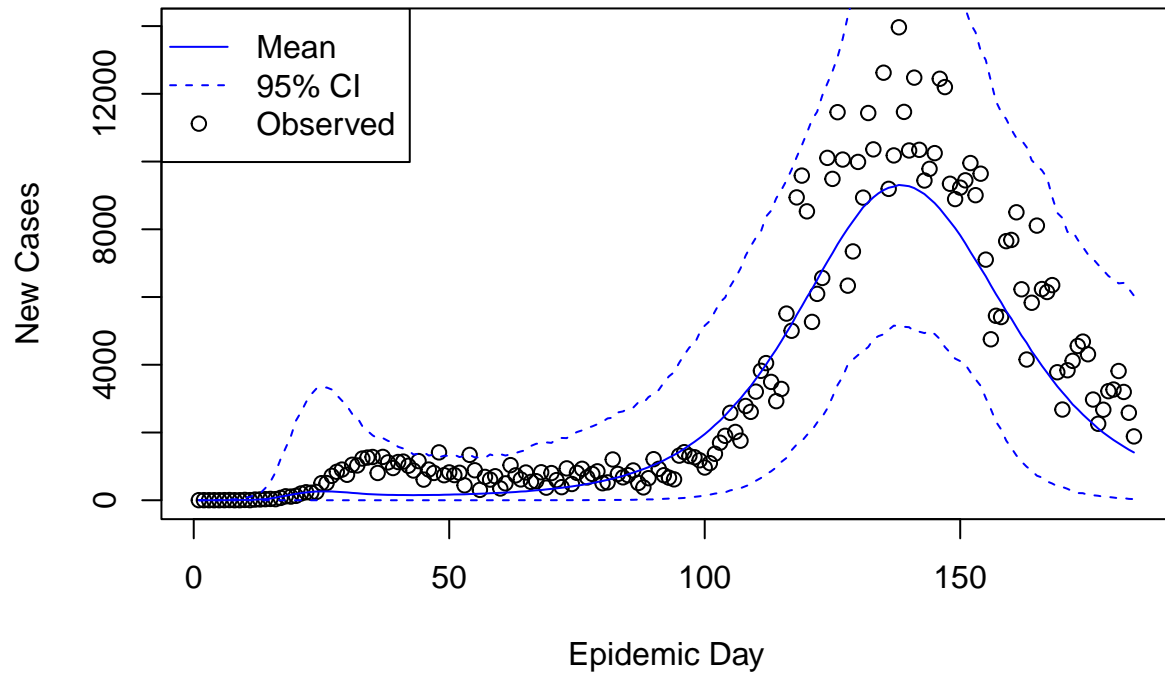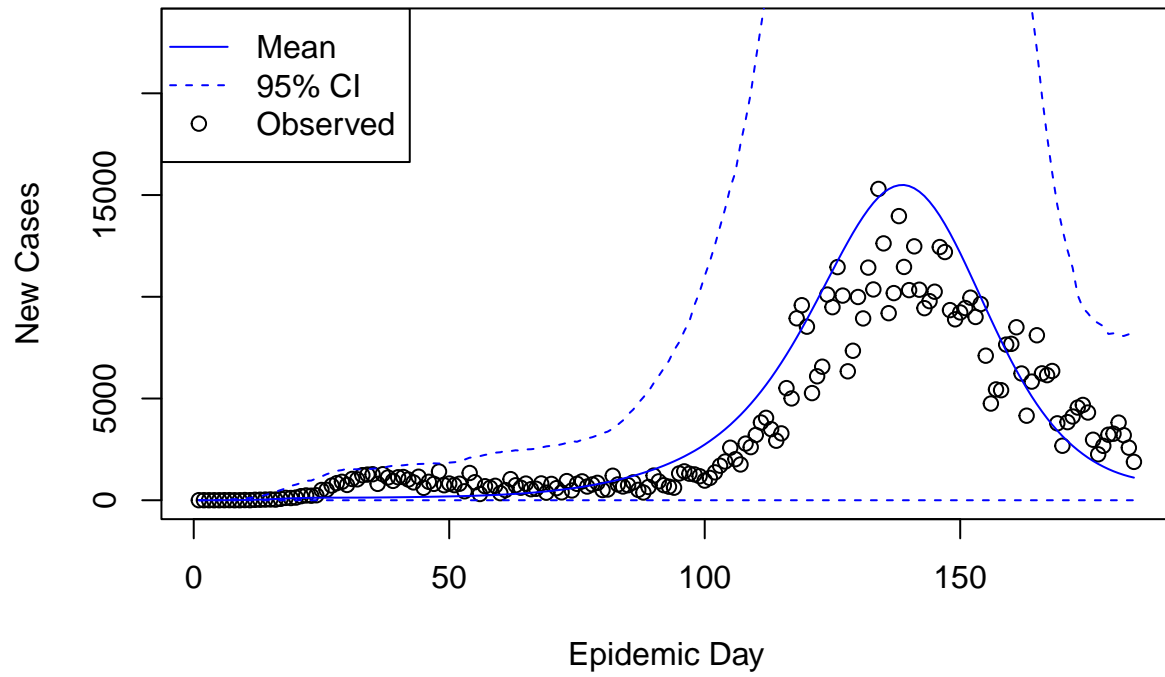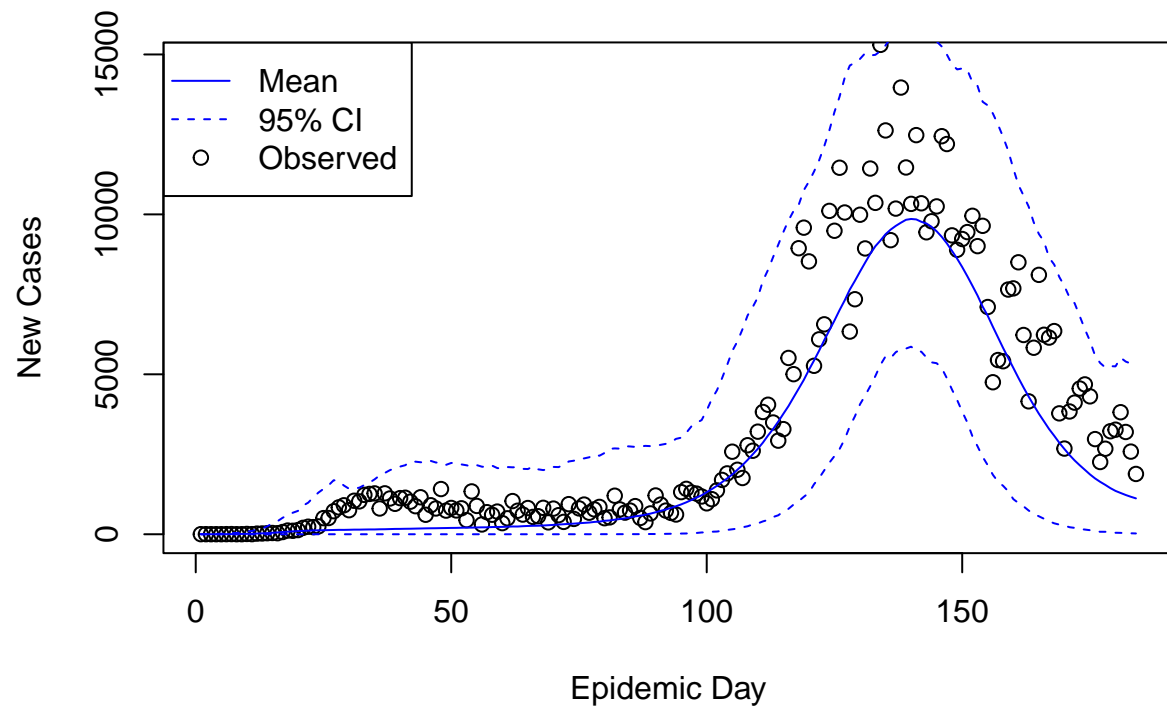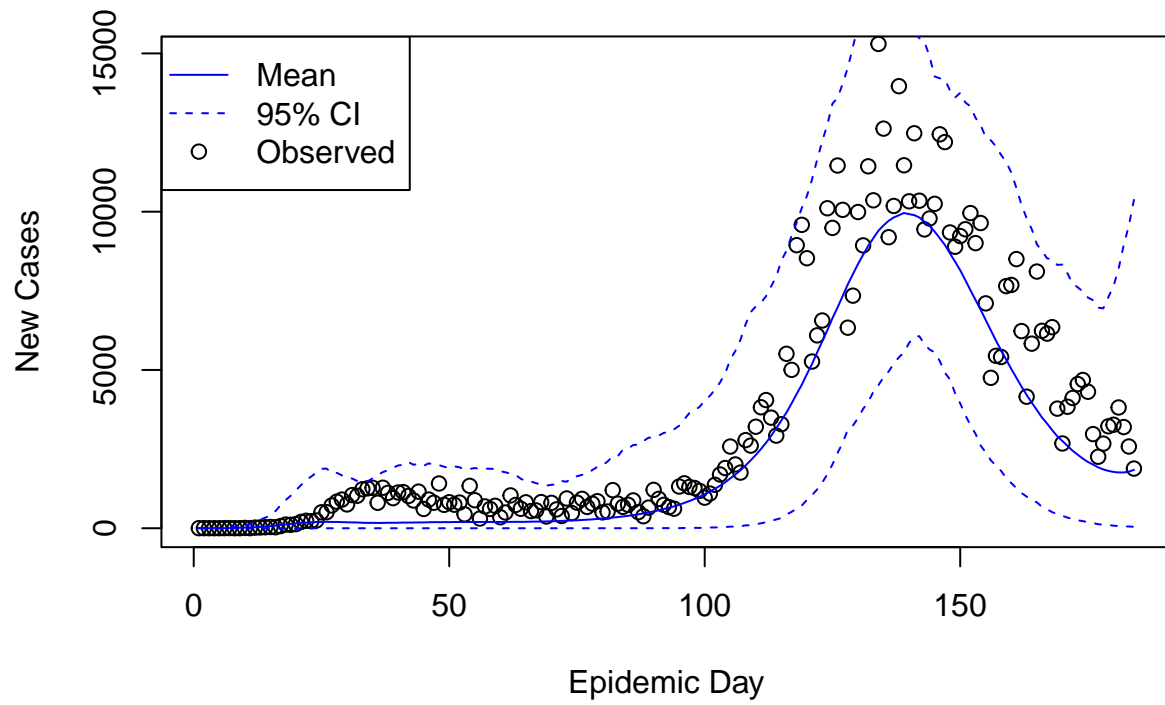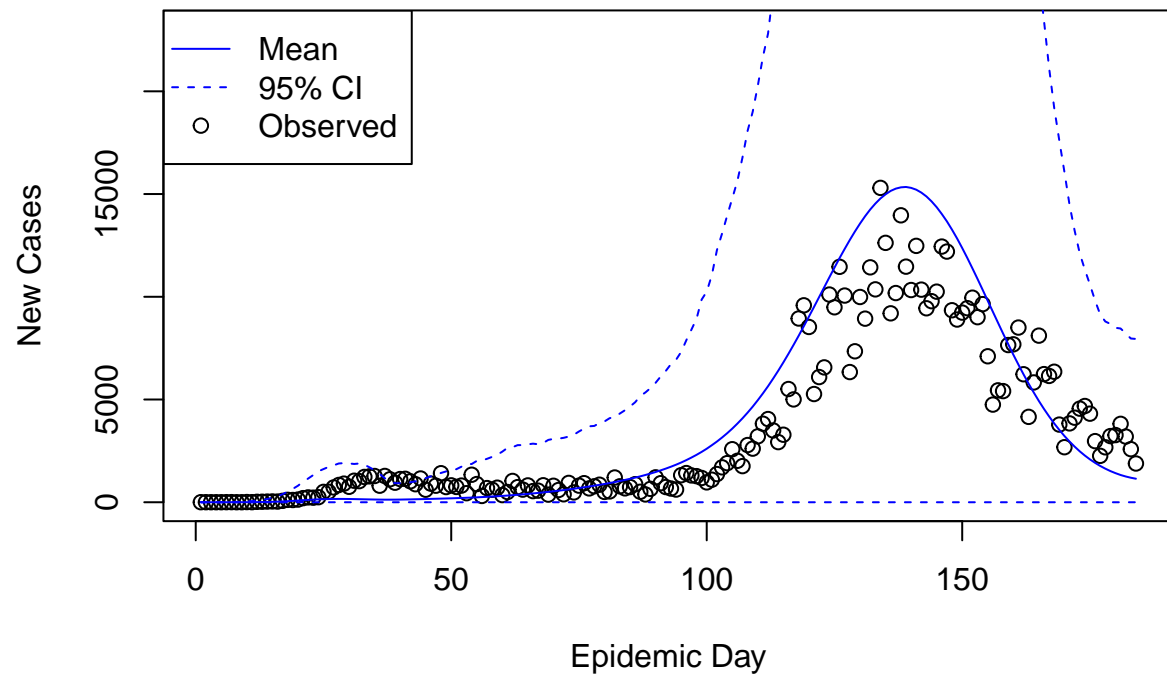
Model 6 (Weibull Distribution): Posterior Distribution
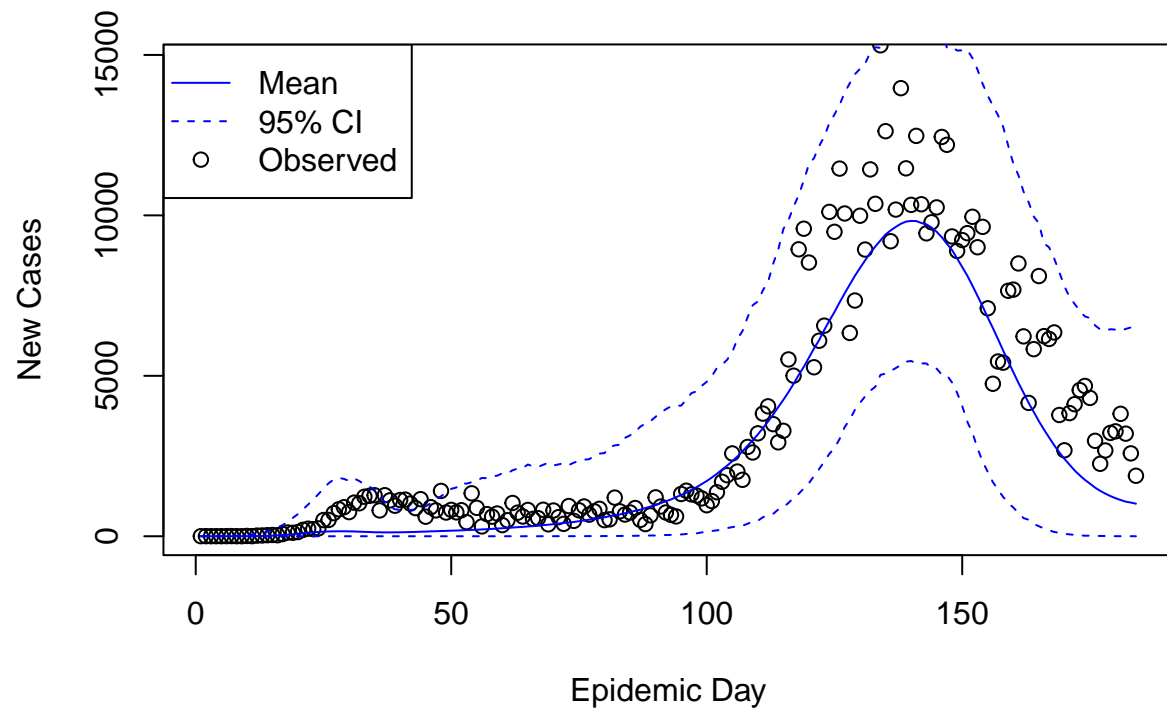
Model 15: Posterior Predictive Distribution
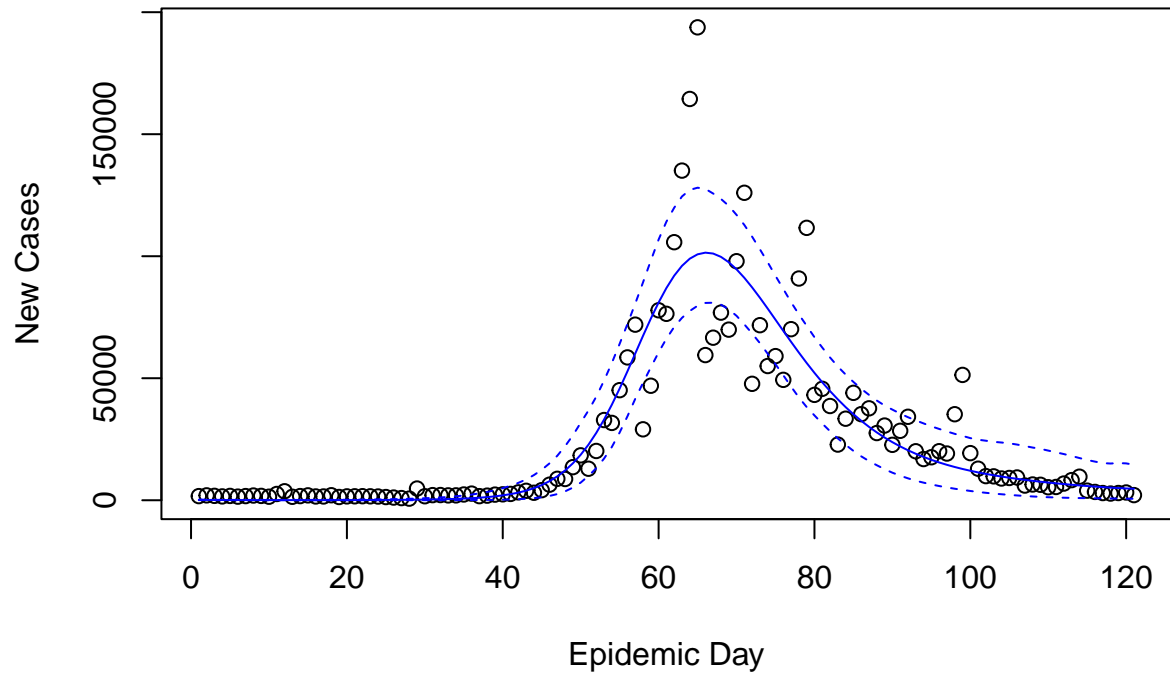
Model 15: Posterior Distribution

New Cases

Epidemic Day
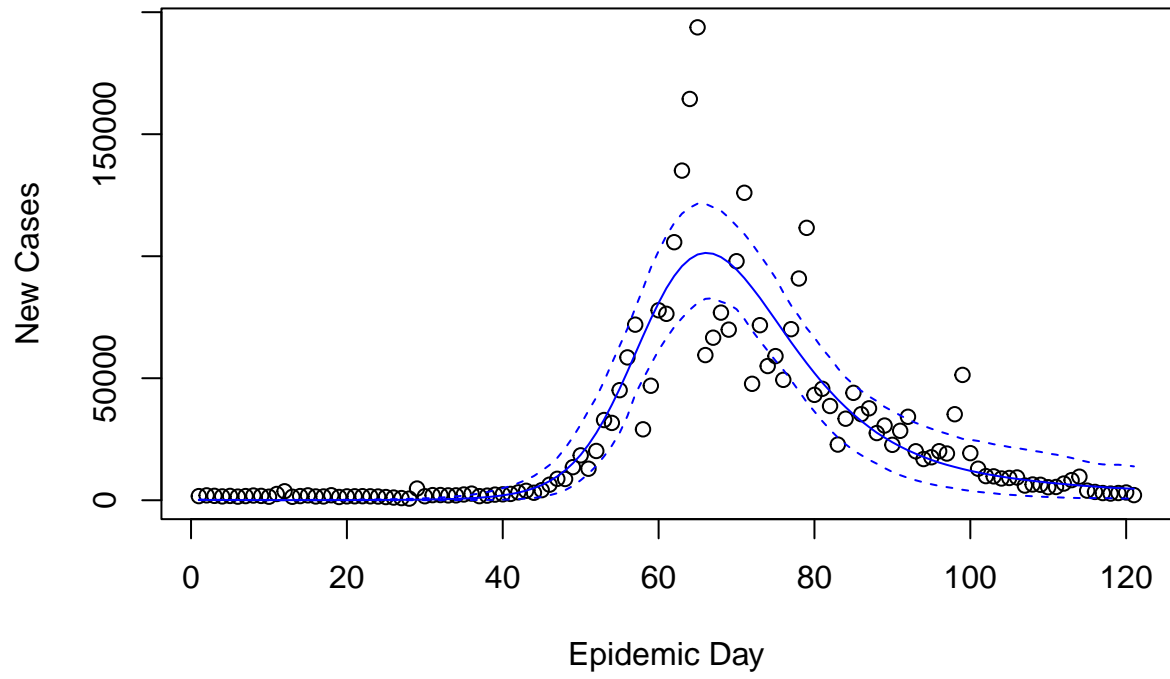
Model 3 Intensity Prediction
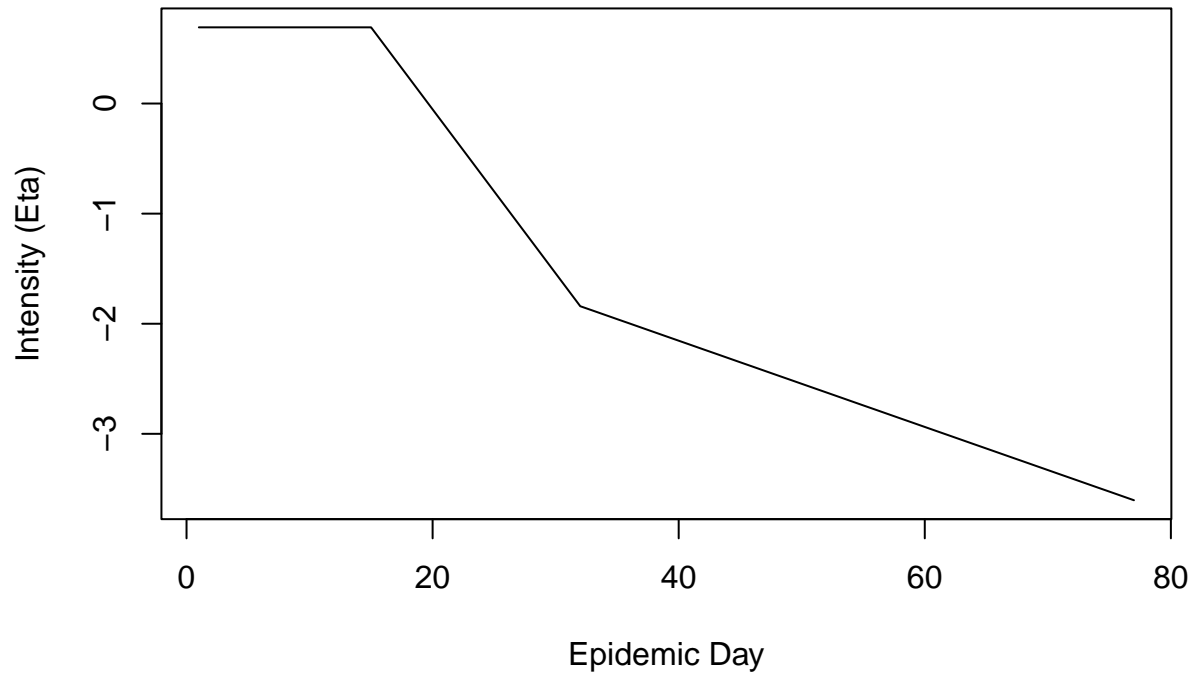
Model 6 Intensity Prediction
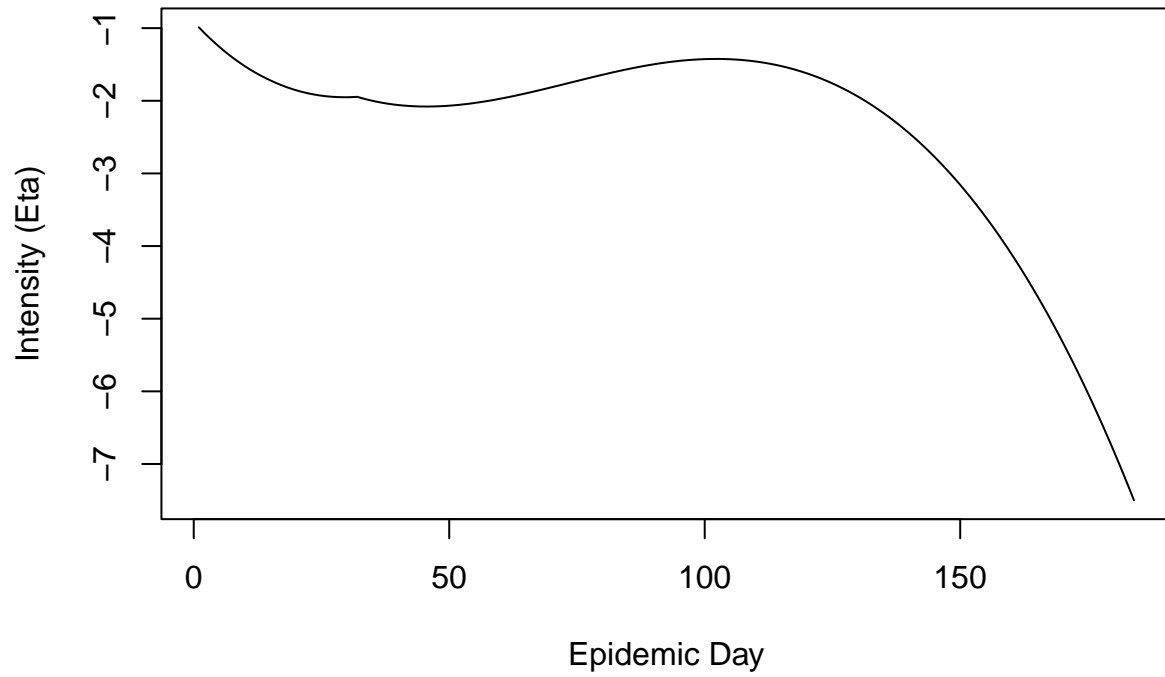
Model 11 Intensity Prediction
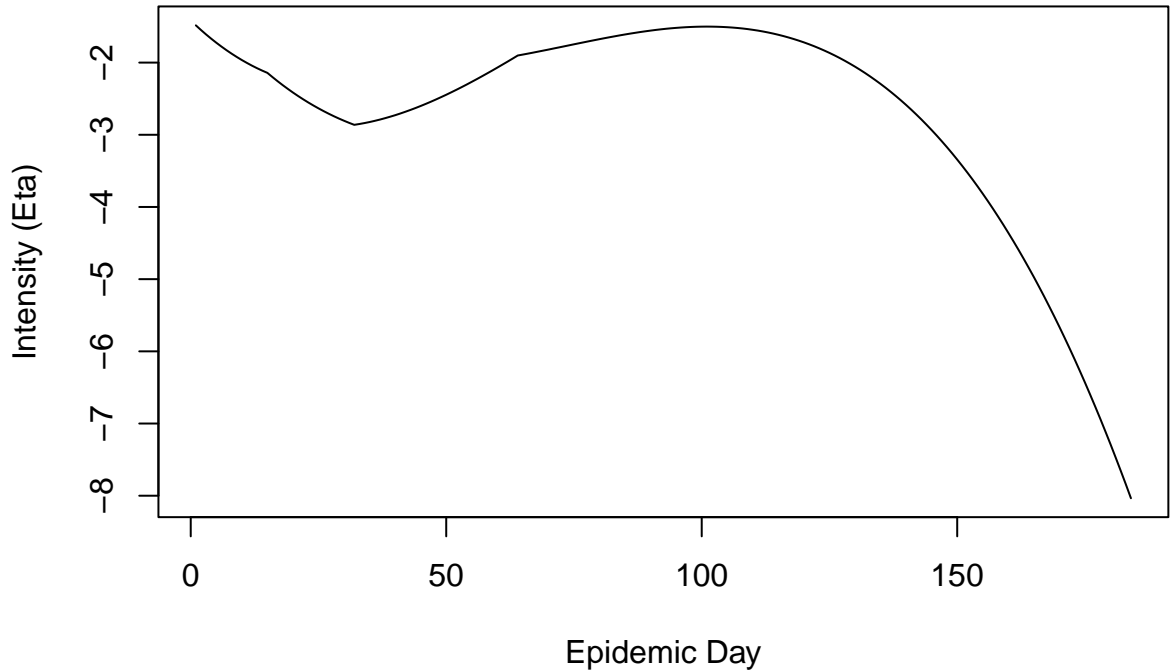
Model 1

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 77
## Data Model Parameters: 0
## Exposure Process Parameters: 1
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                   Mean      SD        95% LB         95% UB
## Beta_SE_1       -1.290 0.052        -1.404         -1.200
## gamma_EI         0.170 0.009         0.152          0.191
## gamma_IR         0.064 0.009         0.050          0.081
## S0_1     21477737.000 0.000 21477737.000 21477737.000
## E0_1             2.000 0.000         2.000          2.000
## I0_1             2.000 0.000         2.000          2.000
## R0_1             0.000 0.000         0.000          0.000
```

Model 2

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 77
## Data Model Parameters: 0
## Exposure Process Parameters: 2
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                    Mean    SD      95% LB            95% UB
## Beta_SE_1         0.274 0.224      -0.129             0.659
## Beta_SE_2        -0.940 0.050      -1.023            -0.826
## gamma_EI          0.143 0.042       0.095             0.259
## gamma_IR          0.034 0.028       0.001             0.099
## S0_1       21477737.000 0.000 21477737.000 21477737.000
## E0_1              2.000 0.000       2.000             2.000
## I0_1              2.000 0.000       2.000             2.000
## R0_1              0.000 0.000       0.000             0.000
```

Model 3

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 77
## Data Model Parameters: 0
## Exposure Process Parameters: 3
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                    Mean    SD      95% LB            95% UB
## Beta_SE_1         0.692 0.218       0.309             1.132
## Beta_SE_2        -1.490 0.141      -1.741            -1.207
## Beta_SE_3         1.098 0.134       0.850             1.349
## gamma_EI          0.151 0.039       0.073             0.224
## gamma_IR          0.085 0.056       0.009             0.212
## S0_1       21477737.000 0.000 21477737.000 21477737.000
## E0_1              2.000 0.000       2.000             2.000
## I0_1              2.000 0.000       2.000             2.000
## R0_1              0.000 0.000       0.000             0.000
```

Model 4

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 3
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                   Mean     SD        95% LB        95% UB
## Beta_SE_1        -1.736 1.302        -3.806         0.389
## Beta_SE_2         0.542 1.027        -1.297         2.169
## Beta_SE_3        -0.713 1.071        -2.416         1.240
## gamma_EI          0.170 0.015         0.138         0.201
## gamma_IR          0.060 0.016         0.032         0.088
## S0_1       21477737.000 0.000 21477737.000 21477737.000
## E0_1              2.000 0.000         2.000         2.000
## I0_1              2.000 0.000         2.000         2.000
## R0_1              0.000 0.000         0.000         0.000
```

Model 5

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 6
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                   Mean     SD        95% LB        95% UB
## Beta_SE_1        -1.251 1.658        -4.671         1.361
## Beta_SE_2        -0.745 1.195        -3.124         1.189
## Beta_SE_3         0.728 1.235        -1.397         3.314
## Beta_SE_4         0.244 3.593        -6.002         7.776
## Beta_SE_5         3.764 4.789        -5.715        13.239
## Beta_SE_6        -3.450 5.064       -12.215         5.996
## gamma_EI          0.165 0.025         0.119         0.204
## gamma_IR          0.057 0.023         0.014         0.104
## S0_1       21477737.000 0.000 21477737.000 21477737.000
## E0_1              2.000 0.000         2.000         2.000
## I0_1              2.000 0.000         2.000         2.000
## R0_1              0.000 0.000         0.000         0.000
```

Model 6

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 7
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                     Mean      SD         95% LB          95% UB
## Beta_SE_1          -0.989   1.876         -4.418           2.181
## Beta_SE_2          -0.010   1.446         -2.905           2.581
## Beta_SE_3          -0.257   1.624         -3.555           2.918
## Beta_SE_4          -2.238   3.859         -9.918           6.064
## Beta_SE_5           2.332   3.307         -2.575           9.014
## Beta_SE_6           2.177   3.790         -5.730           9.316
## Beta_SE_7          -2.433   3.295         -8.391           4.035
## gamma_EI            0.168   0.011          0.148           0.189
## gamma_IR            0.059   0.015          0.029           0.092
## S0_1        21477737.000   0.000   21477737.000   21477737.000
## E0_1               2.000   0.000          2.000           2.000
## I0_1               2.000   0.000          2.000           2.000
## R0_1               0.000   0.000          0.000           0.000
```

Model 7

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 8
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                     Mean      SD         95% LB          95% UB
## Beta_SE_1          -0.890   1.742         -4.392           2.124
## Beta_SE_2          -0.203   1.348         -2.957           2.309
## Beta_SE_3           0.017   1.512         -2.901           2.928
## Beta_SE_4          -1.564   2.954         -7.467           4.304
## Beta_SE_5          -0.639   2.636         -5.349           3.361
## Beta_SE_6           2.852   2.323         -1.216           6.911
## Beta_SE_7          -0.712   2.760         -5.063           4.427
## Beta_SE_8          -2.101   2.960         -7.801           2.356
```

```
## gamma_EI            0.167 0.009           0.151          0.181
## gamma_IR            0.060 0.009           0.043          0.078
## S0_1      21477737.000 0.000 21477737.000 21477737.000
## E0_1            2.000 0.000           2.000          2.000
## I0_1            2.000 0.000           2.000          2.000
## R0_1            0.000 0.000           0.000          0.000
```

Model 8

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 9
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##               Mean     SD      95% LB        95% UB
## Beta_SE_1     -0.815 1.936     -5.395         2.259
## Beta_SE_2     -0.346 1.534     -2.888         2.626
## Beta_SE_3      0.099 1.699     -3.236         3.025
## Beta_SE_4     -1.565 3.497     -7.432         5.390
## Beta_SE_5     -1.087 3.726     -8.353         5.430
## Beta_SE_6      1.421 2.709     -3.498         5.862
## Beta_SE_7      3.200 3.118     -1.783         9.041
## Beta_SE_8     -1.486 3.253     -7.171         4.567
## Beta_SE_9     -1.716 3.813     -9.435         4.379
## gamma_EI       0.165 0.012      0.143         0.185
## gamma_IR       0.060 0.015      0.029         0.088
## S0_1      21477737.000 0.000 21477737.000 21477737.000
## E0_1           2.000 0.000      2.000         2.000
## I0_1           2.000 0.000      2.000         2.000
## R0_1           0.000 0.000      0.000         0.000
```

Model 9

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 4
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
```

```
## Parameter Estimates:
##                   Mean    SD       95% LB        95% UB
## Beta_SE_1        -1.666 1.590      -4.509         1.116
## Beta_SE_2        -0.440 1.548      -2.963         2.627
## Beta_SE_3         0.814 2.178      -3.504         4.319
## Beta_SE_4        -0.597 0.957      -2.223         1.262
## gamma_EI          0.157 0.029       0.092         0.214
## gamma_IR          0.050 0.030       0.003         0.111
## S0_1      21477737.000 0.000 21477737.000 21477737.000
## E0_1             2.000 0.000       2.000         2.000
## I0_1             2.000 0.000       2.000         2.000
## R0_1             0.000 0.000       0.000         0.000
```

Model 10

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 7
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                   Mean    SD       95% LB        95% UB
## Beta_SE_1        -1.802 1.704      -4.762         1.095
## Beta_SE_2        -0.357 1.581      -3.748         2.138
## Beta_SE_3         0.691 2.160      -2.772         4.767
## Beta_SE_4        -0.518 1.086      -2.421         1.681
## Beta_SE_5        -0.875 3.954      -7.736         7.210
## Beta_SE_6         2.708 4.038      -3.236        11.219
## Beta_SE_7        -2.203 4.806     -12.828         5.985
## gamma_EI          0.167 0.014       0.136         0.189
## gamma_IR          0.059 0.012       0.035         0.081
## S0_1      21477737.000 0.000 21477737.000 21477737.000
## E0_1             2.000 0.000       2.000         2.000
## I0_1             2.000 0.000       2.000         2.000
## R0_1             0.000 0.000       0.000         0.000
```

Model 11

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 8
## Reinfection Model Parameters: 0
```

```
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                 Mean    SD       95% LB        95% UB
## Beta_SE_1      -1.484 2.007       -5.485        2.378
## Beta_SE_2      -0.304 1.724       -3.472        3.043
## Beta_SE_3       0.371 2.289       -3.651        4.538
## Beta_SE_4      -0.299 1.289       -2.369        2.365
## Beta_SE_5      -2.004 4.343      -10.485        6.024
## Beta_SE_6       1.952 4.373       -6.124       10.076
## Beta_SE_7       1.746 3.825       -5.407        8.348
## Beta_SE_8      -3.468 4.473      -12.774        5.290
## gamma_EI        0.169 0.011        0.148        0.188
## gamma_IR        0.053 0.018        0.021        0.089
## S0_1     21477737.000 0.000 21477737.000 21477737.000
## E0_1            2.000 0.000        2.000        2.000
## I0_1            2.000 0.000        2.000        2.000
## R0_1            0.000 0.000        0.000        0.000
```

Model 12

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 9
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                 Mean    SD       95% LB        95% UB
## Beta_SE_1      -1.123 2.246       -5.622        2.474
## Beta_SE_2      -0.317 2.110       -4.110        3.589
## Beta_SE_3       0.157 2.776       -5.108        4.894
## Beta_SE_4      -0.141 1.295       -2.701        2.110
## Beta_SE_5      -2.038 4.466      -11.219        5.206
## Beta_SE_6      -1.111 4.544      -10.764        6.783
## Beta_SE_7       4.642 3.544       -1.906       12.060
## Beta_SE_8      -0.271 3.719       -7.281        5.573
## Beta_SE_9      -1.953 3.603       -8.667        4.264
## gamma_EI        0.164 0.014        0.137        0.195
## gamma_IR        0.056 0.017        0.024        0.090
## S0_1     21477737.000 0.000 21477737.000 21477737.000
## E0_1            2.000 0.000        2.000        2.000
## I0_1            2.000 0.000        2.000        2.000
## R0_1            0.000 0.000        0.000        0.000
```

Model 13

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 10
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                     Mean      SD         95% LB         95% UB
## Beta_SE_1         -1.343  2.163         -6.216          1.977
## Beta_SE_2         -0.448  1.579         -3.130          2.612
## Beta_SE_3          0.698  2.270         -4.317          5.102
## Beta_SE_4         -0.618  1.614         -3.677          2.769
## Beta_SE_5         -1.190  4.113         -9.198          5.346
## Beta_SE_6         -2.557  4.555        -11.457          6.550
## Beta_SE_7          0.831  3.718         -5.913          7.435
## Beta_SE_8          3.754  3.208         -2.421          9.498
## Beta_SE_9         -2.175  4.476        -10.814          5.416
## Beta_SE_10        -1.260  4.354         -9.437          6.728
## gamma_EI           0.167  0.014          0.144          0.192
## gamma_IR           0.058  0.014          0.030          0.085
## S0_1       21477737.000  0.000 21477737.000 21477737.000
## E0_1               2.000  0.000          2.000          2.000
## I0_1               2.000  0.000          2.000          2.000
## R0_1               0.000  0.000          0.000          0.000
```

Model 14

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 7
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                     Mean      SD      95% LB         95% UB
## Beta_SE_1         -0.085  2.194      -4.124          3.661
## Beta_SE_2         -2.692  1.918      -6.532          0.649
## Beta_SE_3         -0.872  2.013      -4.434          2.298
## Beta_SE_4          1.659  2.170      -2.112          6.135
## Beta_SE_5         -0.525  1.593      -4.086          2.207
```

```
## Beta_SE_6          0.347 2.137       -3.626          5.024
## Beta_SE_7         -0.297 1.716       -3.574          3.338
## gamma_EI           0.167 0.009        0.151          0.185
## gamma_IR           0.060 0.009        0.041          0.078
## S0_1       21477737.000 0.000 21477737.000 21477737.000
## E0_1              2.000 0.000        2.000          2.000
## I0_1              2.000 0.000        2.000          2.000
## R0_1              0.000 0.000        0.000          0.000
```

Model 15

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 121
## Data Model Parameters: 0
## Exposure Process Parameters: 7
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 2
##
##
## Parameter Estimates:
##                   Mean      SD      95% LB        95% UB
## Beta_SE_1        -0.028   7.756     -13.406       14.014
## Beta_SE_2        -0.290   7.211     -13.941       12.732
## Beta_SE_3         1.682   0.501       0.899        2.771
## Beta_SE_4        -1.697   0.520      -2.612       -0.822
## Beta_SE_5        -0.927   0.830      -2.583        0.568
## Beta_SE_6        -1.884  11.591     -22.361       19.515
## Beta_SE_7        -2.017  10.878     -23.838       18.023
## gamma_EI          0.155   0.054       0.068        0.271
## gamma_IR          0.069   0.036       0.014        0.142
## S0_1       21415373.000   0.000 21415373.000 21415373.000
## E0_1           1000.000   0.000    1000.000     1000.000
## I0_1           1694.000   0.000    1694.000     1694.000
## R0_1          59670.000   0.000   59670.000    59670.000
```

Model 6 (Weibull Distribution)

```
## Summary: SEIR Model
##
## Locations: 1
## Time Points: 184
## Data Model Parameters: 0
## Exposure Process Parameters: 7
## Reinfection Model Parameters: 0
## Spatial Parameters: 0
## Transition Parameters: 4
##
##
```

```
## Parameter Estimates:
##                          Mean     SD        95% LB        95% UB
## Beta_SE_1              -1.015 1.440        -4.354         1.952
## Beta_SE_2              -0.049 1.163        -2.634         2.319
## Beta_SE_3              -0.165 1.302        -2.573         2.495
## Beta_SE_4              -1.355 2.692        -7.030         3.263
## Beta_SE_5               1.598 2.233        -2.609         5.612
## Beta_SE_6               1.332 2.849        -4.297         5.981
## Beta_SE_7              -2.273 2.900        -8.369         2.238
## latent_shape            2.176 0.136         1.937         2.416
## latent_scale            6.607 0.384         5.857         7.244
## infectious_shape        4.384 0.841         2.946         6.392
## infectious_scale       15.940 1.902        12.019        19.425
## S0_1             21477737.000 0.000 21477737.000 21477737.000
## E0_1                    2.000 0.000         2.000         2.000
## I0_1                    2.000 0.000         2.000         2.000
## R0_1                    0.000 0.000         0.000         0.000
```

Bayes Factor (Model 2 vs Model 3)

```
## [1] "Assuming equal prior probabilities."
```

```
##      [,1] [,2]
## [1,]  NaN    0
## [2,]  Inf    1
```

Bayes Factor (Comparison Between Models 4-8)

```
## [1] "Assuming equal prior probabilities."
```

```
##             [,1]      [,2]      [,3]      [,4]      [,5]
## [1,] 1.0000000 0.7909535 0.7948403 0.9203414 1.133100
## [2,] 1.2642968 1.0000000 1.0049140 1.1635846 1.432574
## [3,] 1.2581144 0.9951100 1.0000000 1.1578947 1.425569
## [4,] 1.0865533 0.8594132 0.8636364 1.0000000 1.231173
## [5,] 0.8825348 0.6980440 0.7014742 0.8122333 1.000000
```

Bayes Factor (Comparison Between Models 9-14)

```
## [1] "Assuming equal prior probabilities."
```

```
##            [,1]      [,2]      [,3]      [,4]      [,5]      [,6]
## [1,] 1.000000 0.6592506 0.6471264 0.6354402 0.7208707 0.7055138
## [2,] 1.516874 1.0000000 0.9816092 0.9638826 1.0934699 1.0701754
## [3,] 1.545293 1.0187354 1.0000000 0.9819413 1.1139565 1.0902256
## [4,] 1.573712 1.0374707 1.0183908 1.0000000 1.1344430 1.1102757
## [5,] 1.387211 0.9145199 0.8977011 0.8814898 1.0000000 0.9786967
## [6,] 1.417407 0.9344262 0.9172414 0.9006772 1.0217670 1.0000000
```

Bayes Factor (Model 6 vs Model 11)

```
## [1] "Assuming equal prior probabilities."
```

```
##              [,1]     [,2]
## [1,] 1.0000000 1.683442
## [2,] 0.5940212 1.000000
```

Bayes Factor (Model 6: Exponential Distribution vs Weibull Distribution)

```
## [1] "Assuming equal prior probabilities."
```

```
##              [,1]      [,2]
## [1,] 1.000000 0.8941441
## [2,] 1.118388 1.0000000
```

Coverage, width and bias for model 6 (latent and infectious period estimates)

```
## $coverage
## [1] 1
##
## $width
## [1] 0.03707391
##
## $bias
## [1] -0.8755908
```

```
## $coverage
## [1] 1
##
## $width
## [1] 0.06515869
##
## $bias
## [1] 4.894005
```

Coverage, width and bias for model 11 (latent and infectious period estimates)

```
## $coverage
## [1] 1
##
## $width
## [1] 0.03474615
##
```

```
## $bias
## [1] -1.033315


## $coverage
## [1] 1
##
## $width
## [1] 0.0653197
##
## $bias
## [1] 14.28755
```

Coverage, width and bias for model 6 with weibull distribution (latent and infectious period estimates (scale and shape))

```
## $coverage
## [1] 1
##
## $width
## [1] 0.488165
##
## $bias
## [1] 4.520094


## $coverage
## [1] 1
##
## $width
## [1] 1.461511
##
## $bias
## [1] -2.941719


## $coverage
## [1] 1
##
## $width
## [1] 3.616202
##
## $bias
## [1] 15.38377


## $coverage
## [1] 1
##
## $width
## [1] 7.557618
##
## $bias
## [1] -11.25038
```

Runtimes

```
##           user.self sys.self elapsed
## model 1    375.599    6.037  54.145
## model 2    511.774    9.676  76.667
## model 3    579.565   10.708 198.104
## model 4   1298.063   16.737 195.776
## model 5   1135.537   16.896 178.343
## model 6   1349.993   18.055 210.122
## model 7   1275.806   16.836 198.717
## model 8    897.741   12.775 135.069
## model 9   1742.396   23.287 270.864
## model 10  1248.183   20.035 202.015
## model 11  1283.735   20.784 209.601
## model 12  1184.804   20.033 195.820
## model 13  1267.504   19.162 203.757
## model 14  1005.582   15.906 158.613
## model 15  1227.843   18.600 195.543
## model 16  3119.865   47.148 524.453
```