Argentina Covid Report

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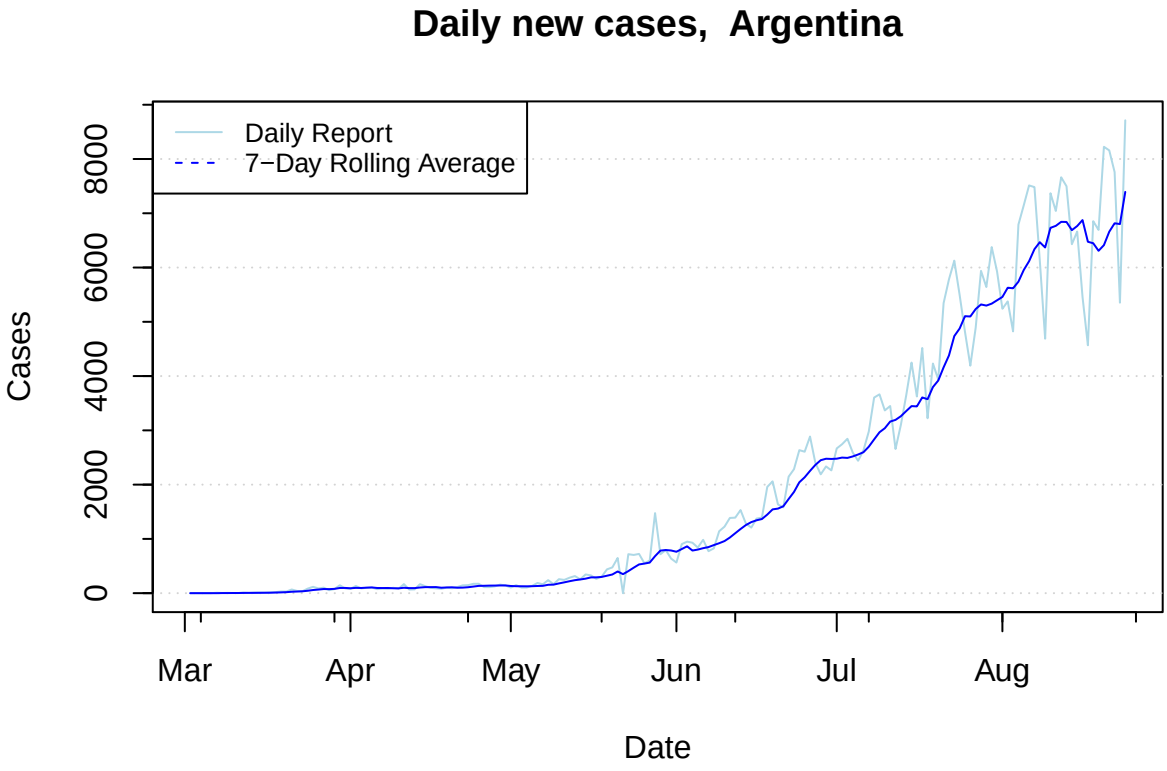
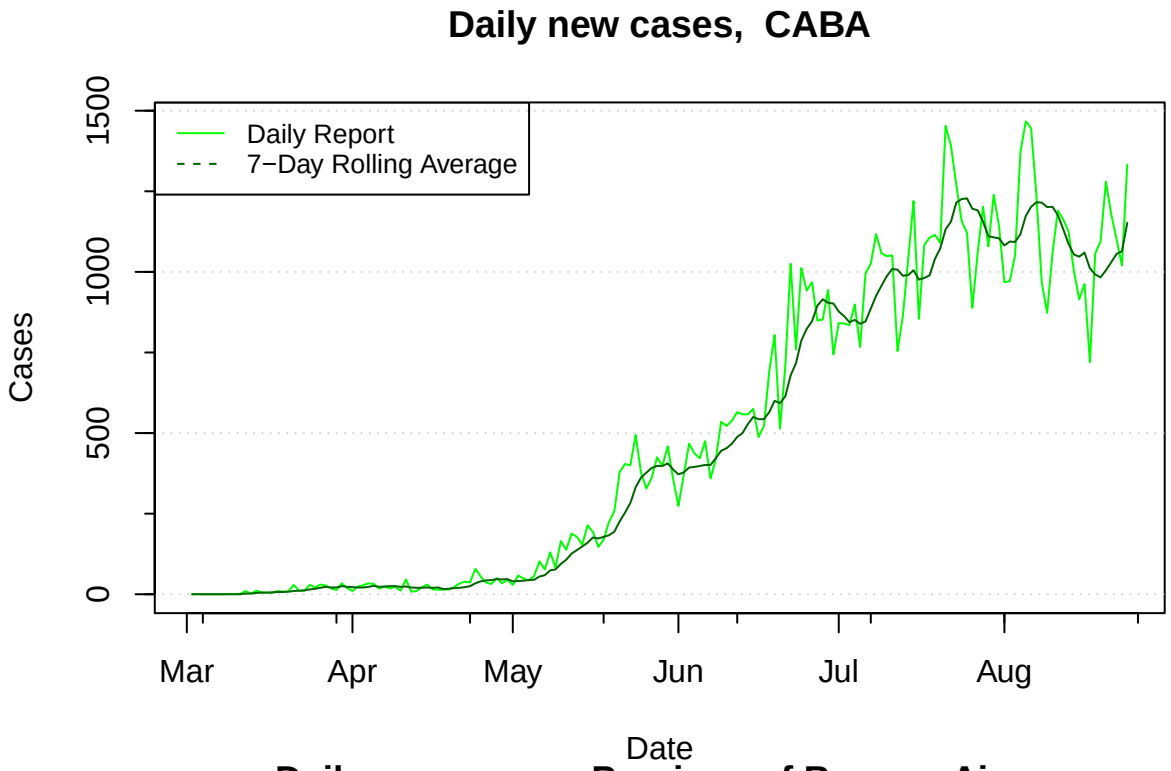
8/25/2020

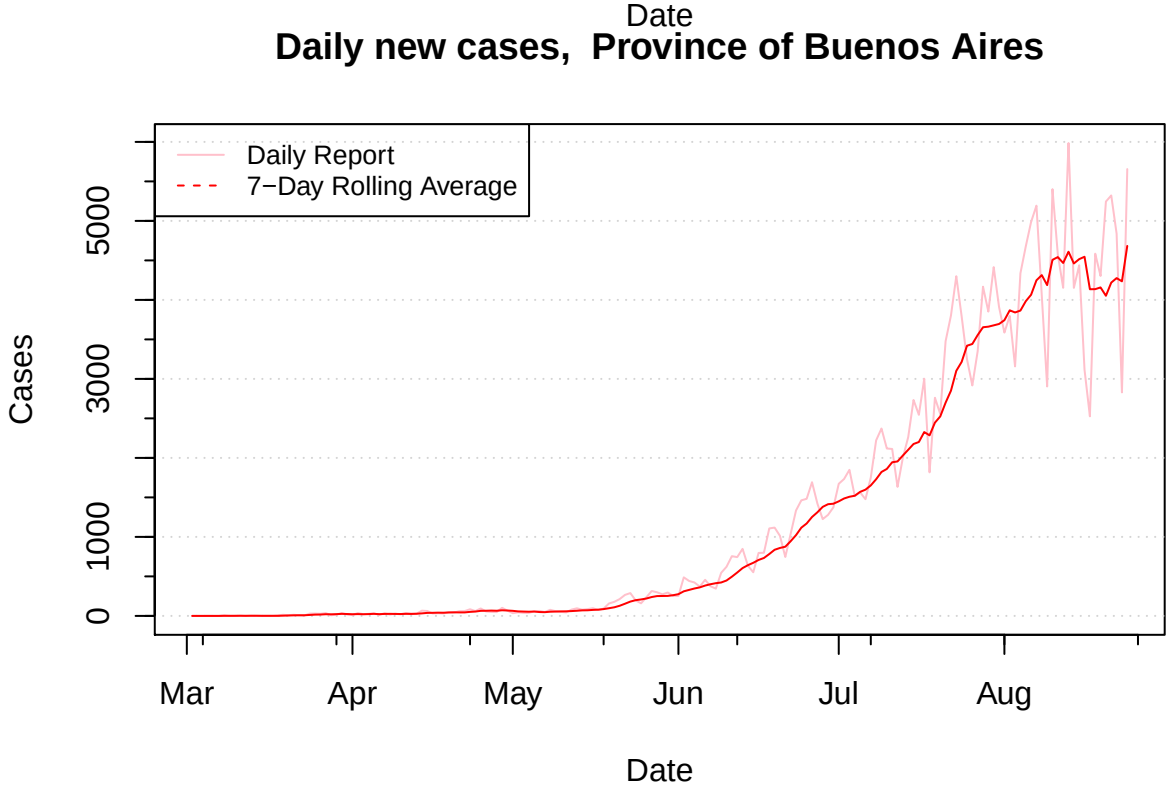
Data as of 8pm 24-AUG-2020

New Cases

The following graphs show the overall epidemiological curves in the localities based on simple "new cases per day" as reported. Note that date of case report DOES NOT equal date of first symptoms or diagnosis, necessarily. Rather, this data is the change in cases from the previous day's report:




Daily new cases, CABA
Daily Report
7−Day Rolling Average
Cases
0
500
1000
1500
Mar
Apr
May
Jun
Jul
Aug
Date

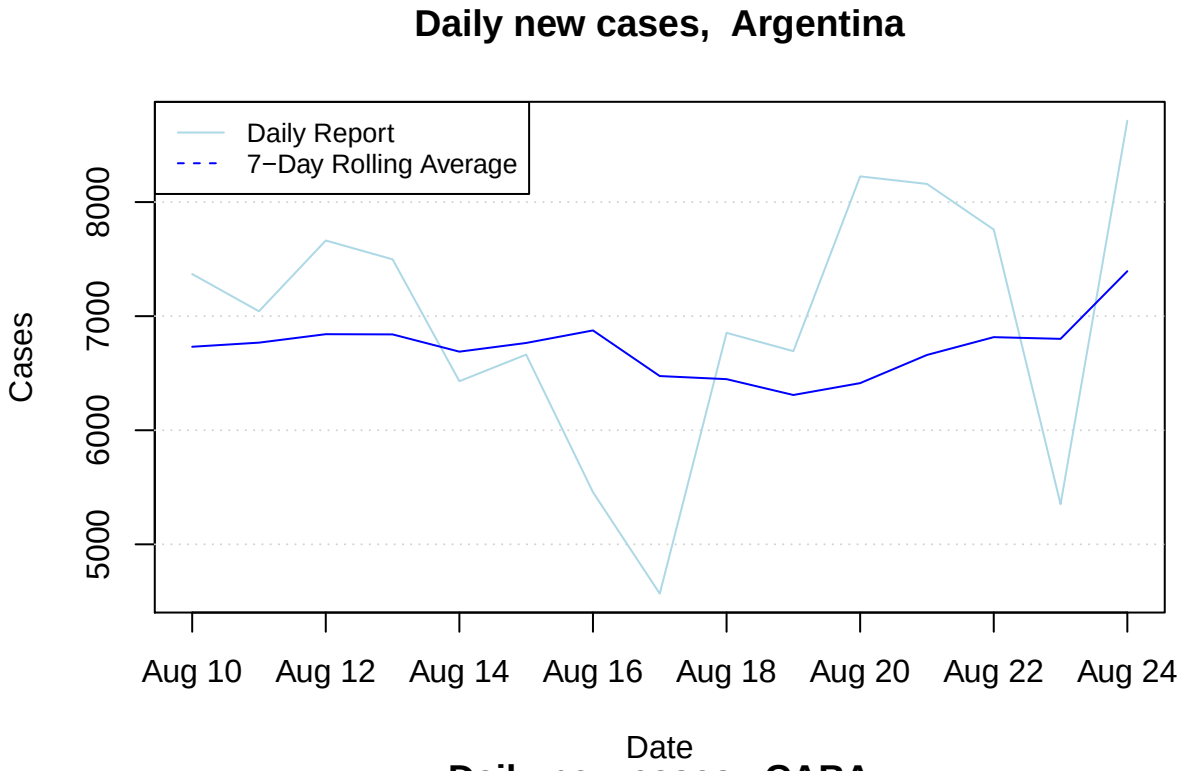

Daily new cases, Province of Buenos Aires
Daily Report
7−Day Rolling Average
Cases
0
1000
3000
5000
Mar
Apr
May
Jun
Jul
Aug
Date

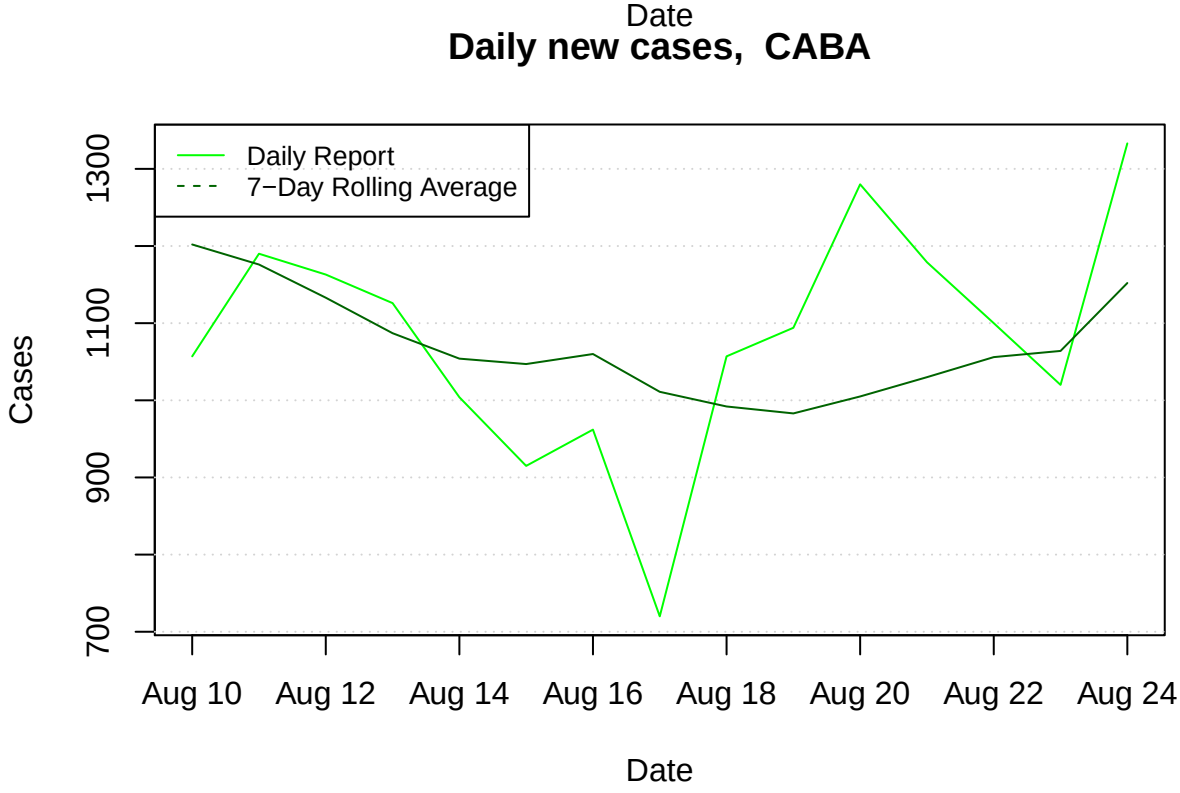
Date	TotalCasesN	NewCasesNa	AvgCasesNa	TotalCasesC	NewCasesC/	AvgCasesCA	TotalCasesP	NewCasesPI	A
2020-08-09	246417	4688	6369	70056	873	1201	151264	2904	
2020-08-10	253786	7369	6732	71113	1057	1202	156666	5402	
2020-08-11	260829	7043	6768	72303	1190	1176	161242	4576	
2020-08-12	268492	7663	6842	73466	1163	1133	165395	4153	
2020-08-13	275990	7498	6840	74592	1126	1087	171381	5986	
2020-08-14	282420	6430	6689	75596	1004	1054	175533	4152	
2020-08-15	289083	6663	6765	76511	915	1047	179971	4438	
2020-08-16	294540	5457	6875	77473	962	1060	183086	3115	
2020-08-17	299108	4568	6475	78193	720	1011	185612	2526	
2020-08-18	305962	6854	6448	79250	1057	992	190197	4585	

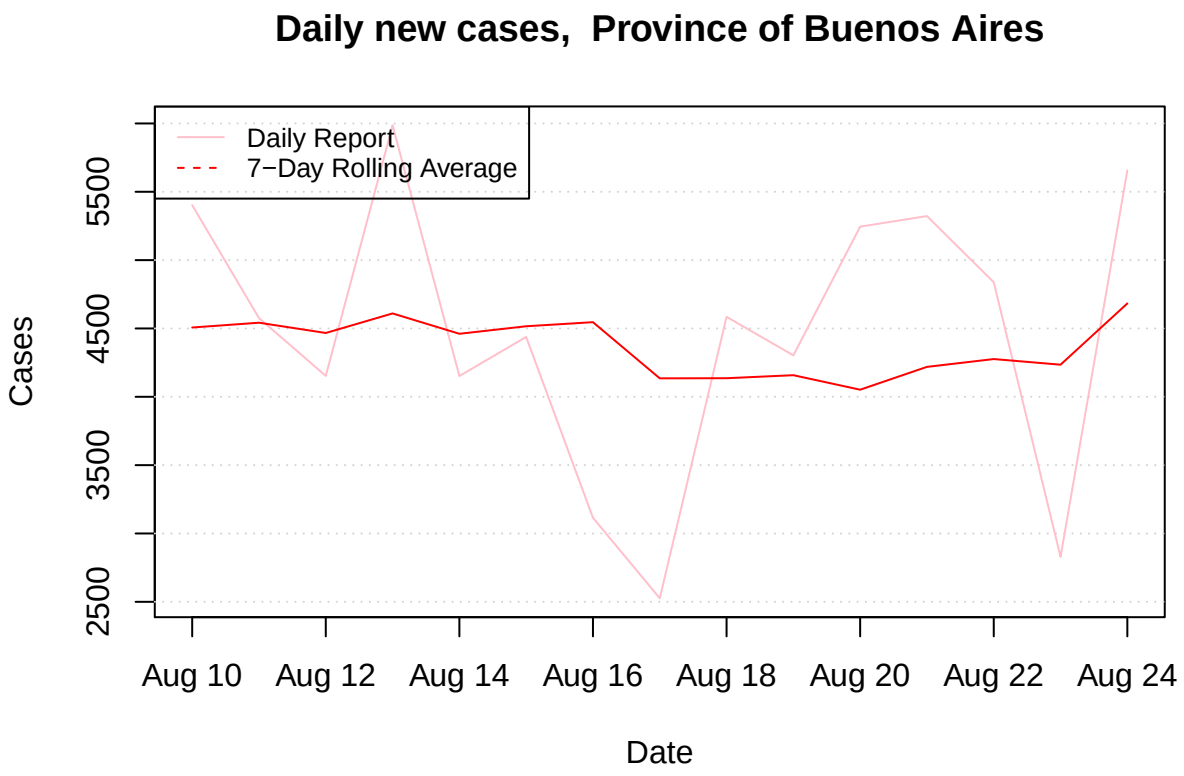
1–10 of 15 rows Previous 1 2 Next

14-day trend

Zooming in on the 14-day trend lines:






Daily new cases, Province of Buenos Aires
Daily Report
7−Day Rolling Average
Cases
2500
3500
4500
5500
Aug 10
Aug 12
Aug 14
Aug 16
Aug 18
Aug 20
Aug 22
Aug 24
Date

Log graphs

The following graphs are generated by:

$$x = Number\ of\ Days\ since\ March\ 3$$

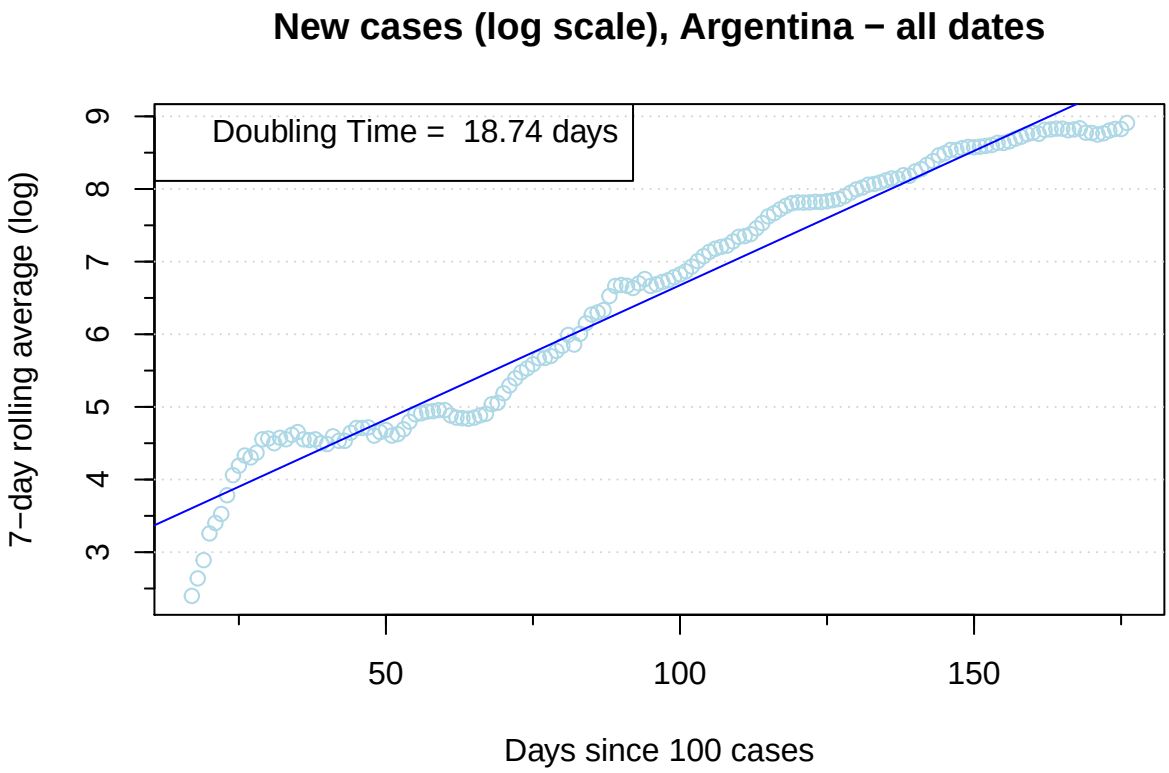
$$y = log(Number\ of\ New\ Cases\ this\ day)$$

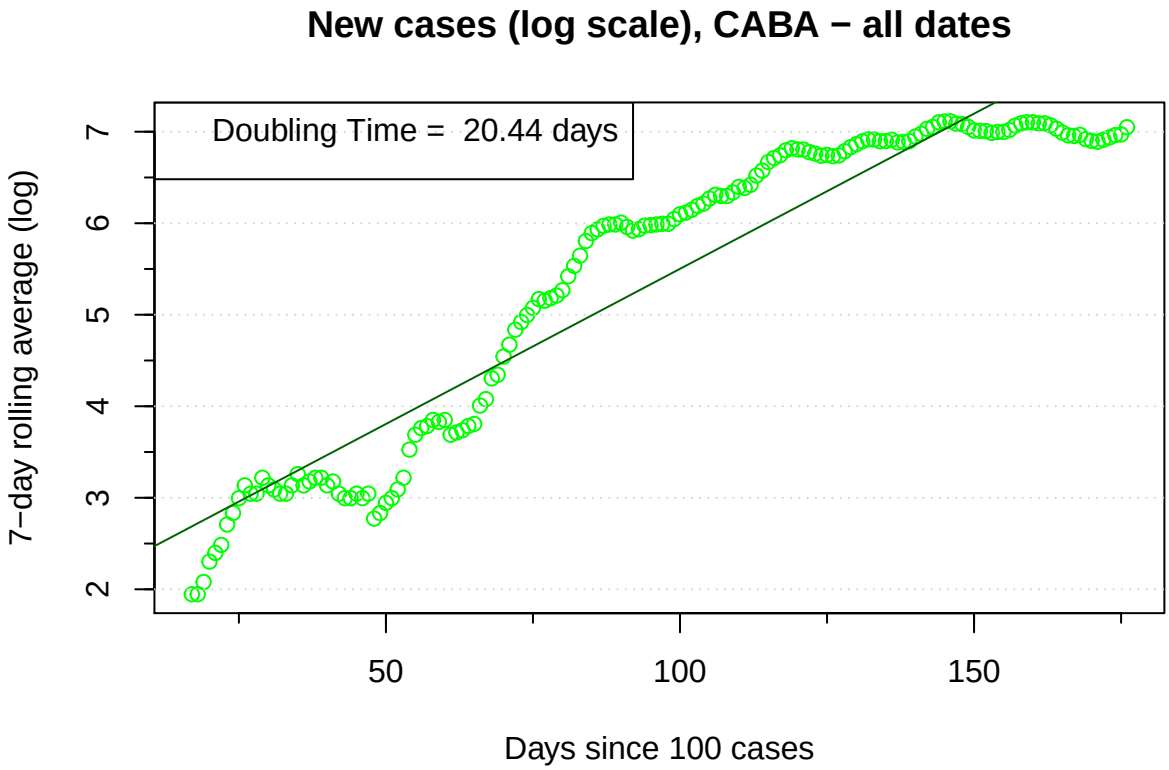
The regression line is drawn using the R "lm()" function over the x values.

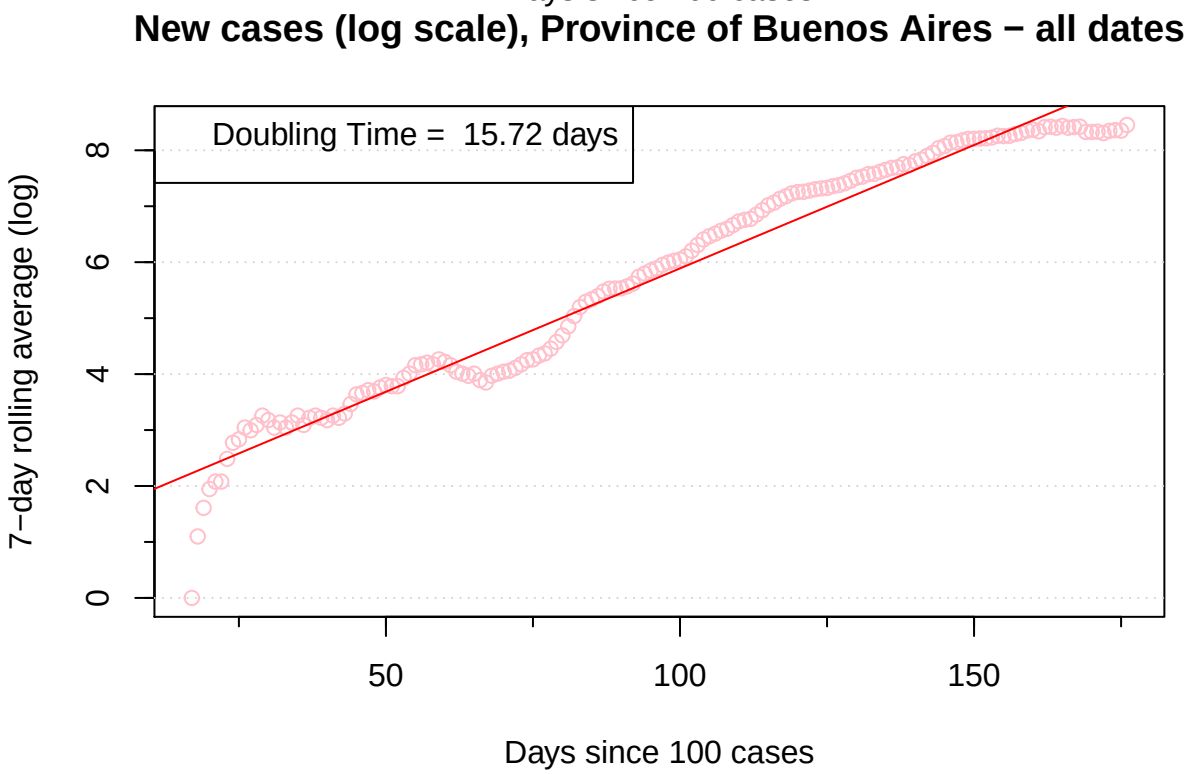
R0 is estimated from the slope of the regression line:

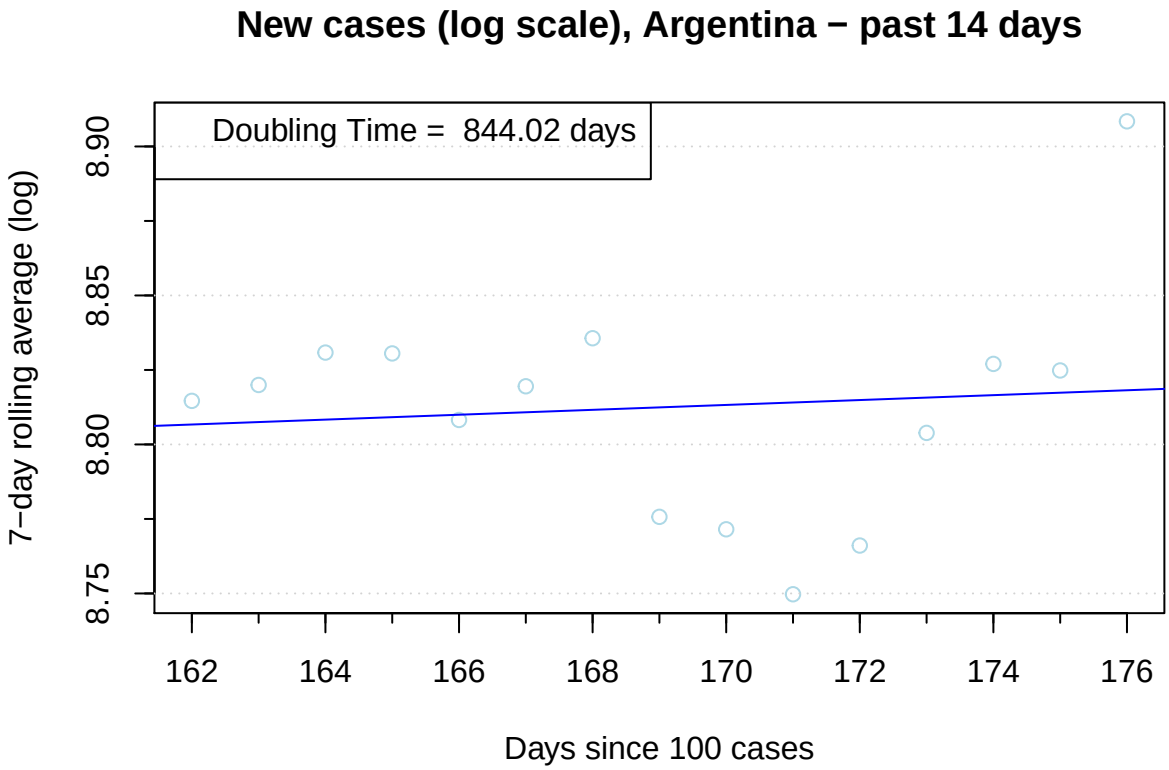
$$y = a + bx$$

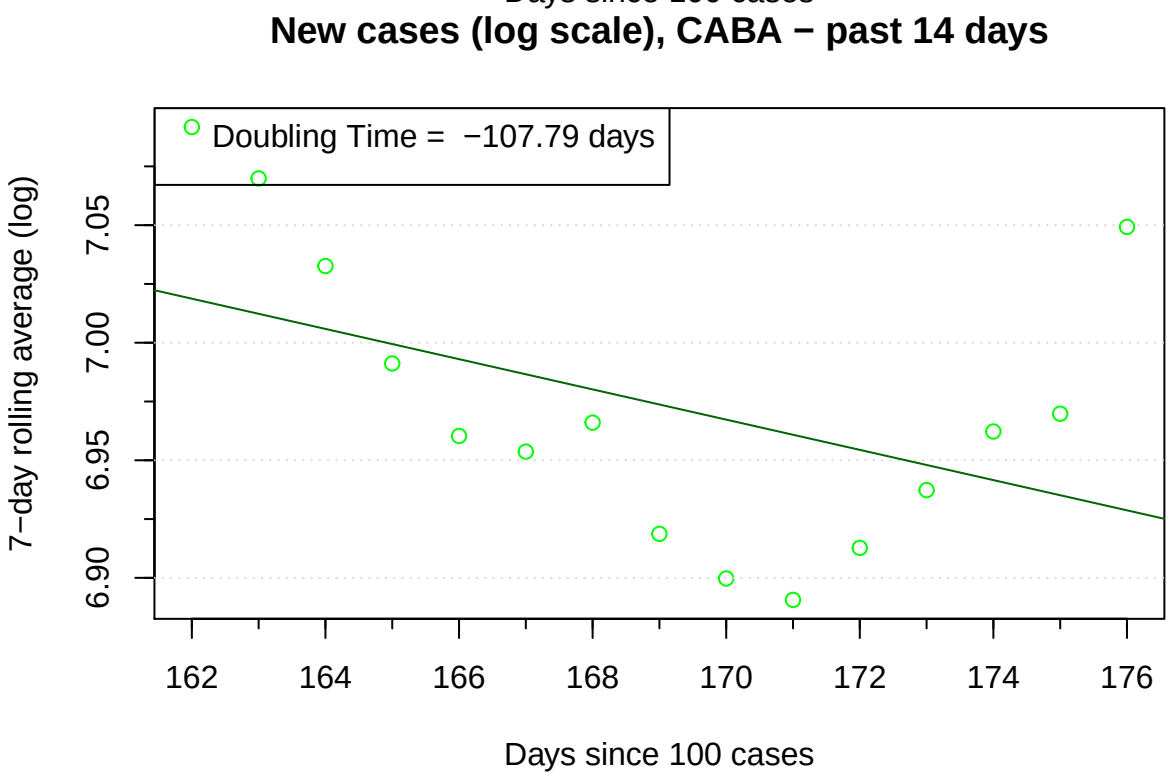
$$dt = log(2)/b$$

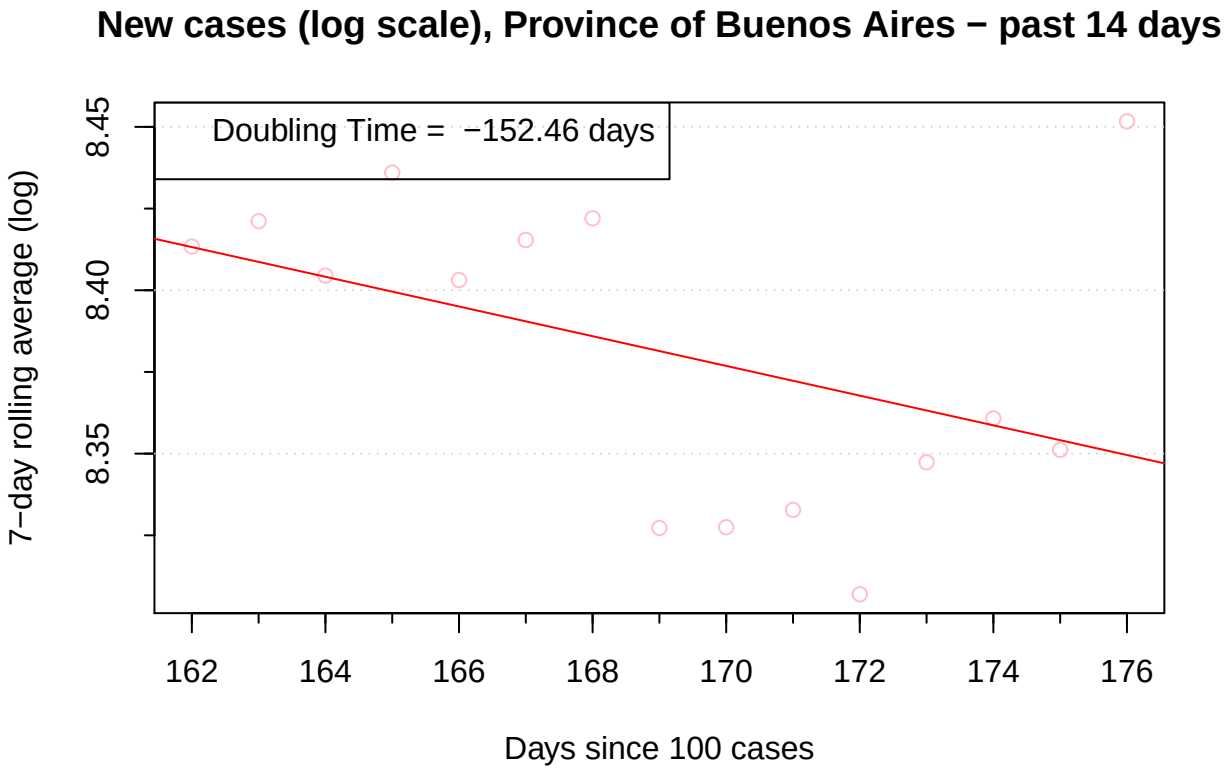


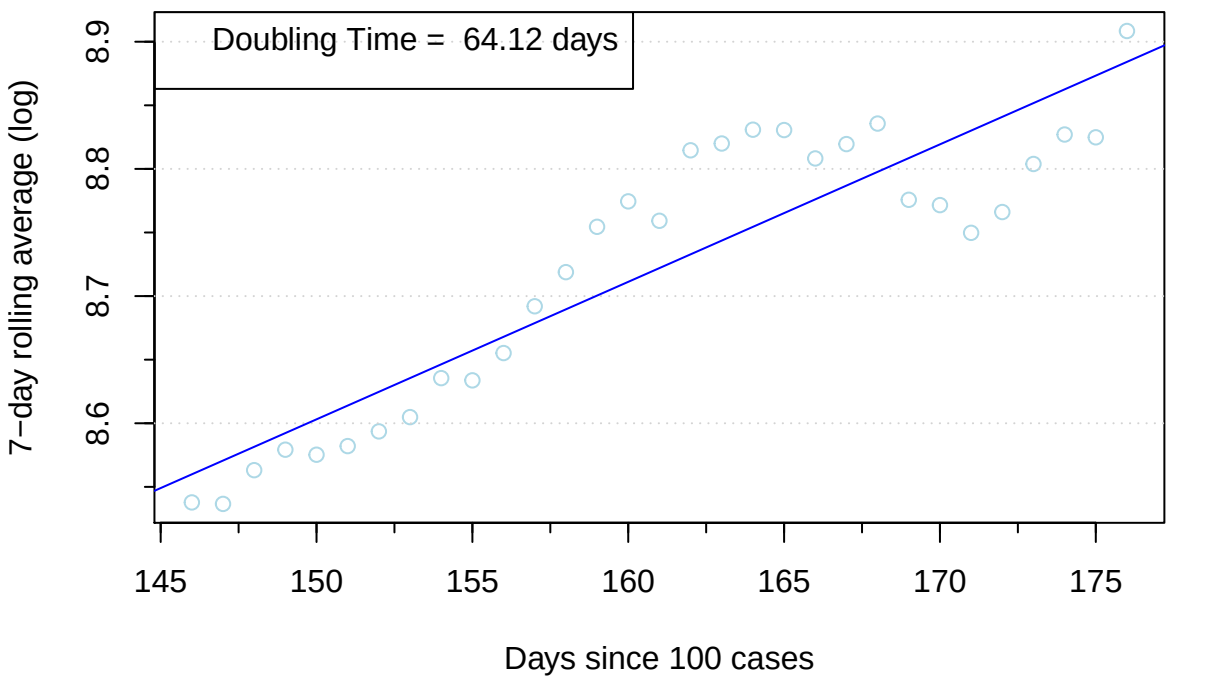

New cases (log scale), CABA − all dates
Doubling Time = 20.44 days
7−day rolling average (log)
2
3
4
5
6
7
50
100
150
Days since 100 cases

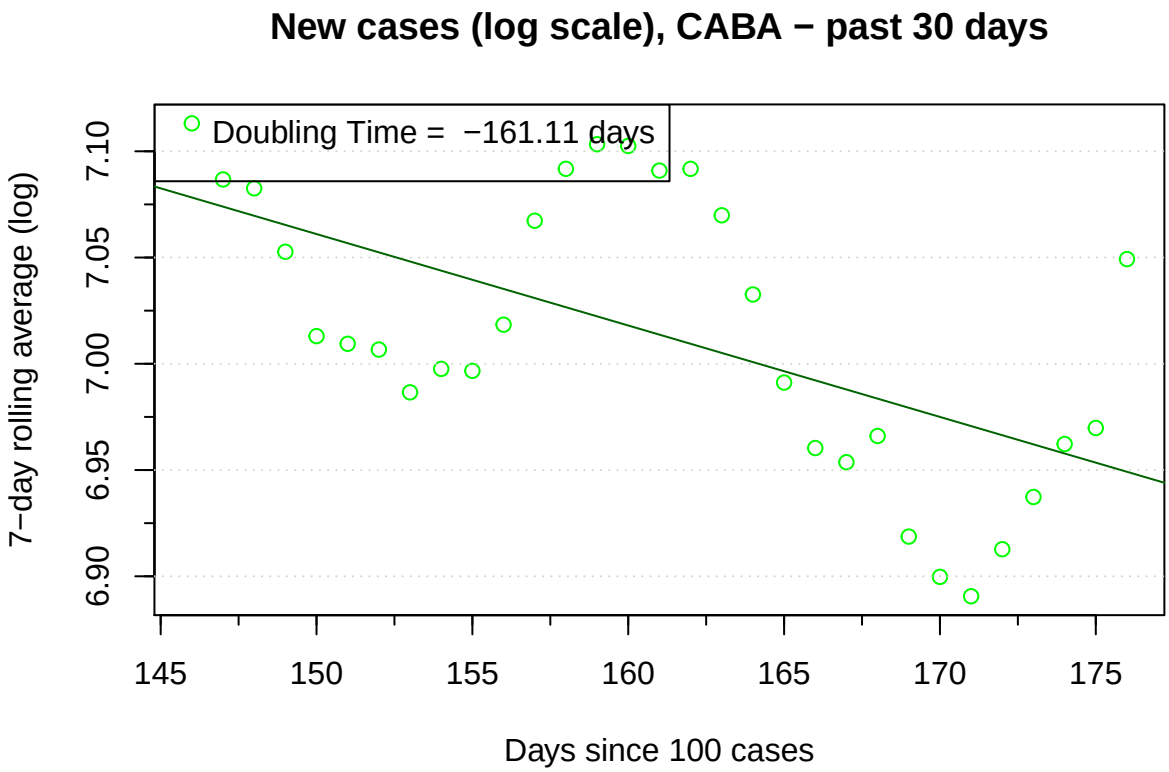

New cases (log scale), Province of Buenos Aires − all dates
Doubling Time = 15.72 days
7−day rolling average (log)
0
2
4
6
8
50
100
150
Days since 100 cases

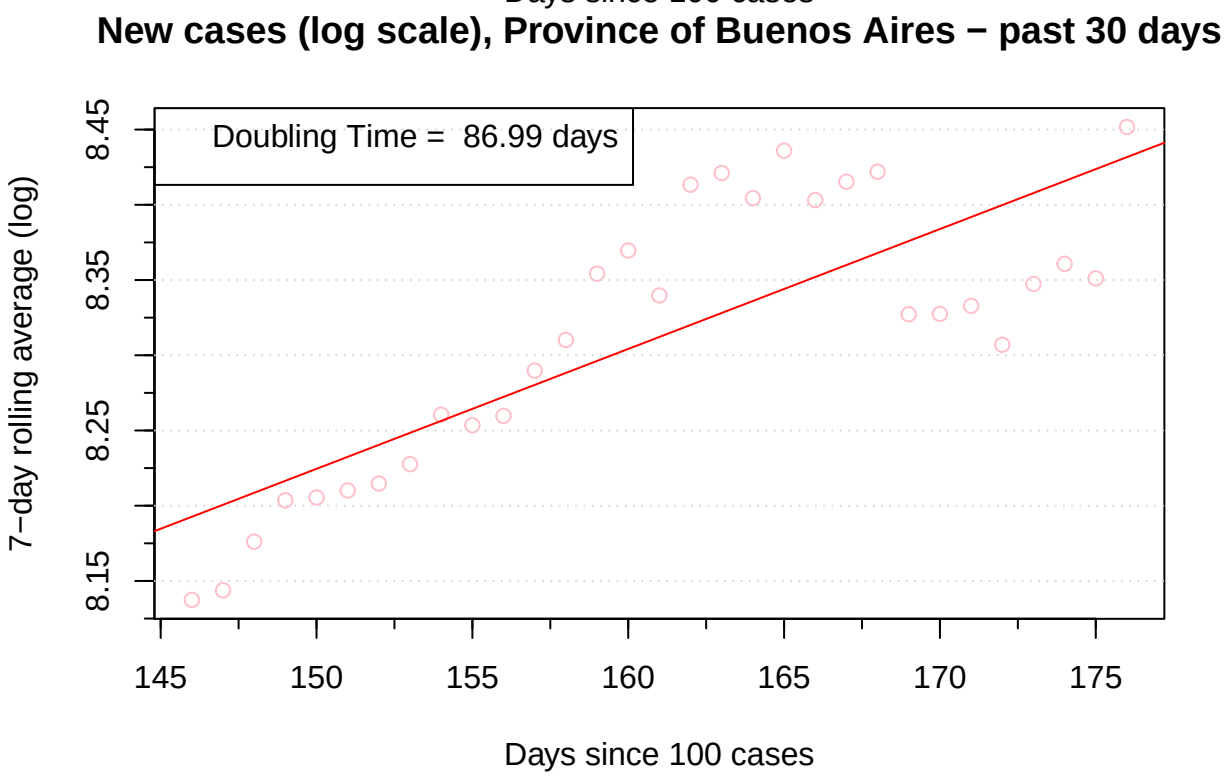

New cases (log scale), Argentina − past 14 days
Doubling Time = 844.02 days
7−day rolling average (log)
8.75
8.80
8.85
8.90
162
164
166
168
170
172
174
176
Days since 100 cases

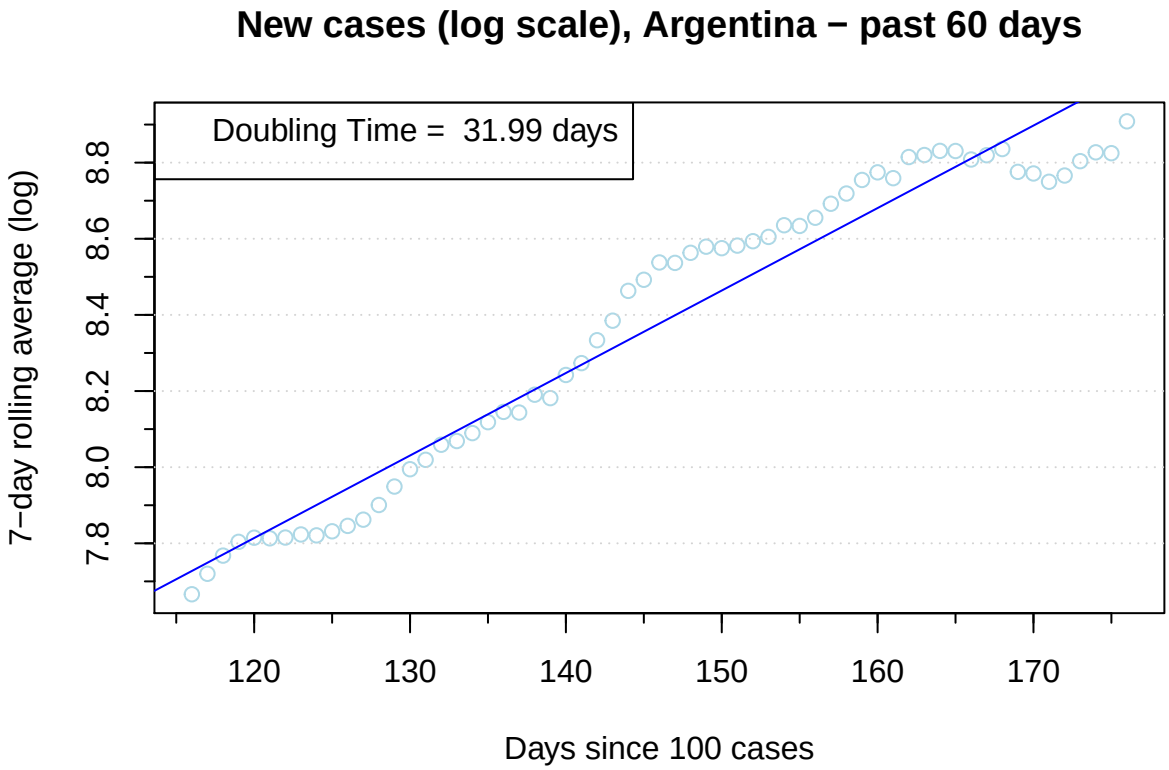

New cases (log scale), CABA − past 14 days
Doubling Time = −107.79 days
7−day rolling average (log)
6.90
6.95
7.00
7.05
162
164
166
168
170
172
174
176
Days since 100 cases

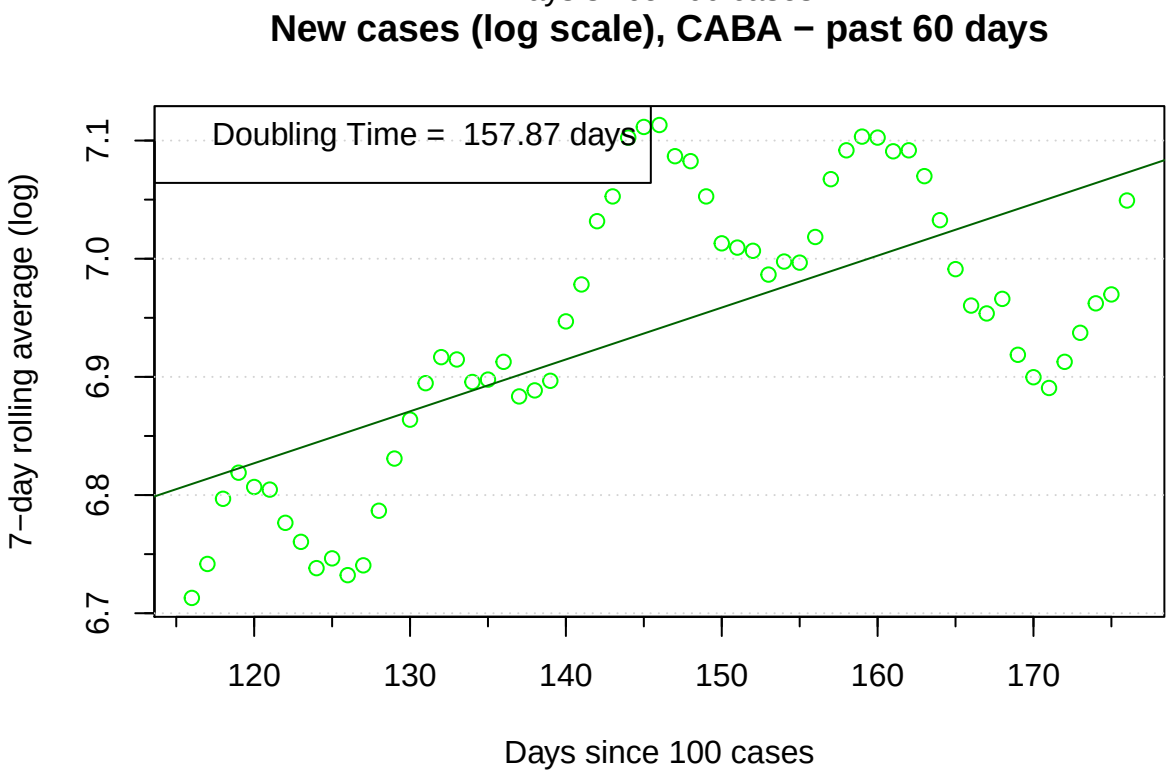

New cases (log scale), Province of Buenos Aires − past 14 days
Doubling Time = −152.46 days
7−day rolling average (log)
8.45
8.40
8.35
162
164
166
168
170
172
174
176
Days since 100 cases

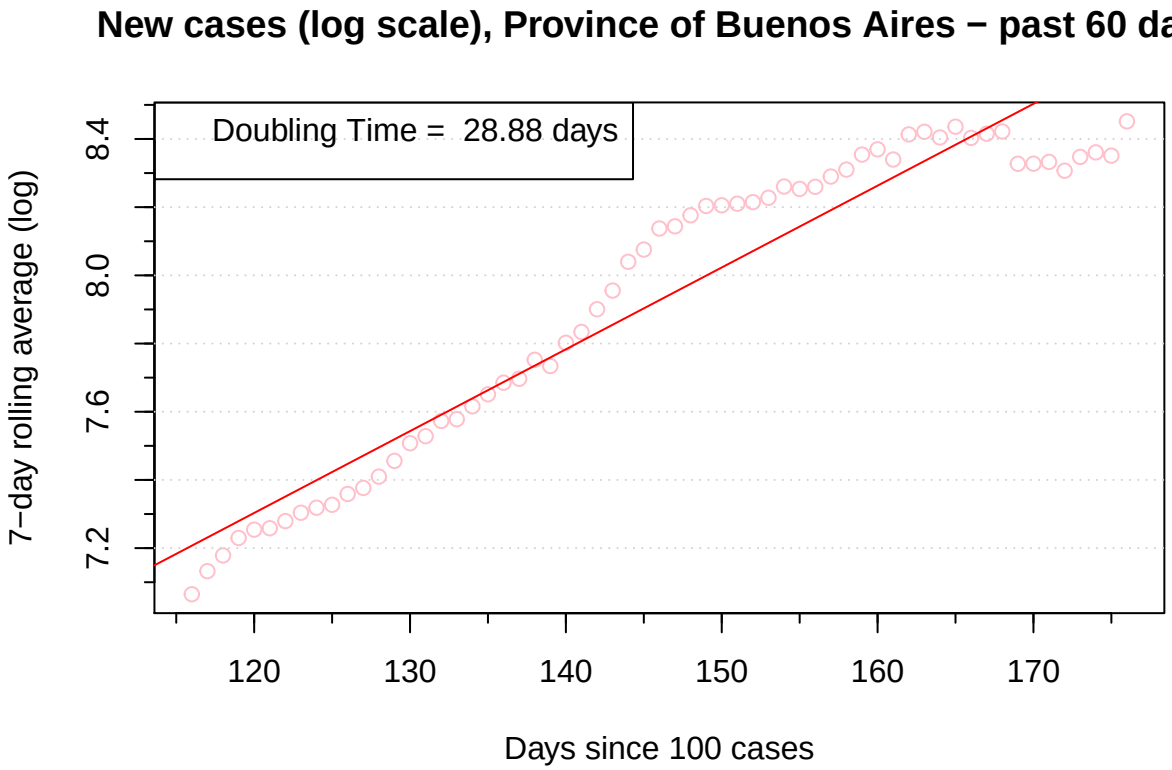

New cases (log scale), Argentina − past 30 days
Doubling Time = 64.12 days
7−day rolling average (log)
8.9
8.8
8.7
8.6
145
150
155
160
165
170
175
Days since 100 cases

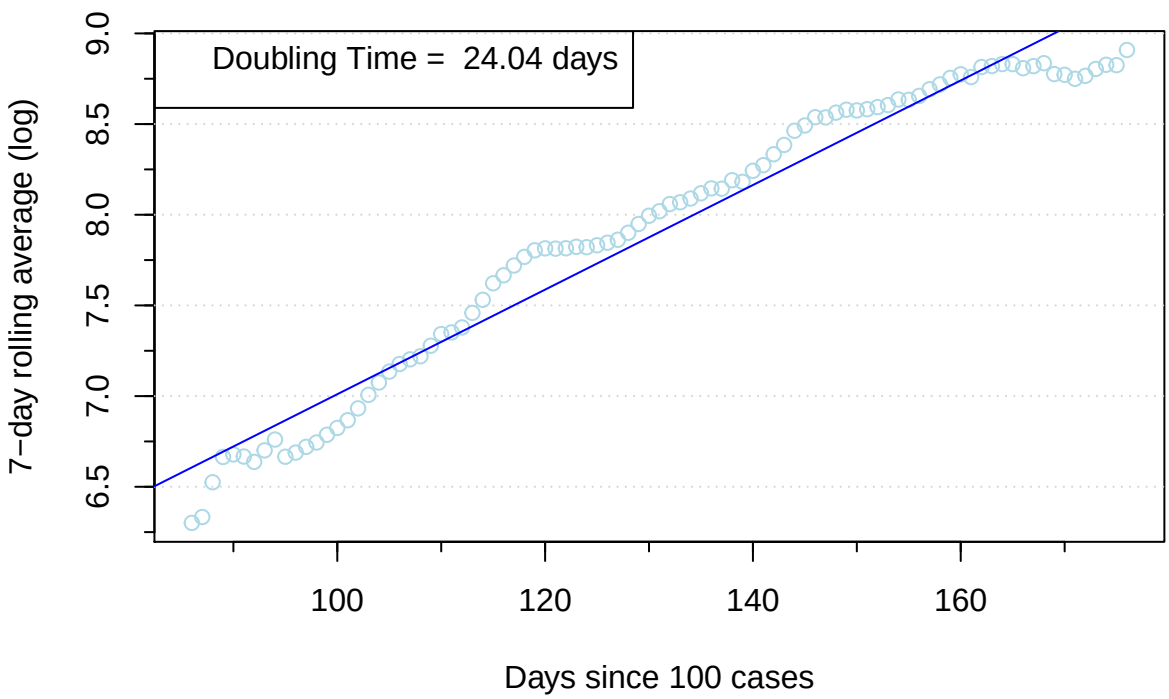

New cases (log scale), CABA − past 30 days
Doubling Time = −161.11 days
7−day rolling average (log)
6.90
6.95
7.00
7.05
7.10
145
150
155
160
165
170
175
Days since 100 cases

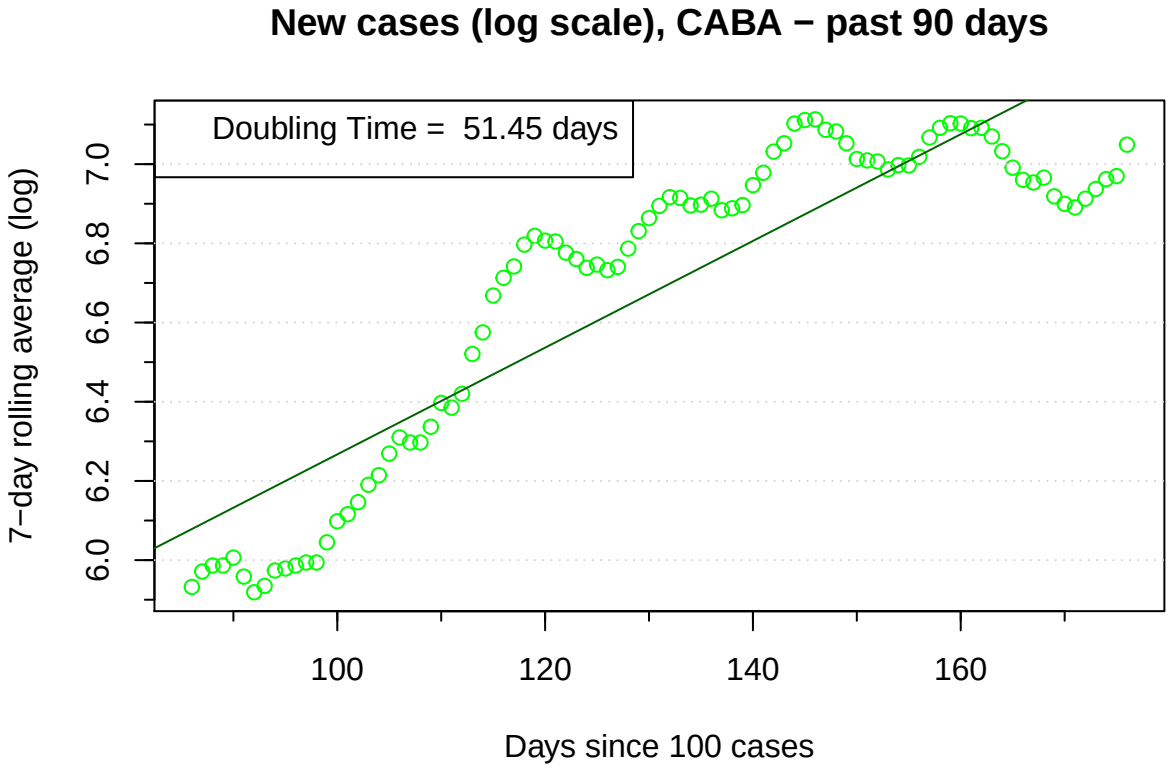

New cases (log scale), Province of Buenos Aires − past 30 days
Doubling Time = 86.99 days
7−day rolling average (log)
8.15
8.25
8.35
8.45
145
150
155
160
165
170
175
Days since 100 cases

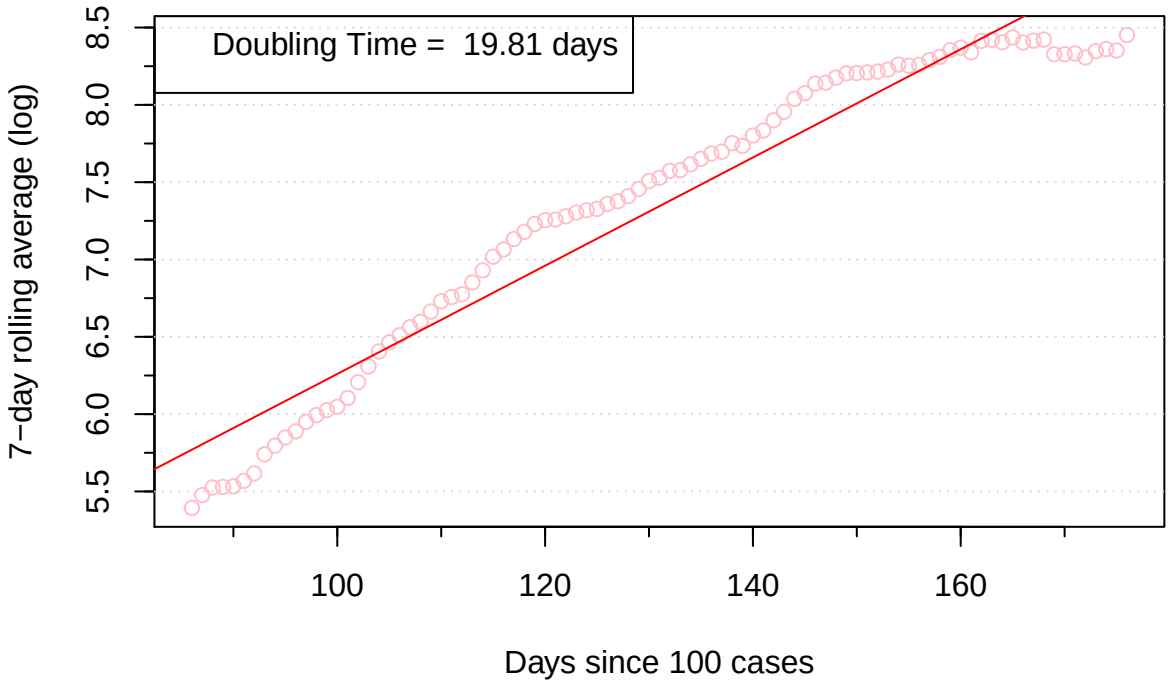

New cases (log scale), Argentina − past 60 days
Doubling Time = 31.99 days
7−day rolling average (log)
7.8
8.0
8.2
8.4
8.6
8.8
120
130
140
150
160
170
Days since 100 cases


New cases (log scale), CABA − past 60 days
Doubling Time = 157.87 days
7−day rolling average (log)
6.7
6.8
6.9
7.0
7.1
120
130
140
150
160
170
Days since 100 cases


New cases (log scale), Province of Buenos Aires − past 60 days
Doubling Time = 28.88 days
7−day rolling average (log)
7.2
7.6
8.0
8.4
120
130
140
150
160
170
Days since 100 cases


New cases (log scale), Argentina − past 90 days
Doubling Time = 24.04 days
7−day rolling average (log)
6.5
7.0
7.5
8.0
8.5
9.0
100
120
140
160
Days since 100 cases






```
##              Argentina    CABA Province of Buenos Aires
## all dates        18.74   20.44                    15.72
## past 14 days    844.02 -107.79                  -152.46
## past 30 days     64.12 -161.11                    86.99
## past 60 days     31.99  157.87                    28.88
```

```
## past 90 days     24.04   51.45                    19.81
```

R0 over time (daily cases estimate)

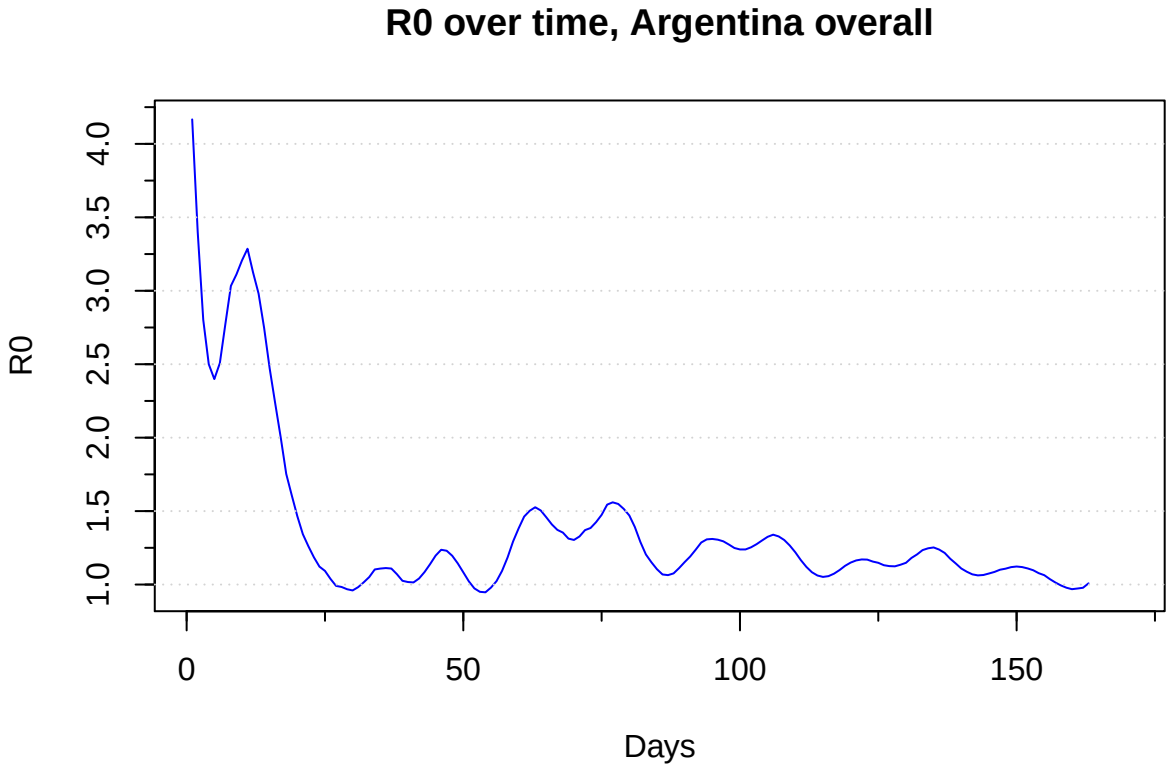
These graphs rely heavily on the Epitrix, EpiEstim, and incidence modules in R. These graphs are rough estimates based on the number of new cases reported each day and not/not the actual date of registry/onset of symptoms, which provide a more-accurate picture of the rate of transmission.

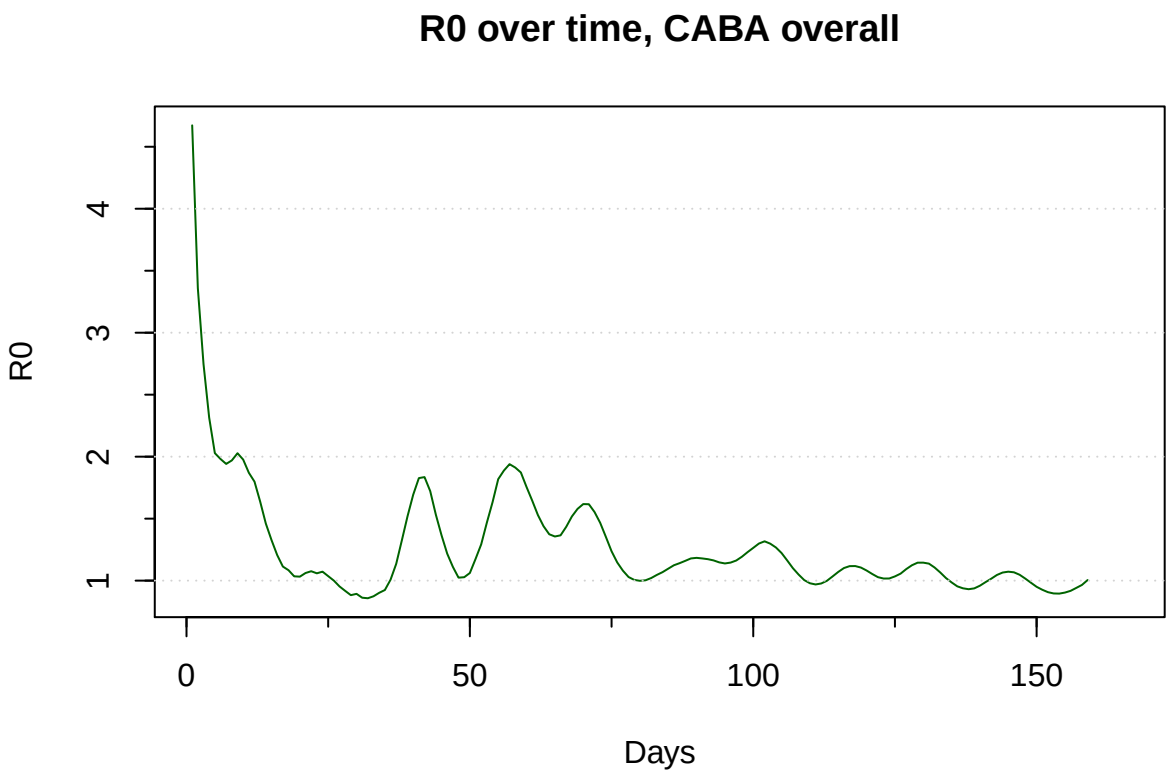
The following data on serial incidence are drawn from a meta analysis of COVID-19: https://doi.org/10.1002/jmv.26041

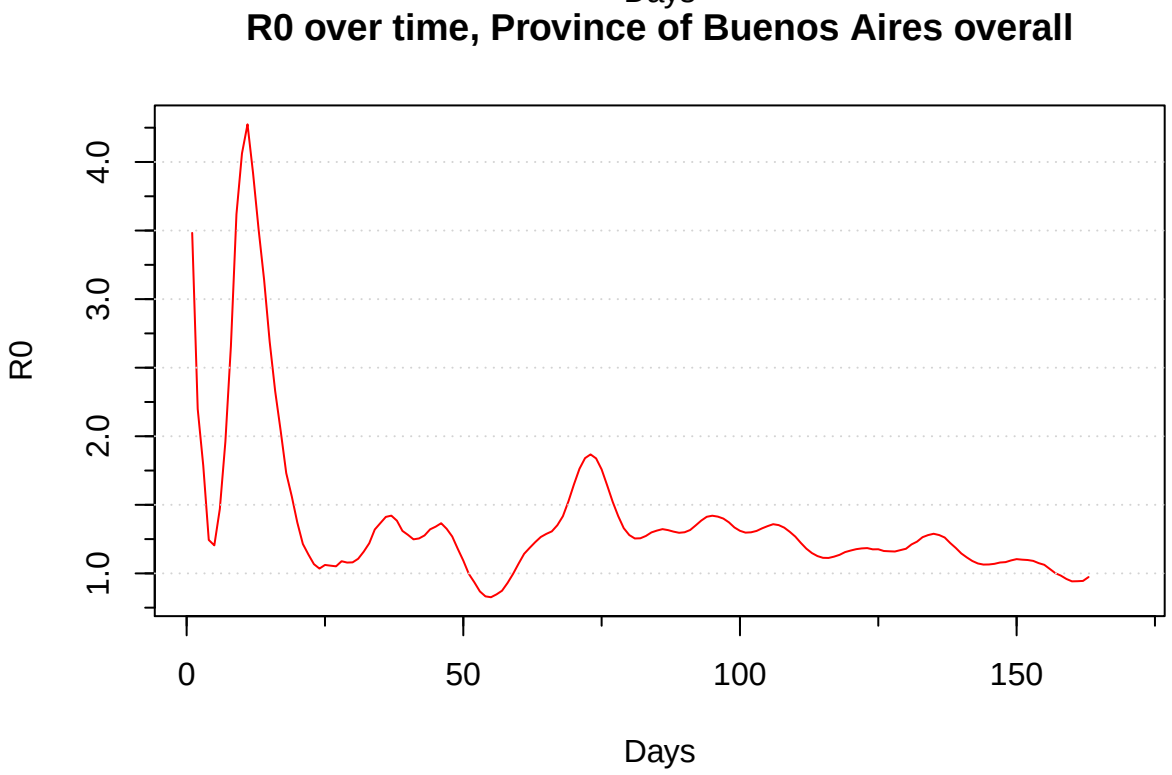
$$\mu = 5.08 \; days$$

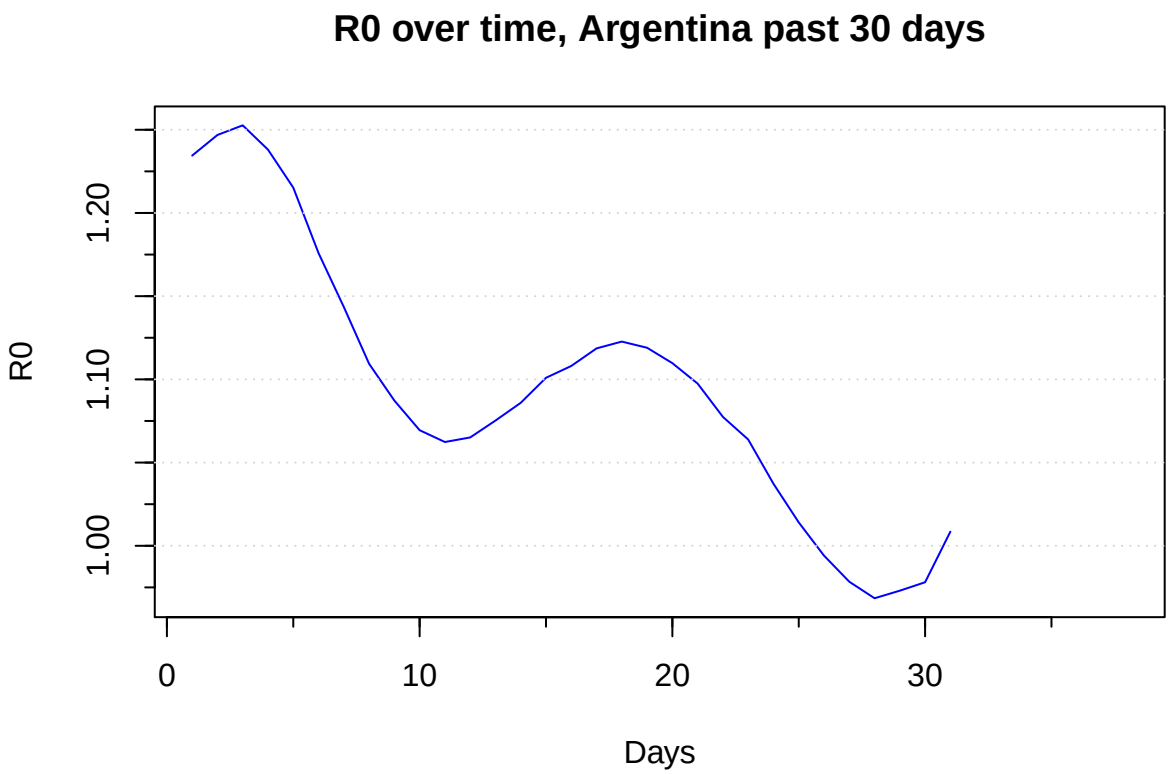
$$\sigma = .18$$

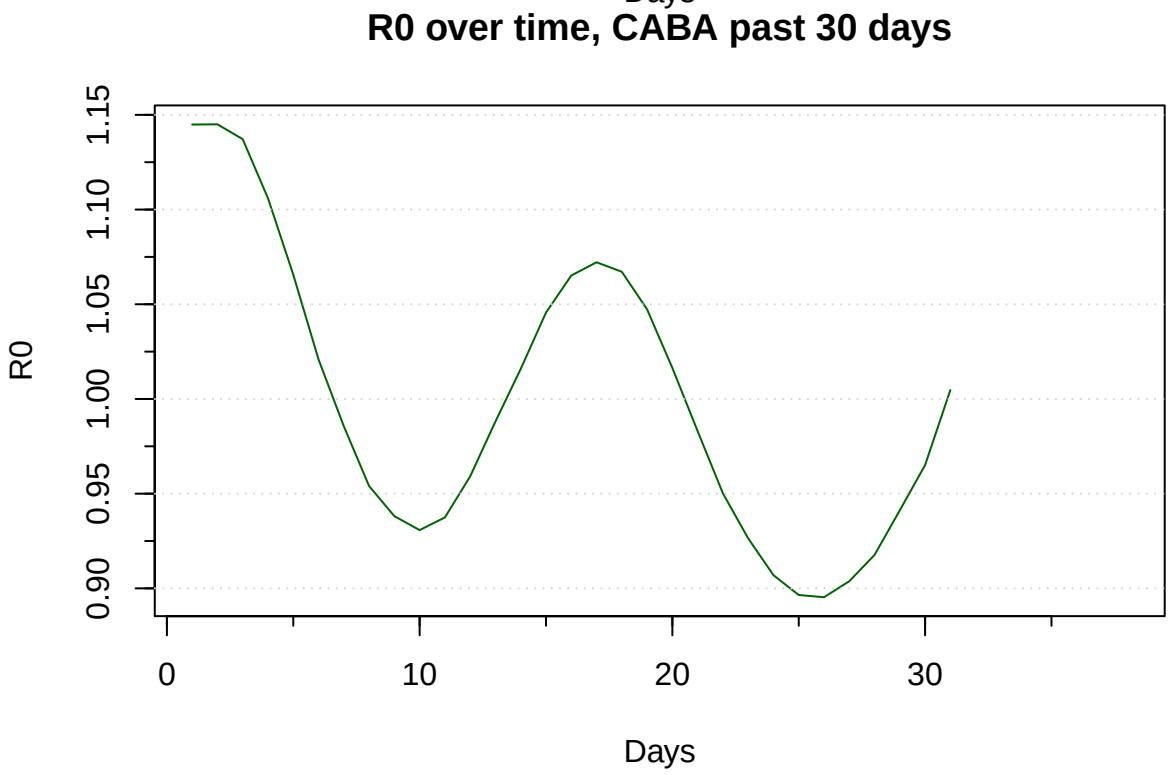
A gamma distribution is created programatically, and the estimate_R function is run against incidence objects containing the new cases reported each day.

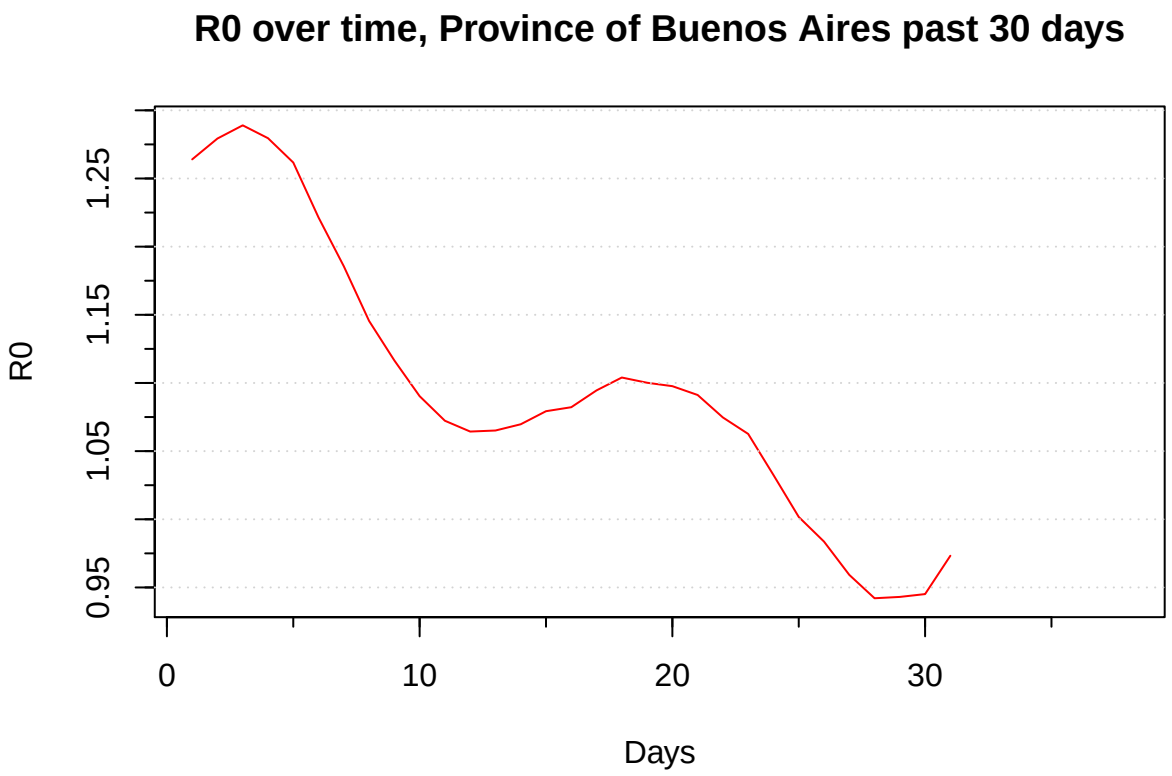



R0 over time, CABA overall
R0
1
2
3
4
0
50
100
150
Days

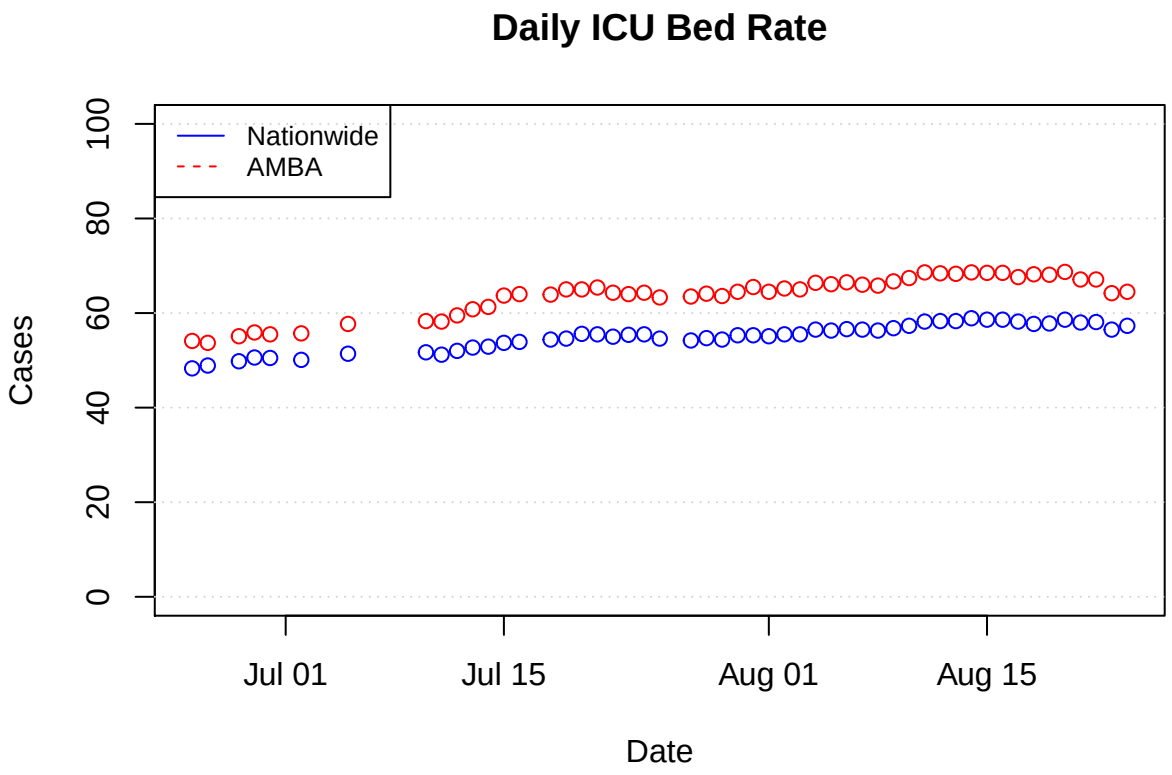

R0 over time, Province of Buenos Aires overall
R0
1.0
2.0
3.0
4.0
0
50
100
150
Days


R0 over time, Argentina past 30 days
R0
1.00
1.10
1.20
0
10
20
30
Days


R0 over time, CABA past 30 days
R0
0.90
0.95
1.00
1.05
1.10
1.15
0
10
20
30
Days


R0 over time, Province of Buenos Aires past 30 days
R0
0.95
1.05
1.15
1.25
0
10
20
30
Days

ICU Capacity



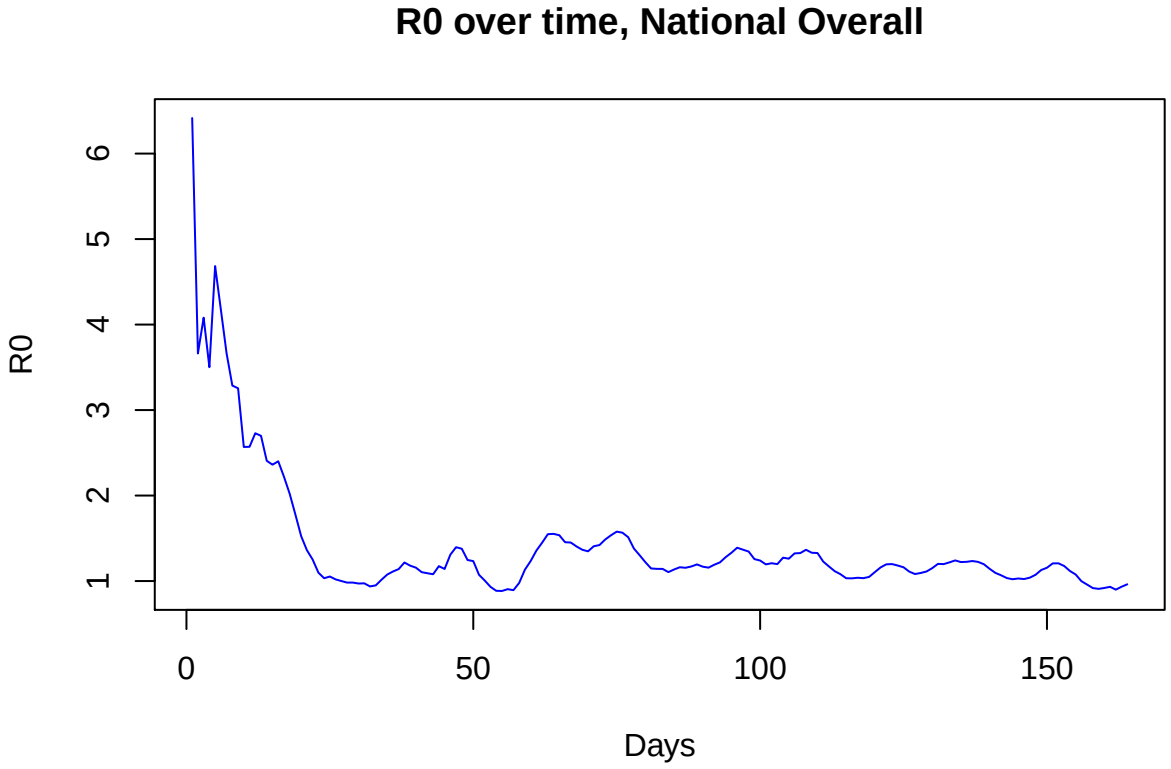

```
##          Date ICUBeds ICUPctNation ICUPctAMBA
## 32 2020-07-26      NA         <NA>       <NA>
## 33 2020-07-27    1002         54.2       63.5
## 34 2020-07-28    1024         54.7       64.1
## 35 2020-07-29    1057         54.4       63.6
## 36 2020-07-30    1076         55.3       64.5
## 37 2020-07-31    1104         55.3       65.5
## 38 2020-08-01    1128         55.1       64.5
## 39 2020-08-02    1122         55.5       65.2
## 40 2020-08-03    1150         55.5         65
## 41 2020-08-04    1207         56.5       66.4
## 42 2020-08-05    1219         56.3       66.1
## 43 2020-08-06    1245         56.6       66.5
## 44 2020-08-07    1293         56.5         66
## 45 2020-08-08    1502         56.3       65.8
## 46 2020-08-09    1565         56.8       66.7
## 47 2020-08-10    1569         57.3       67.4
## 48 2020-08-11    1585         58.2       68.6
## 49 2020-08-12    1662         58.3       68.4
## 50 2020-08-13    1682         58.3       68.3
## 51 2020-08-14    1718         58.9       68.6
## 52 2020-08-15    1716         58.6       68.5
## 53 2020-08-16    1708         58.6       68.5
## 54 2020-08-17    1749         58.2       67.6
## 55 2020-08-18    1799         57.7       68.2
## 56 2020-08-19    1795         57.8       68.1
## 57 2020-08-20    1832         58.6       68.7
## 58 2020-08-21    1853           58       67.1
```

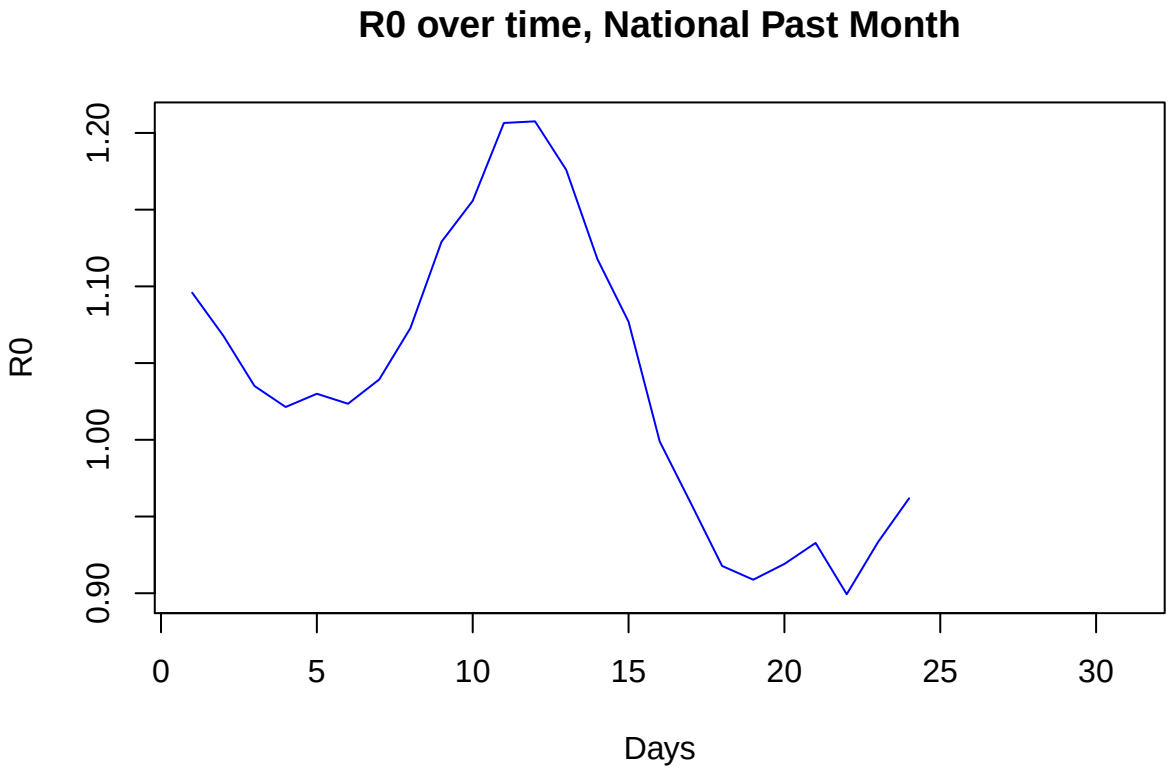
```
## 59 2020-08-22    1907         58.1       67.1
## 60 2020-08-23    1922         56.5       64.2
## 61 2020-08-24    1960         57.3       64.5
```

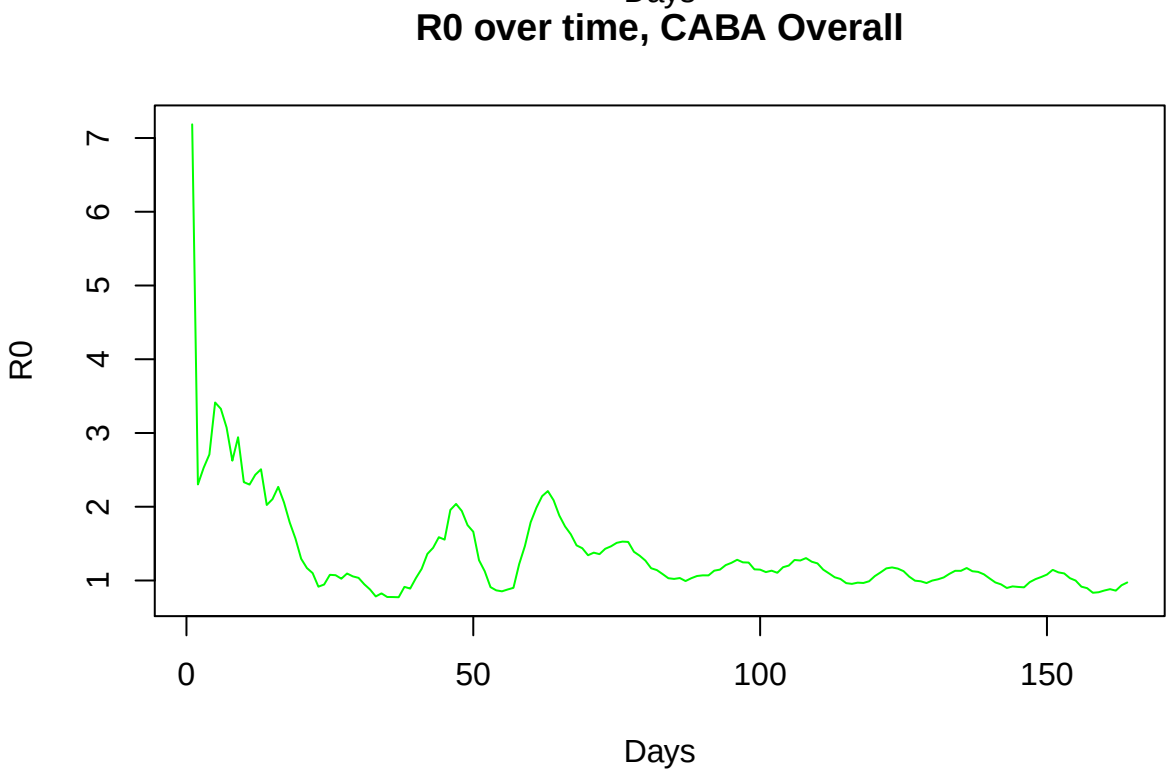
Better R Estimate

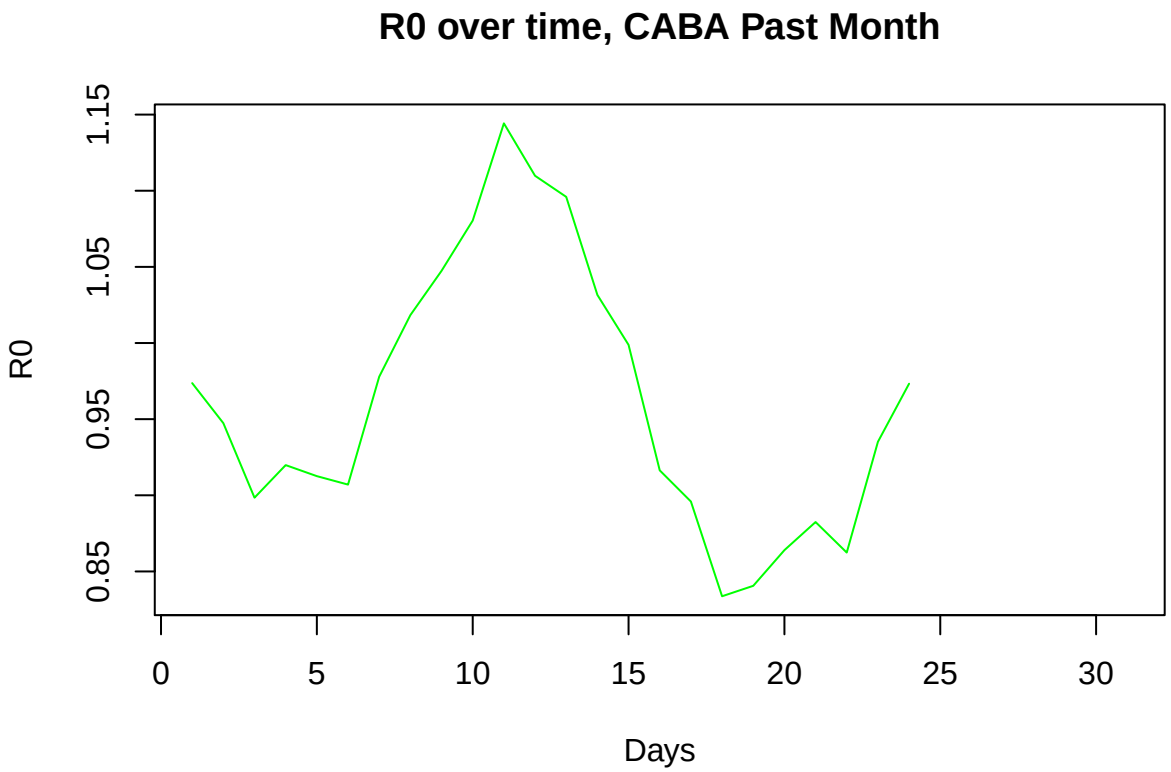
This data is drawn from over 1 million epidemiological records, indexed by the date the case was registered with the Ministry of Health. Cases are often registered prior to a confirmed diagnosis; therefore, this data "lags".

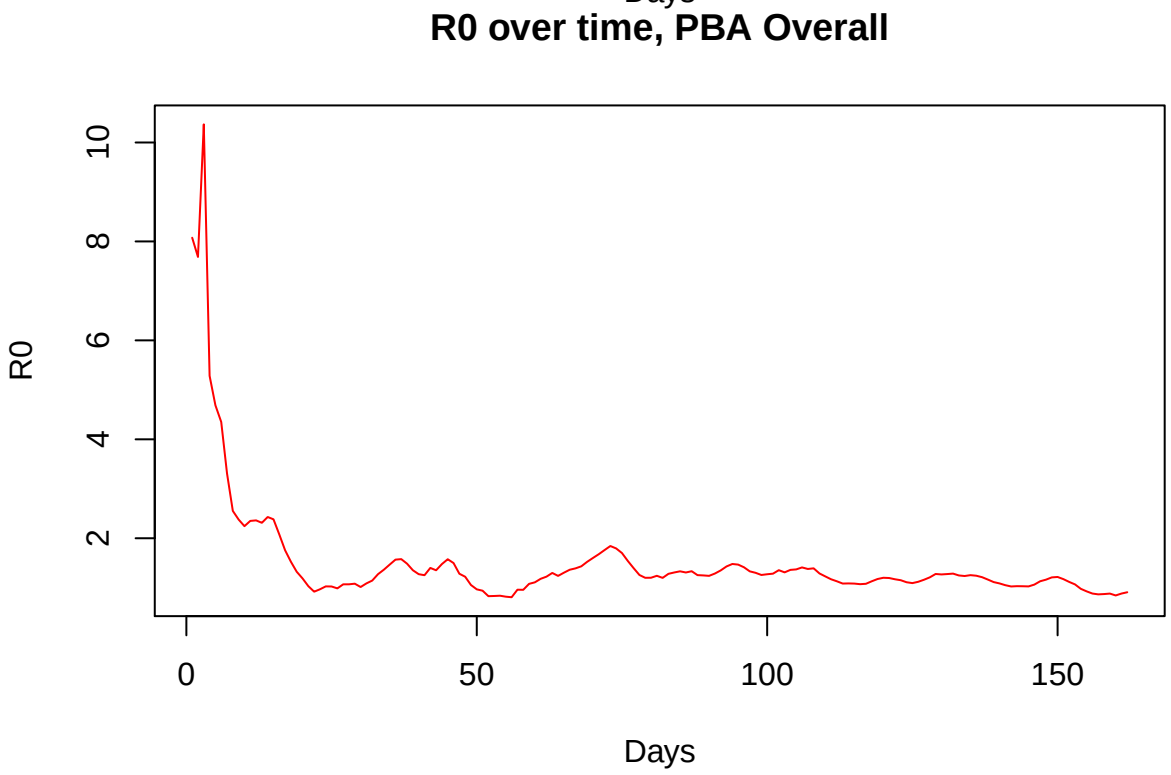
An incidence object is created using all confirmed cases in Argentina. The estimate_R() function from the EpiEstim package is used with the serial interval as described in the R estimate section above. While the estimate_R() function uses a rolling 7-day window, we also force the estimate away from the last five days of data due to the confirmation lag.

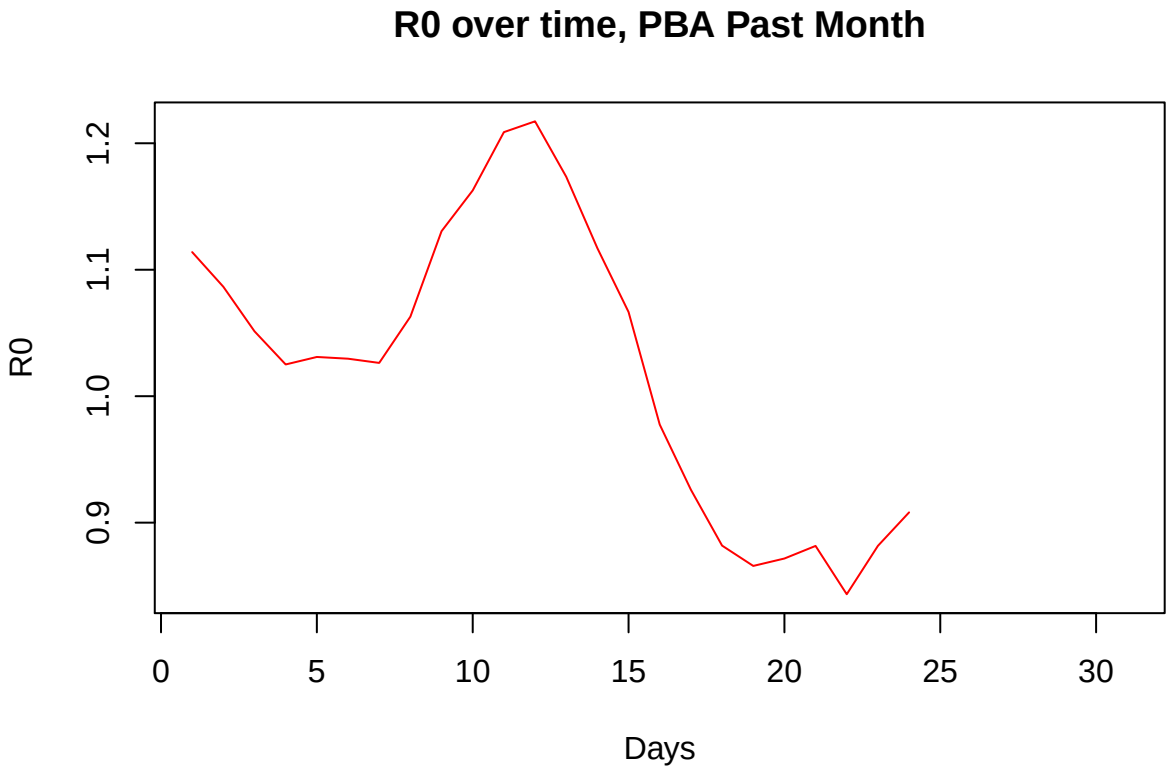


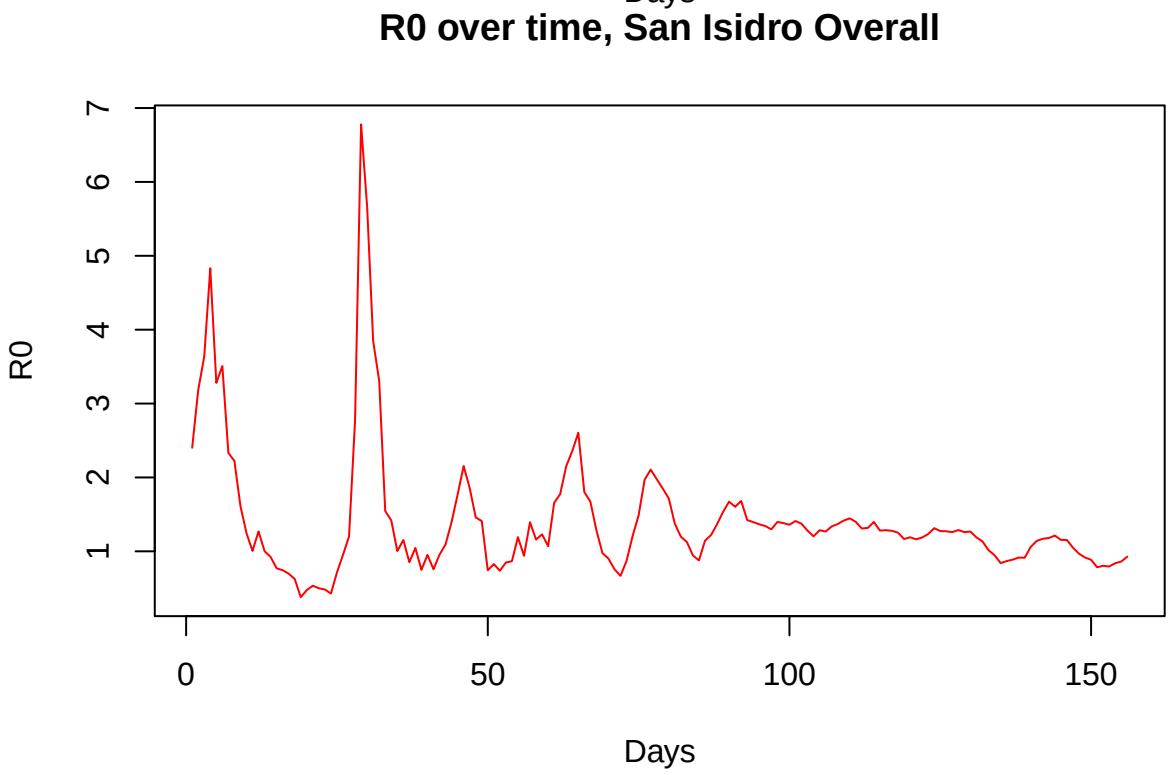

R0 over time, National Past Month
R0
0.90
1.00
1.10
1.20
0
5
10
15
20
25
30
Days

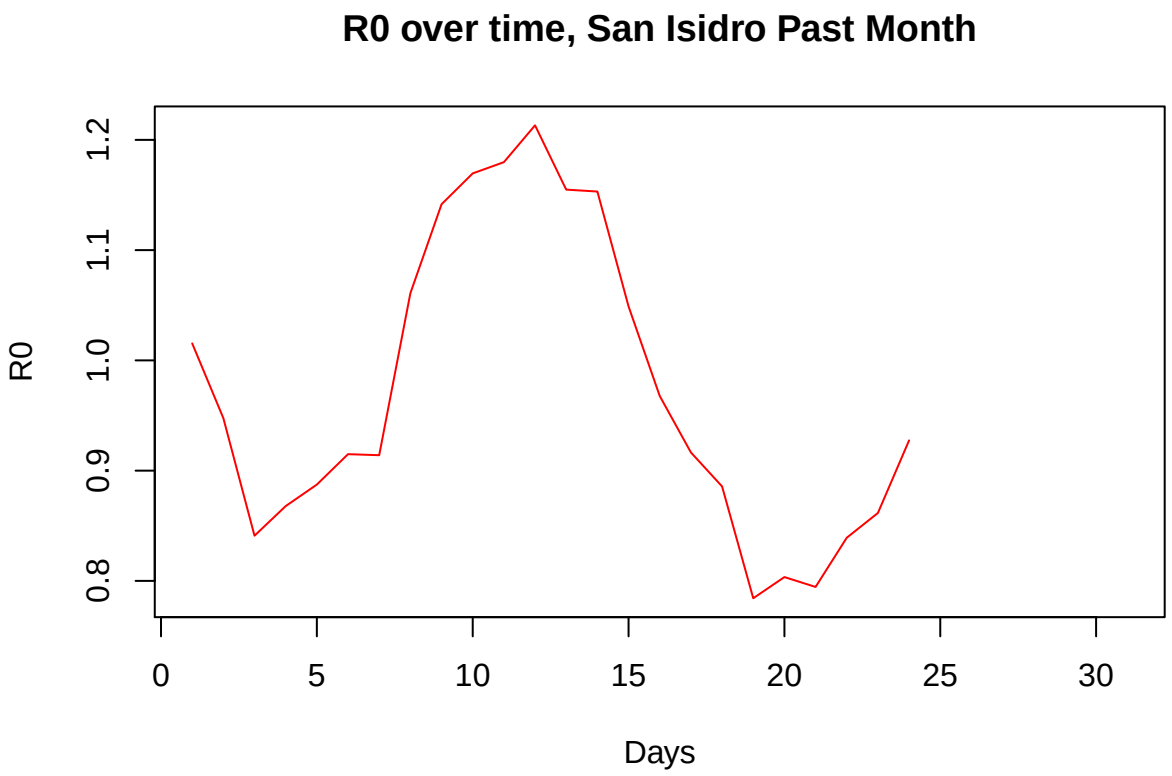

R0 over time, CABA Overall
R0
1
2
3
4
5
6
7
0
50
100
150
Days


R0 over time, CABA Past Month
R0
0.85
0.95
1.05
1.15
0
5
10
15
20
25
30
Days


R0 over time, PBA Overall
R0
2
4
6
8
10
0
50
100
150
Days


R0 over time, PBA Past Month
R0
0.9
1.0
1.1
1.2
0
5
10
15
20
25
30
Days


R0 over time, San Isidro Overall
R0
1
2
3
4
5
6
7
0
50
100
150
Days


R0 over time, San Isidro Past Month
R0
0.8
0.9
1.0
1.1
1.2
0
5
10
15
20
25
30
Days