

Argentina Covid Report

Chris Andino

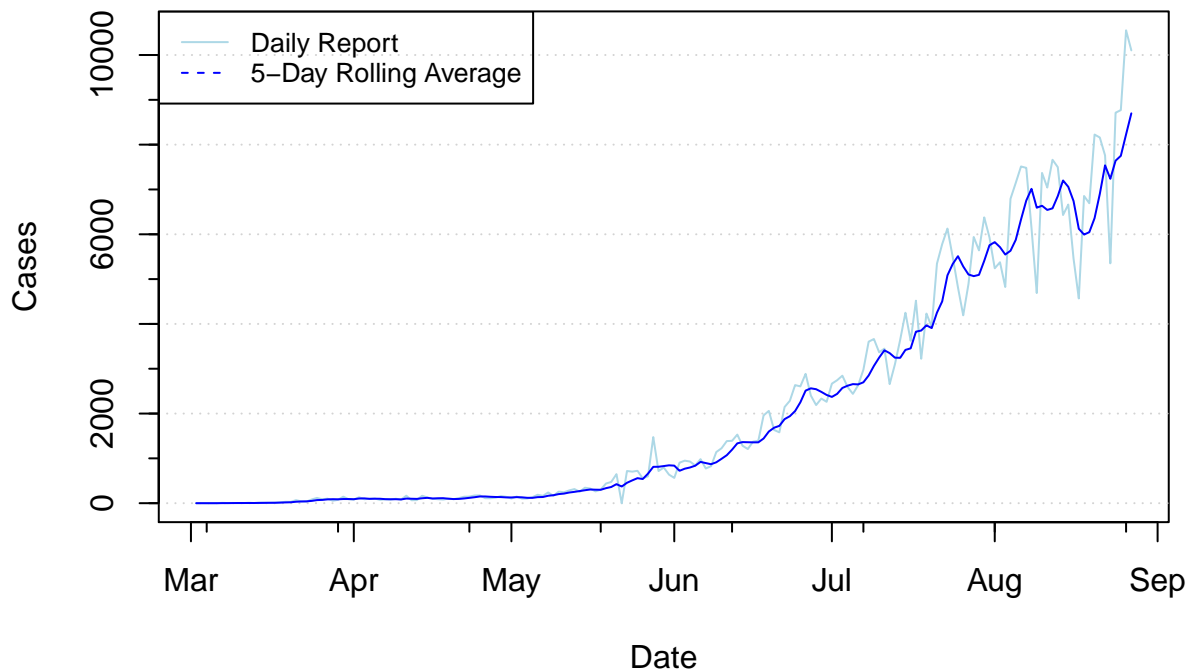
8/28/2020

Data as of 8pm 24-AUG-2020

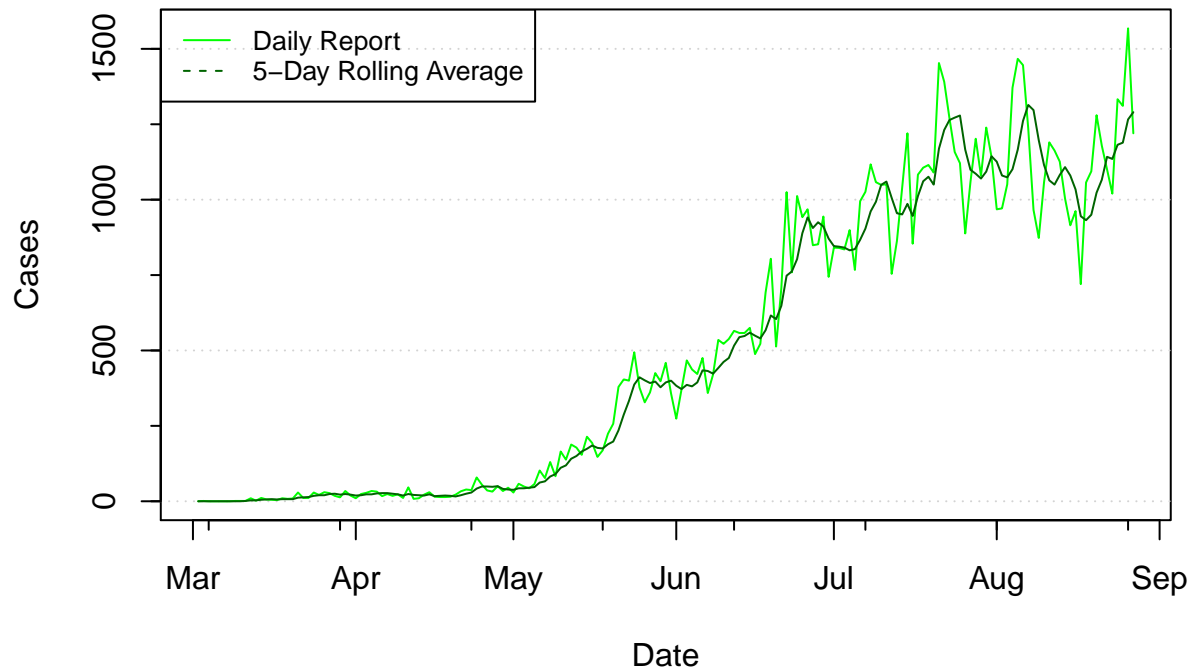
New Cases

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:

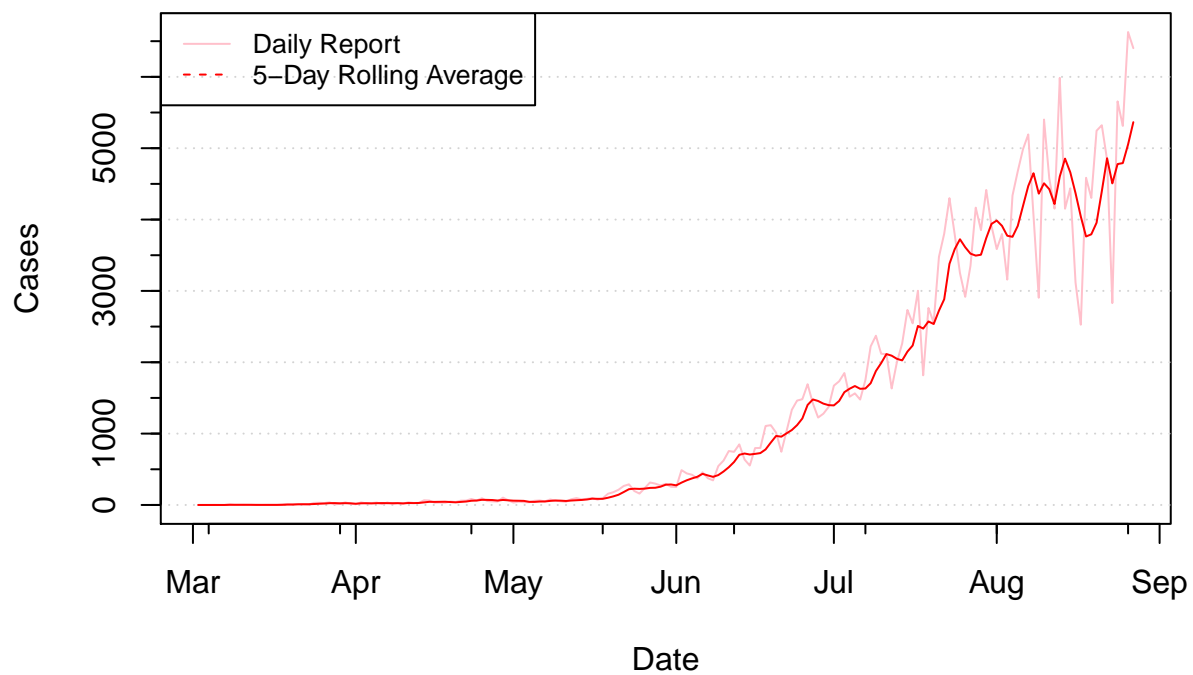
Daily new cases, Argentina



Daily new cases, CABA



Daily new cases, Province of Buenos Aires

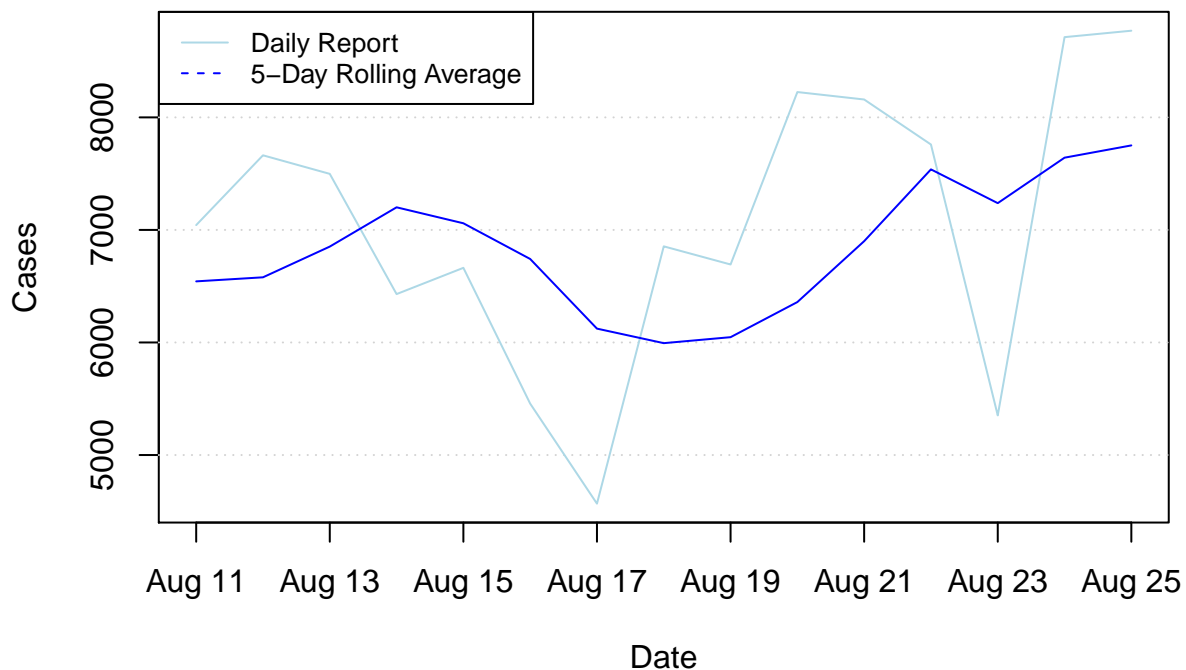


Date	TotalCasesN	NewCasesN	AvgCasesNa	TotalCasesC	NewCasesC	AvgCasesCA	TotalCasesP	NewCasesPI
2020-08-09	246417	4688	6593	70056	873	1197	151264	2904
2020-08-10	253786	7369	6637	71113	1057	1115	156666	5402
2020-08-11	260829	7043	6543	72303	1190	1064	161242	4576
2020-08-12	268492	7663	6579	73466	1163	1050	165395	4153
2020-08-13	275990	7498	6852	74592	1126	1082	171381	5986
2020-08-14	282420	6430	7201	75596	1004	1108	175533	4152
2020-08-15	289083	6663	7059	76511	915	1080	179971	4438
2020-08-16	294540	5457	6742	77473	962	1034	183086	3115
2020-08-17	299108	4568	6123	78193	720	945	185612	2526
2020-08-18	305962	6854	5994	79250	1057	932	190197	4585

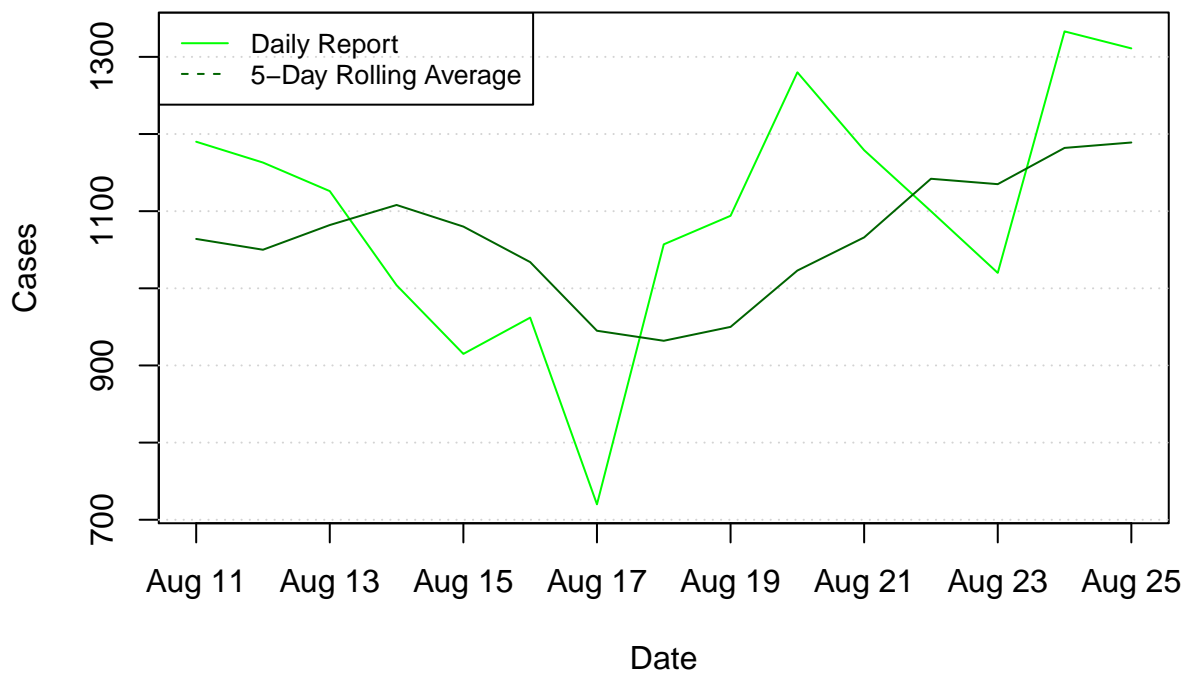
14-day trend

Zooming in on the 14-day trend lines:

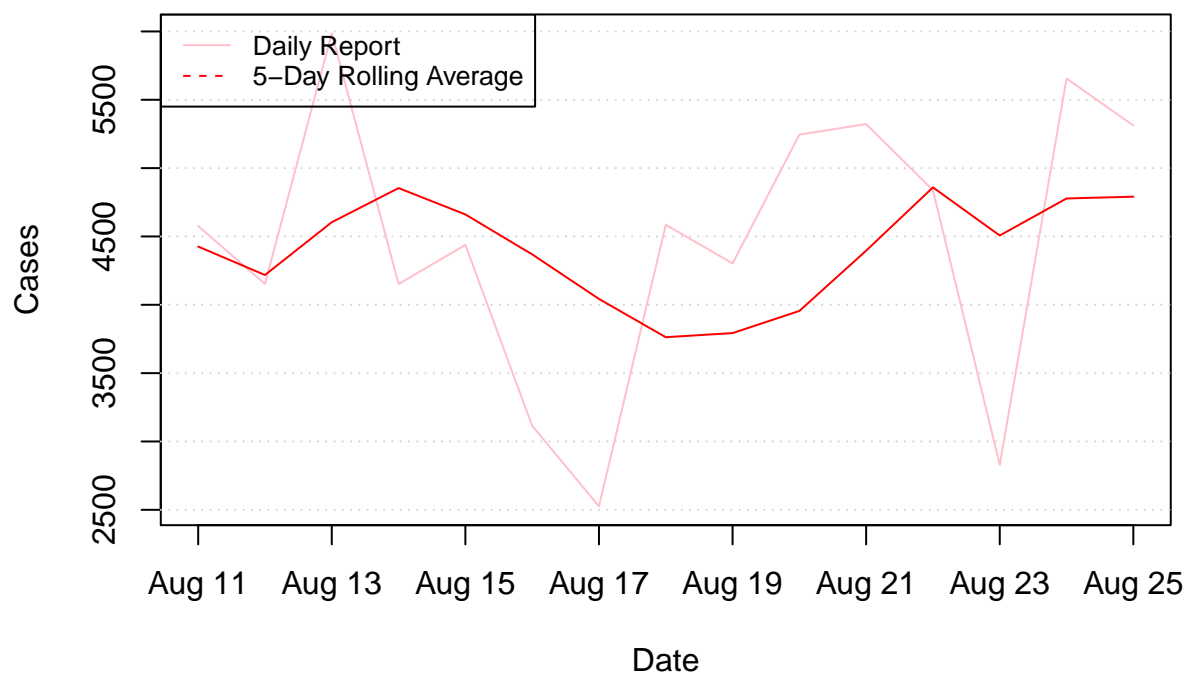
Daily new cases, Argentina



Daily new cases, CABA



Daily new cases, Province of Buenos Aires



Log graphs

The following graphs are generated by:

$$x = \text{Number of Days since March 3}$$

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

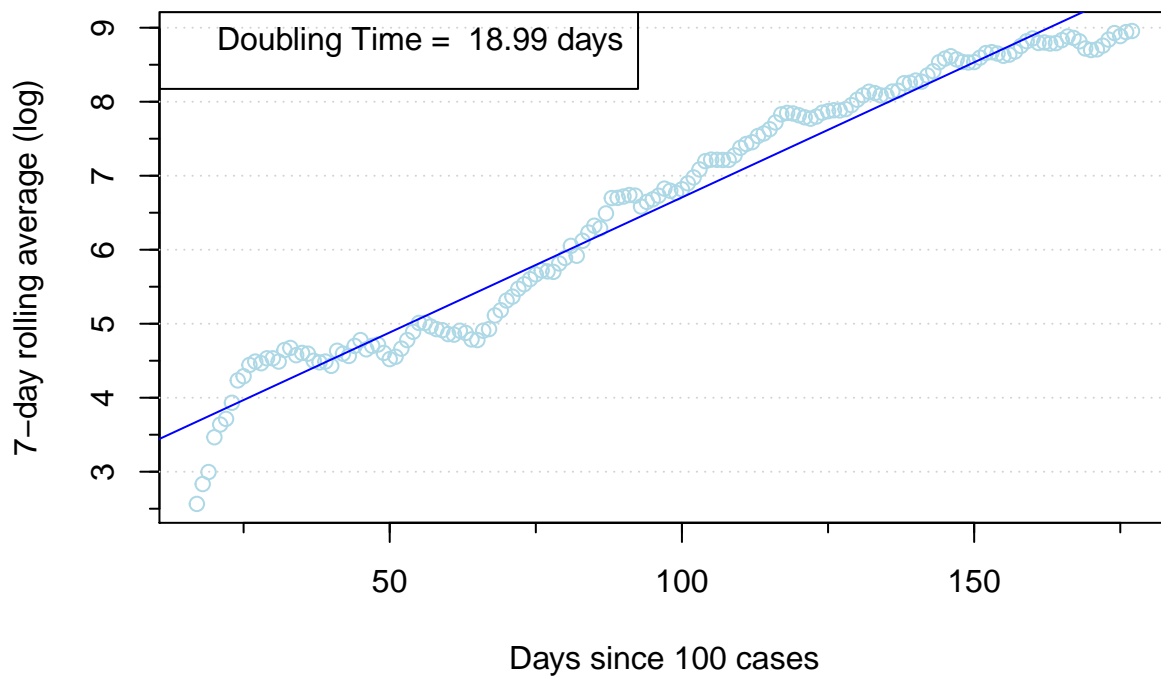
The regression line is drawn using the R “lm()” function over the x values.

R0 is estimated from the slope of the regression line:

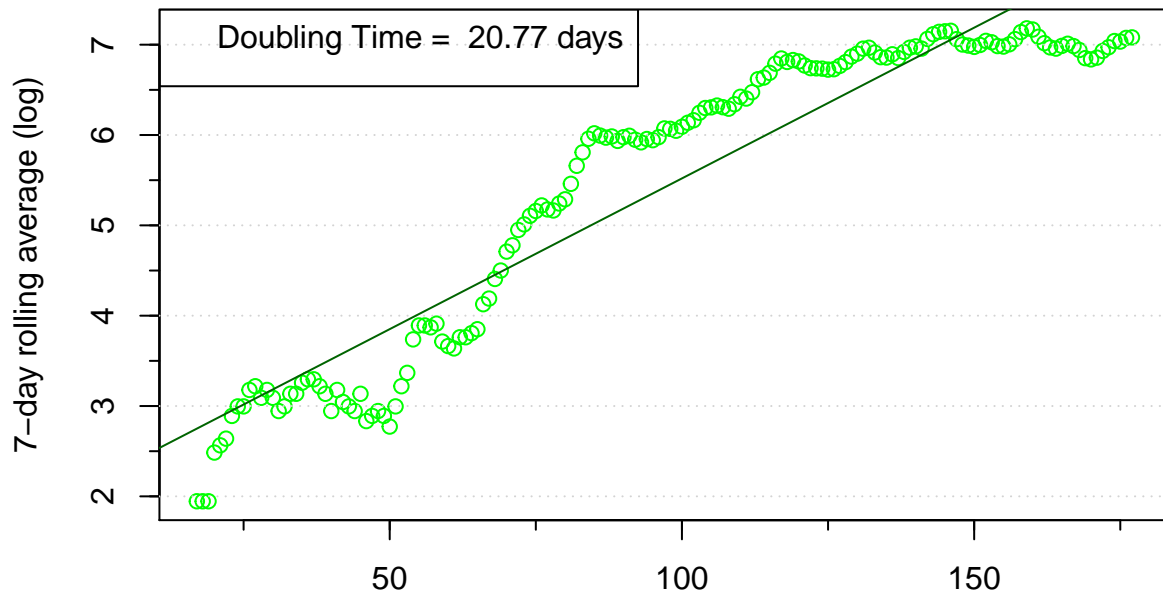
$$y = a + bx$$

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

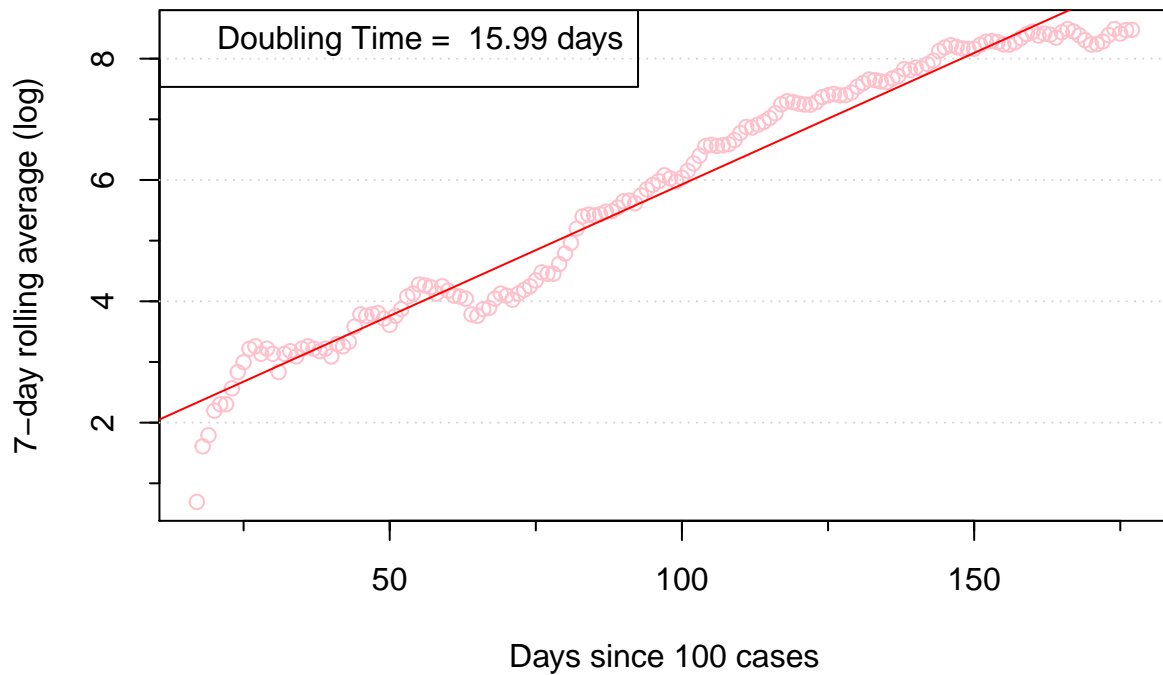
New cases (log scale), Argentina – all dates



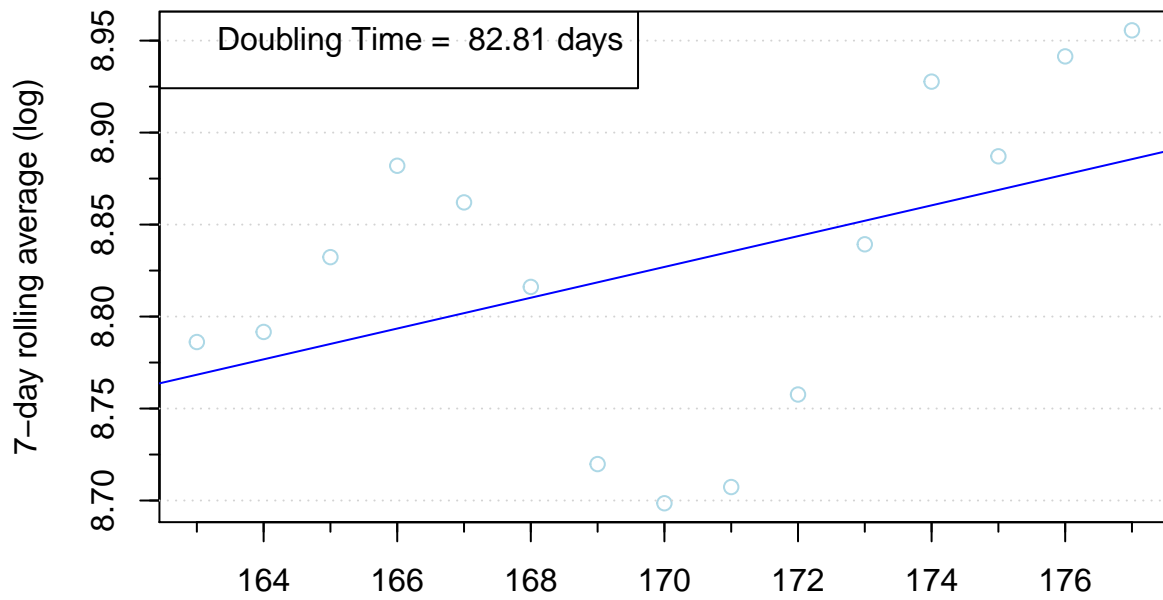
New cases (log scale), CABA – all dates



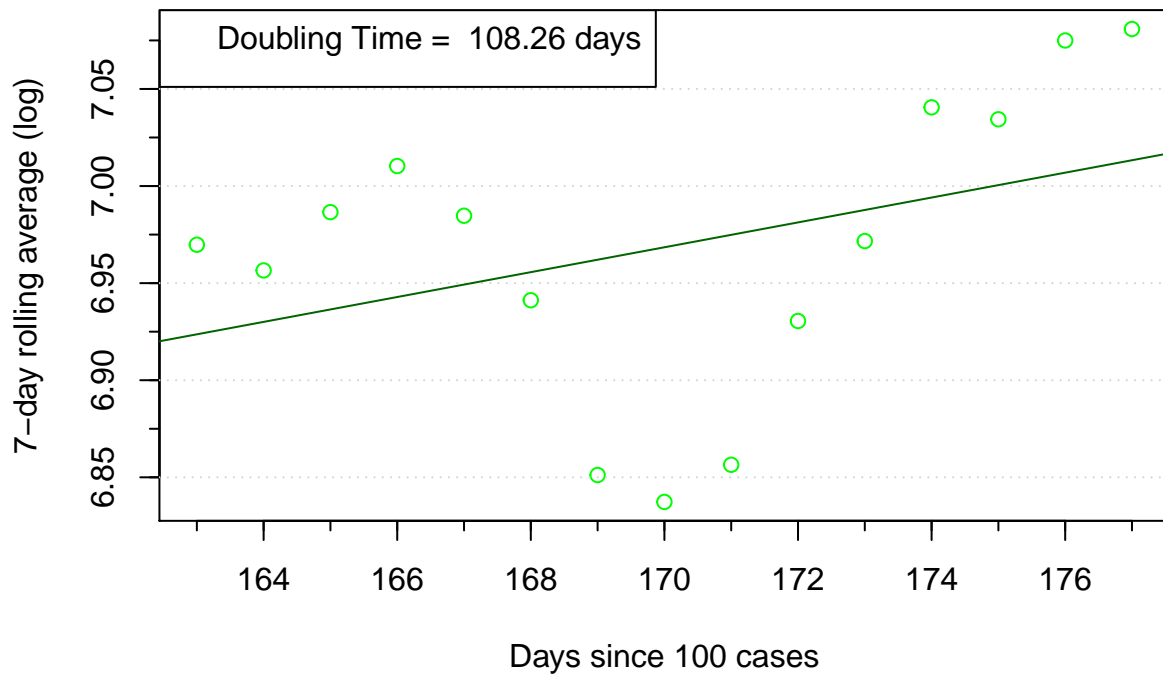
New cases (log scale), Province of Buenos Aires – all dates



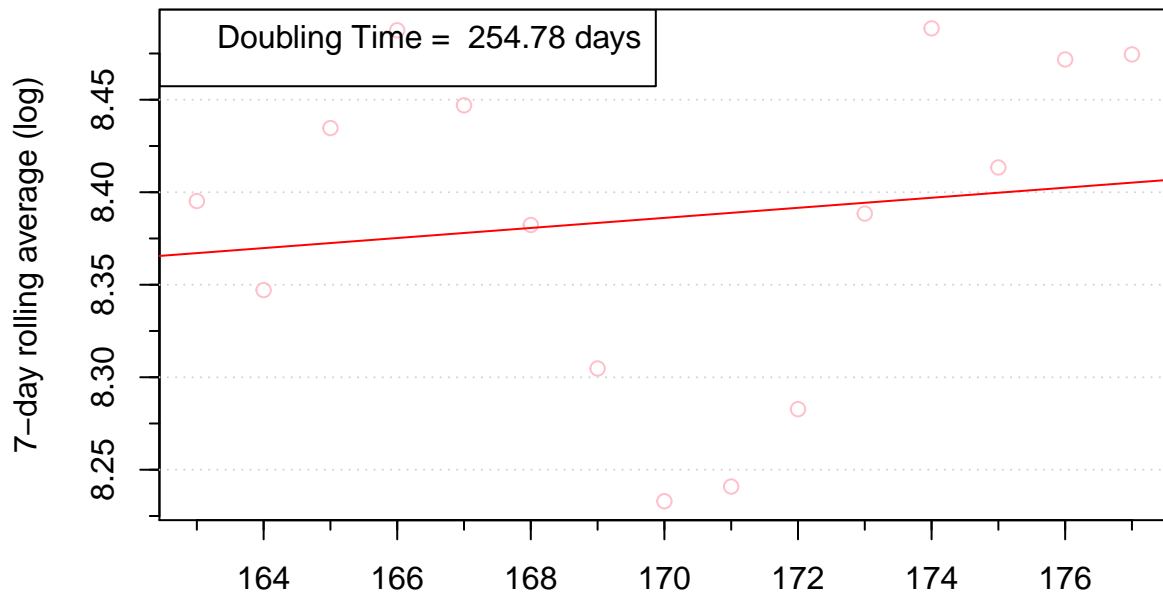
New cases (log scale), Argentina – past 14 days



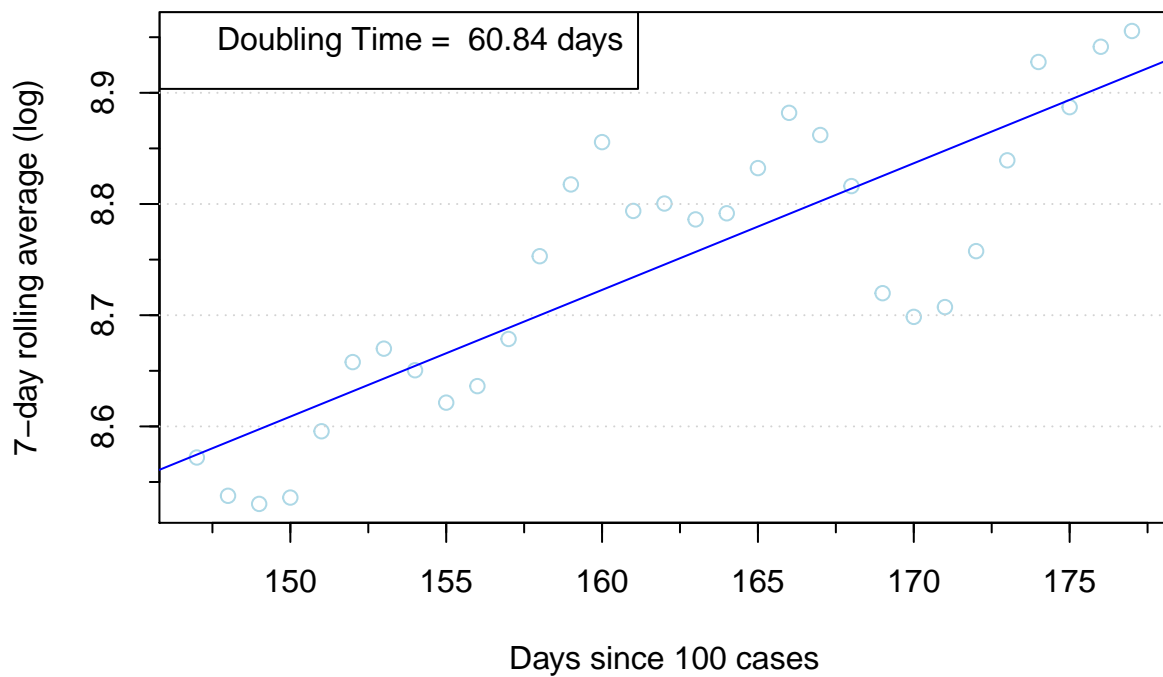
New cases (log scale), CABA – past 14 days



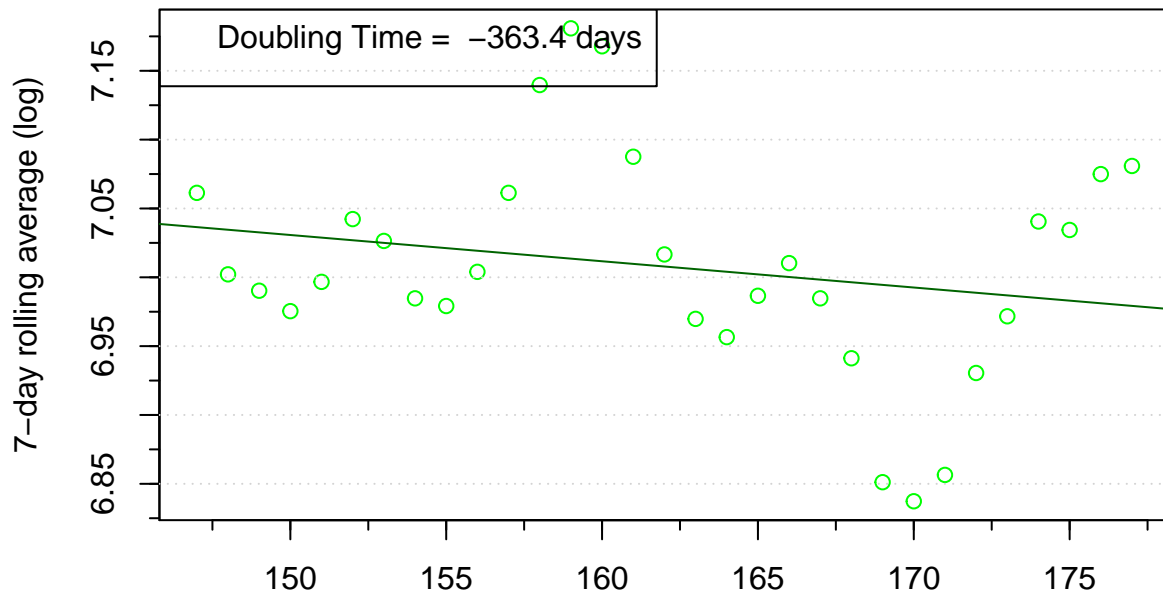
New cases (log scale), Province of Buenos Aires – past 14 days



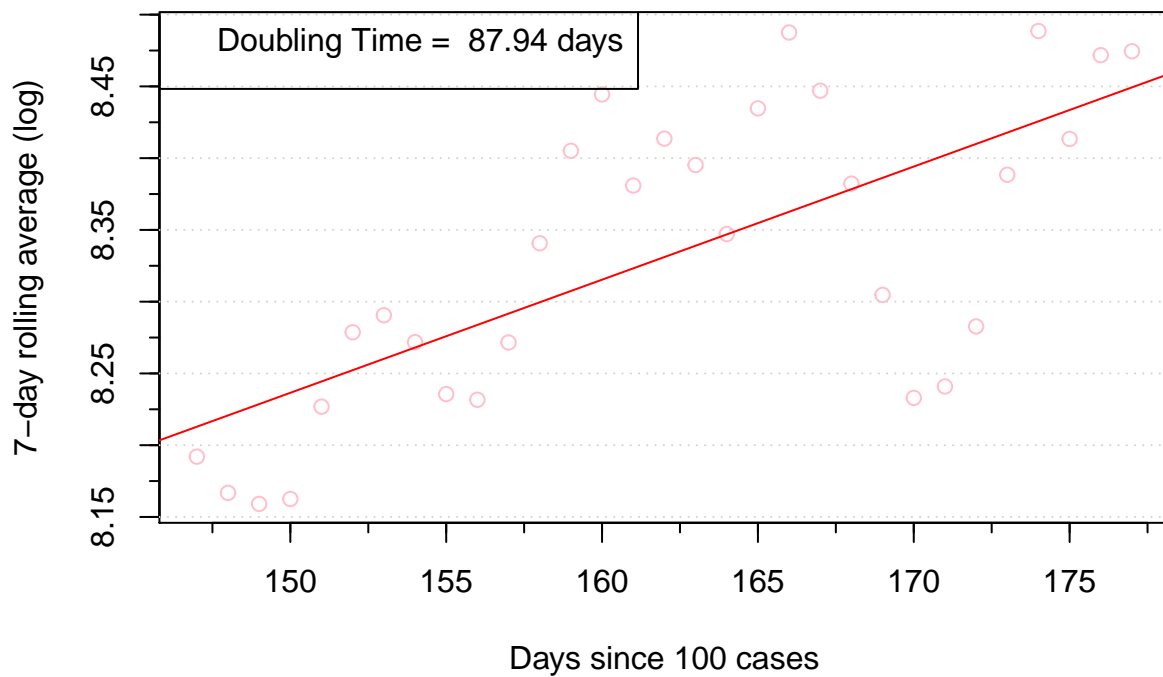
New cases (log scale), Argentina – past 30 days



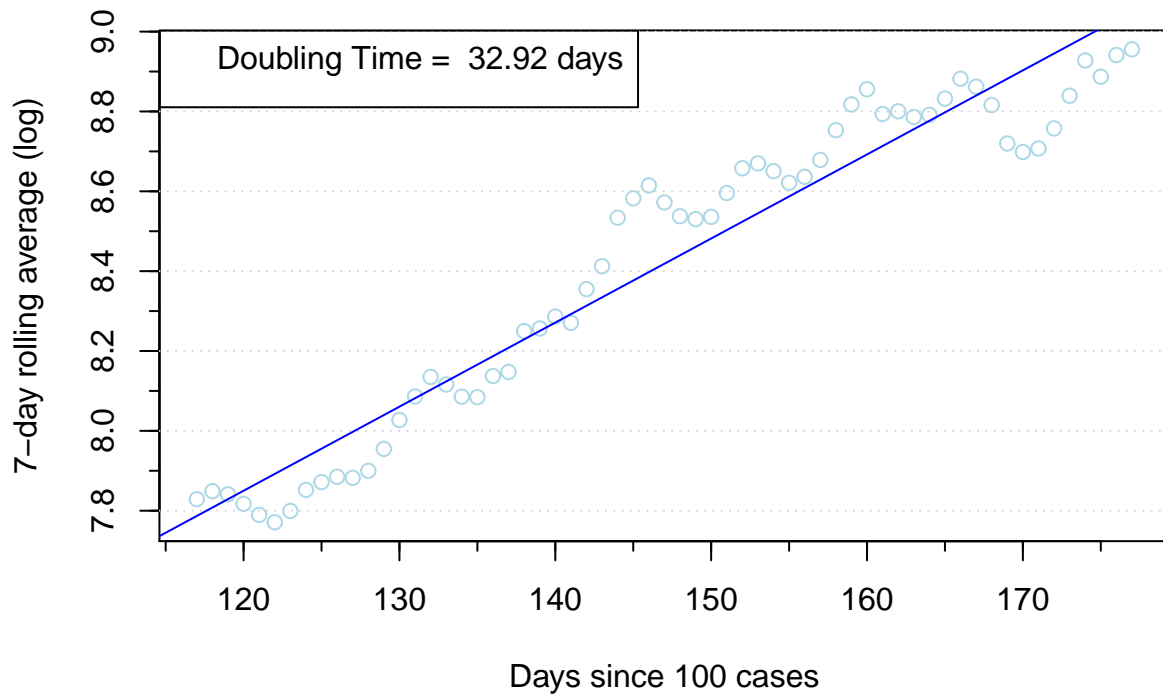
New cases (log scale), CABA – past 30 days



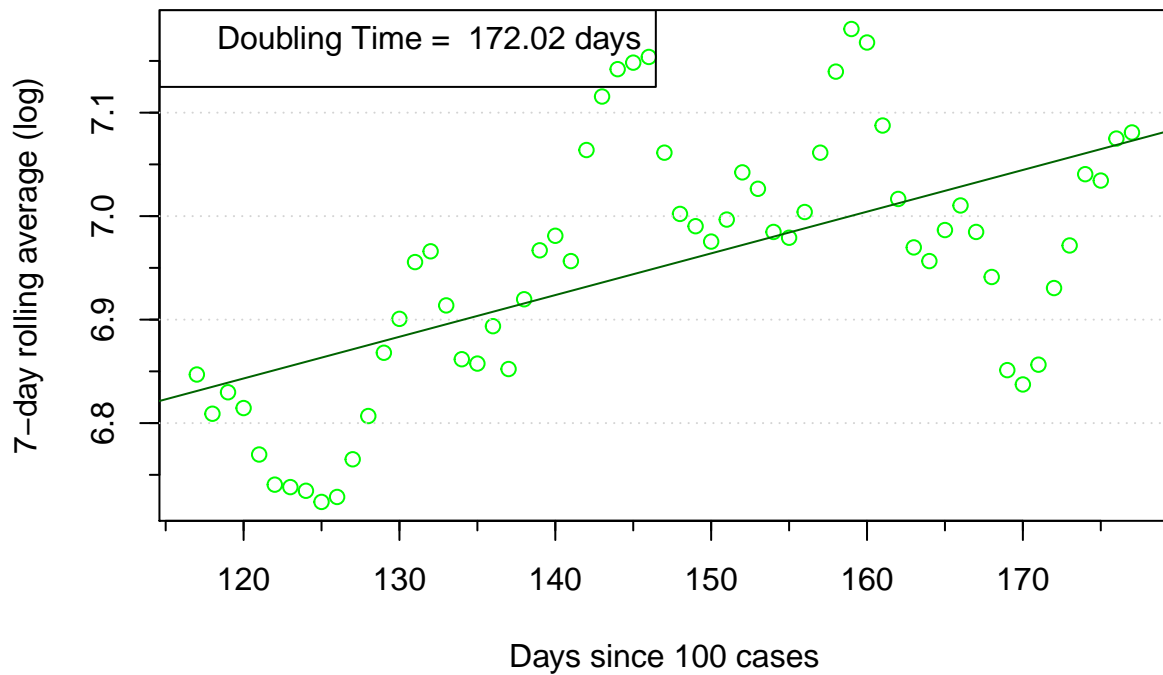
New cases (log scale), Province of Buenos Aires – past 30 days



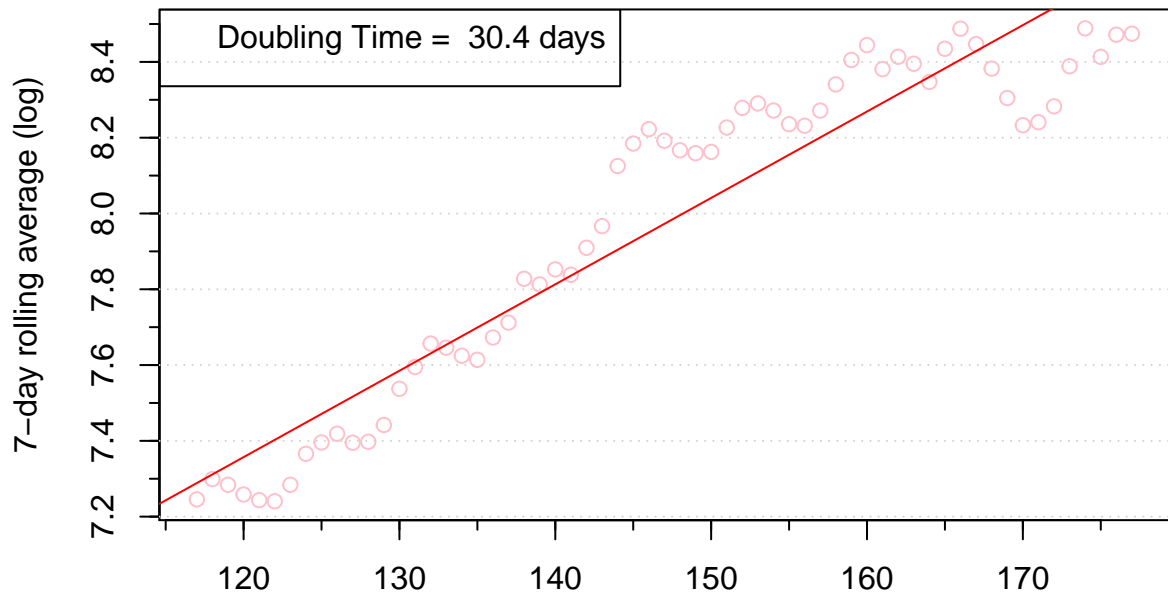
New cases (log scale), Argentina – past 60 days



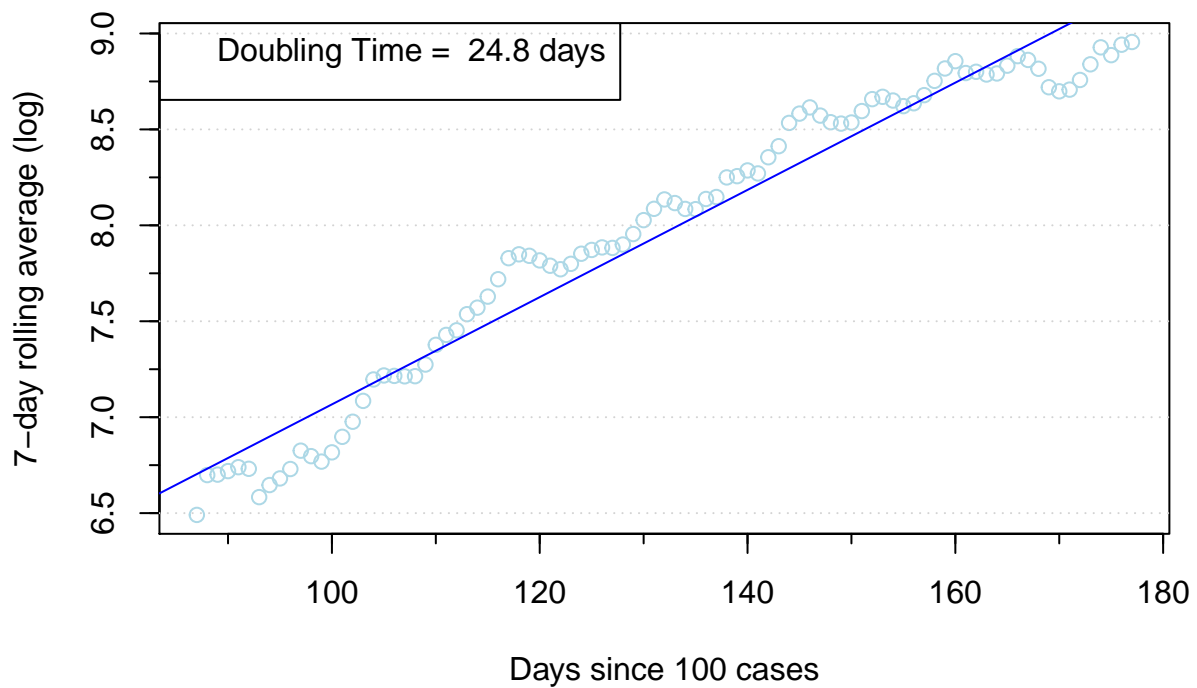
New cases (log scale), CABA – past 60 days



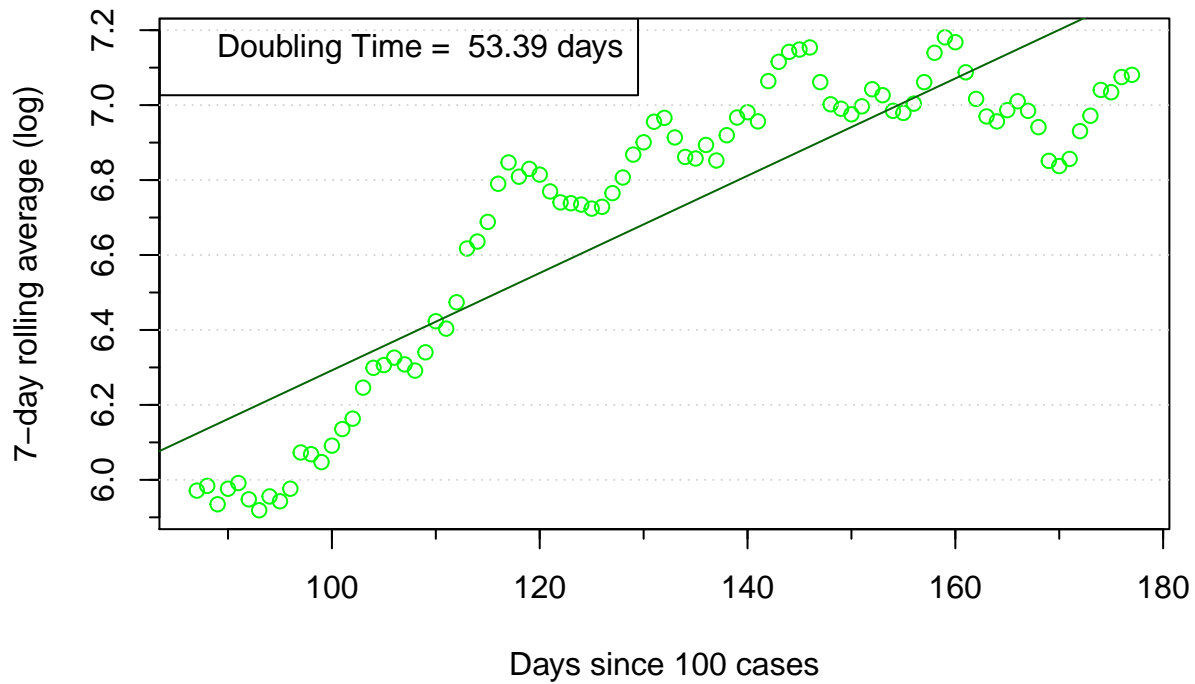
New cases (log scale), Province of Buenos Aires – past 60 days



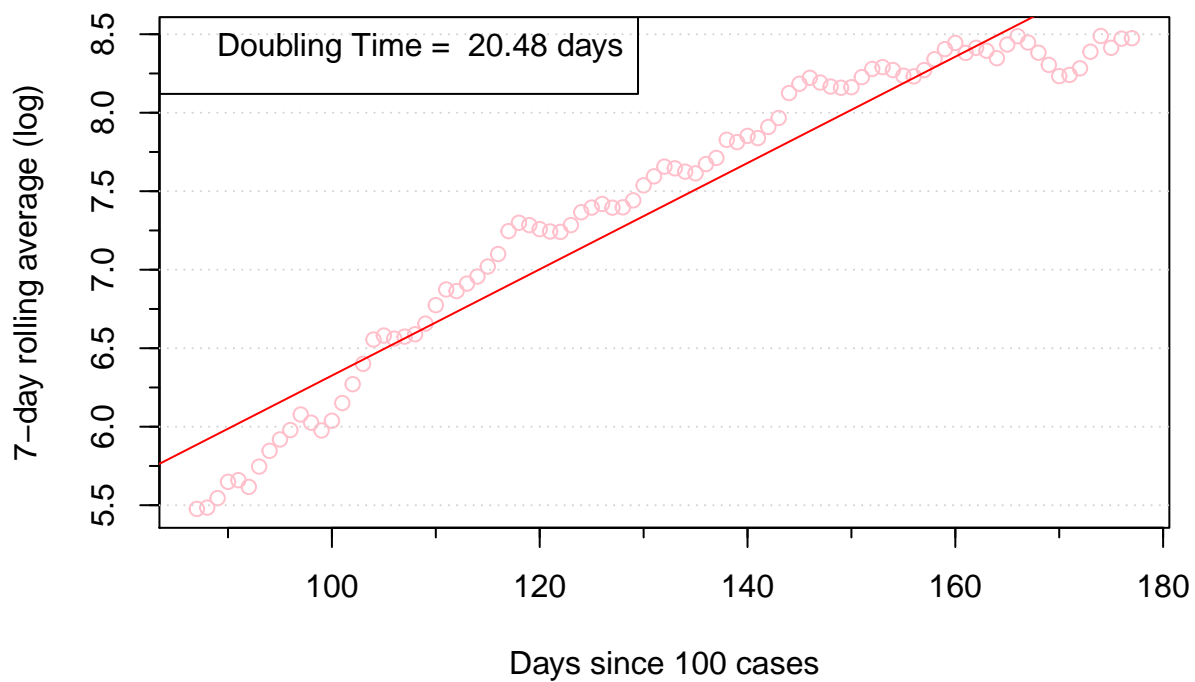
New cases (log scale), Argentina – past 90 days



New cases (log scale), CABA – past 90 days



New cases (log scale), Province of Buenos Aires – past 90 days



##	Argentina	CABA	Province of Buenos Aires
## all dates	18.99	20.77	15.99
## past 14 days	82.81	108.26	254.78
## past 30 days	60.84	-363.40	87.94
## past 60 days	32.92	172.02	30.40

## past 90 days	24.80	53.39	20.48
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R0 over time (daily cases estimate)

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

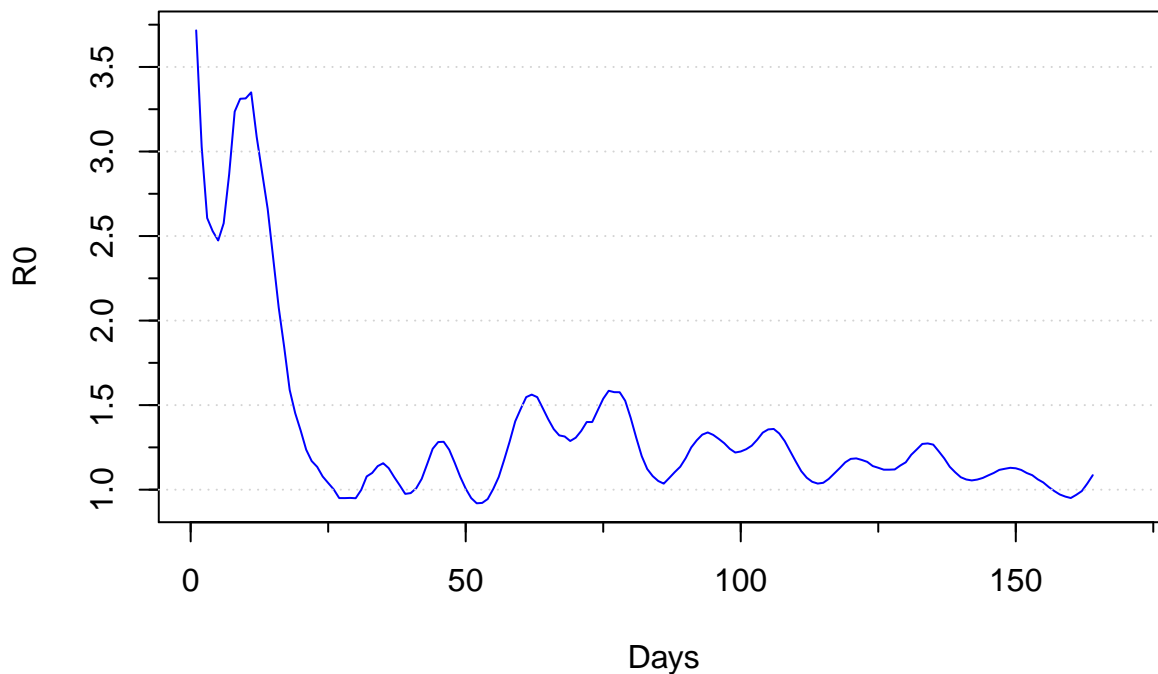
The following data on serial incidence are drawn from a meta analysis of COVID-19: <https://doi.org/10.1002/jmv.26041>

$$\mu = 5.08 \text{ days}$$

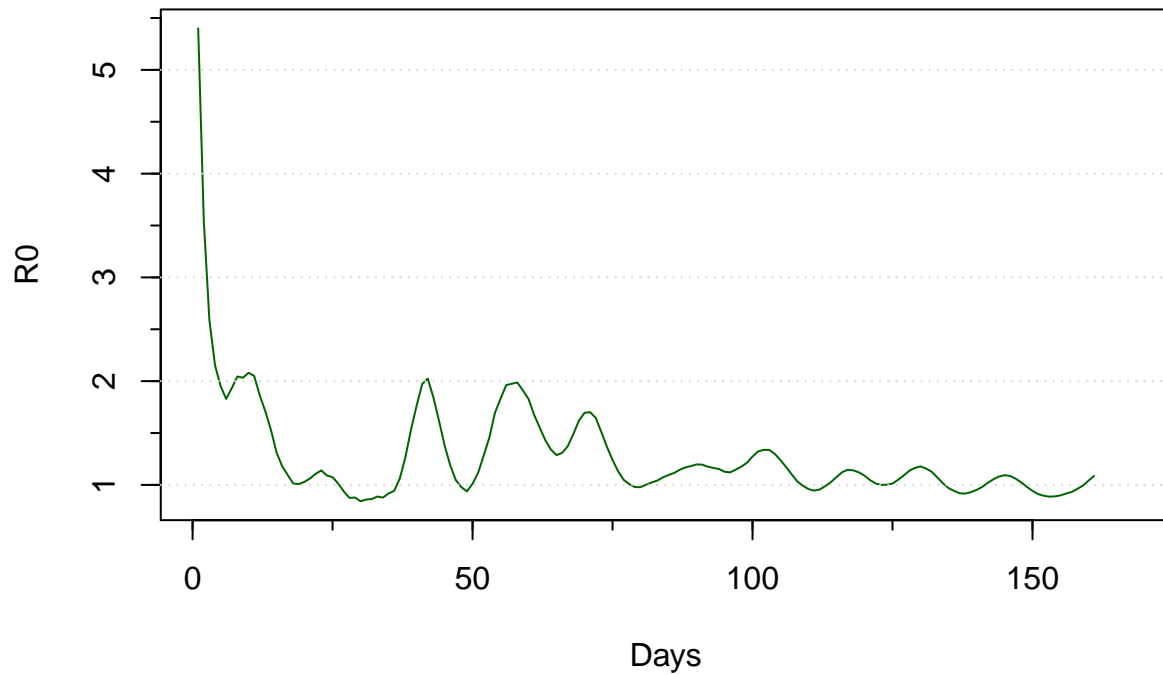
$$\sigma = .18$$

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

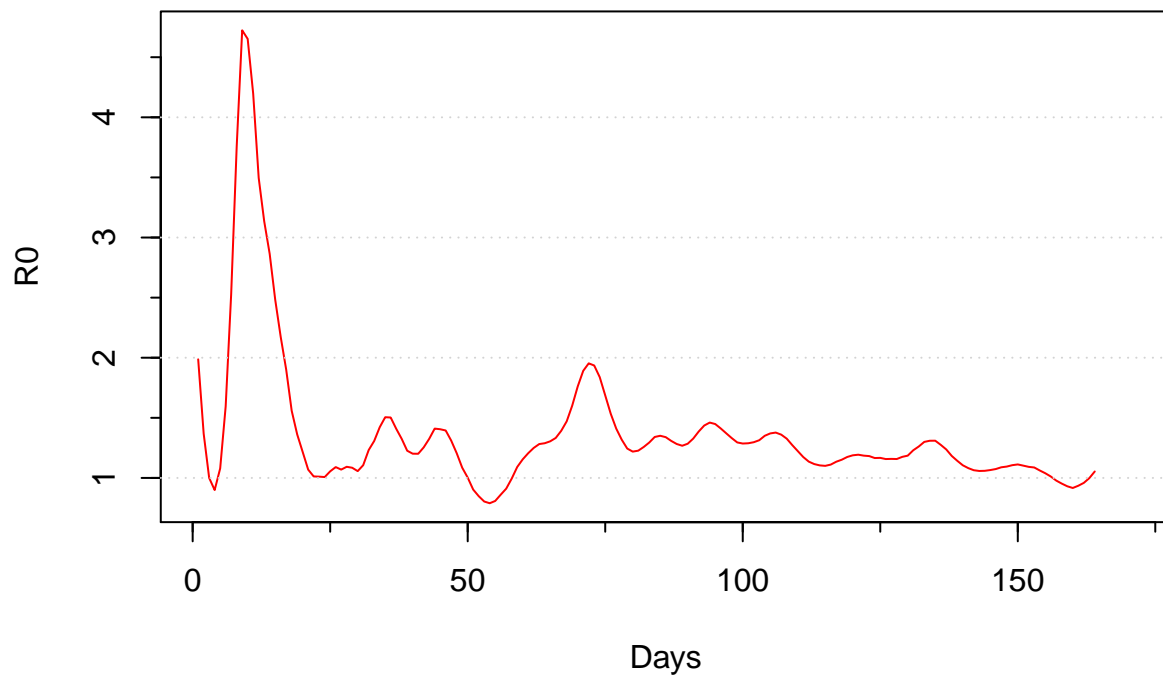
R0 over time, Argentina overall



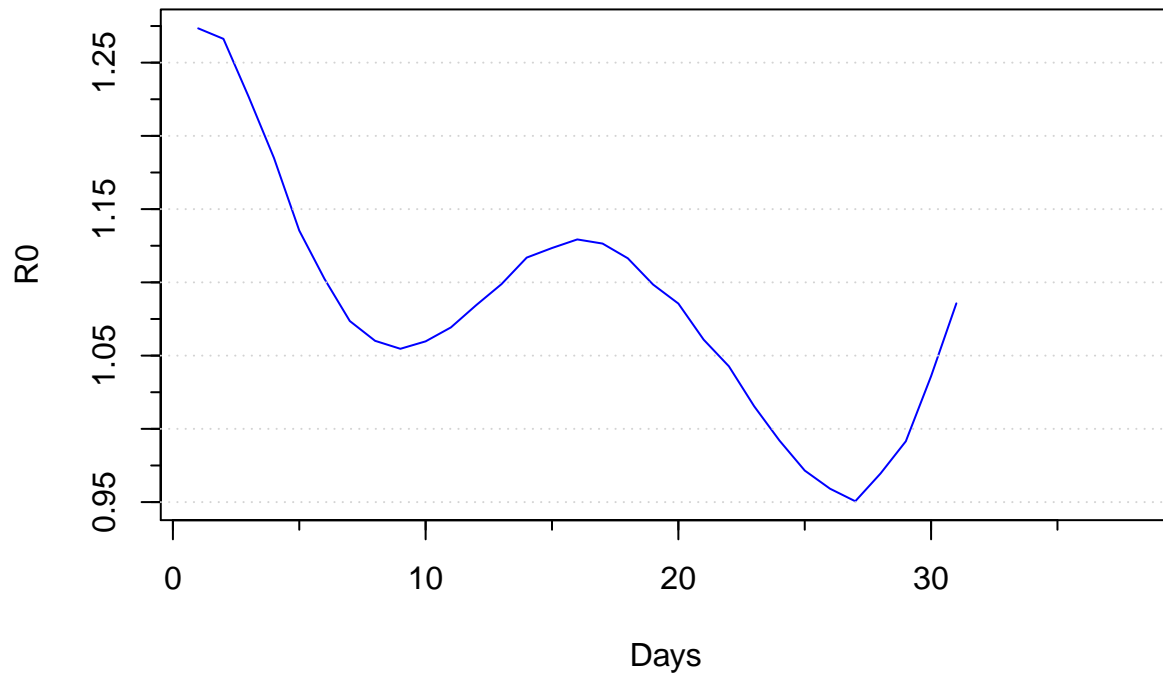
R0 over time, CABA overall



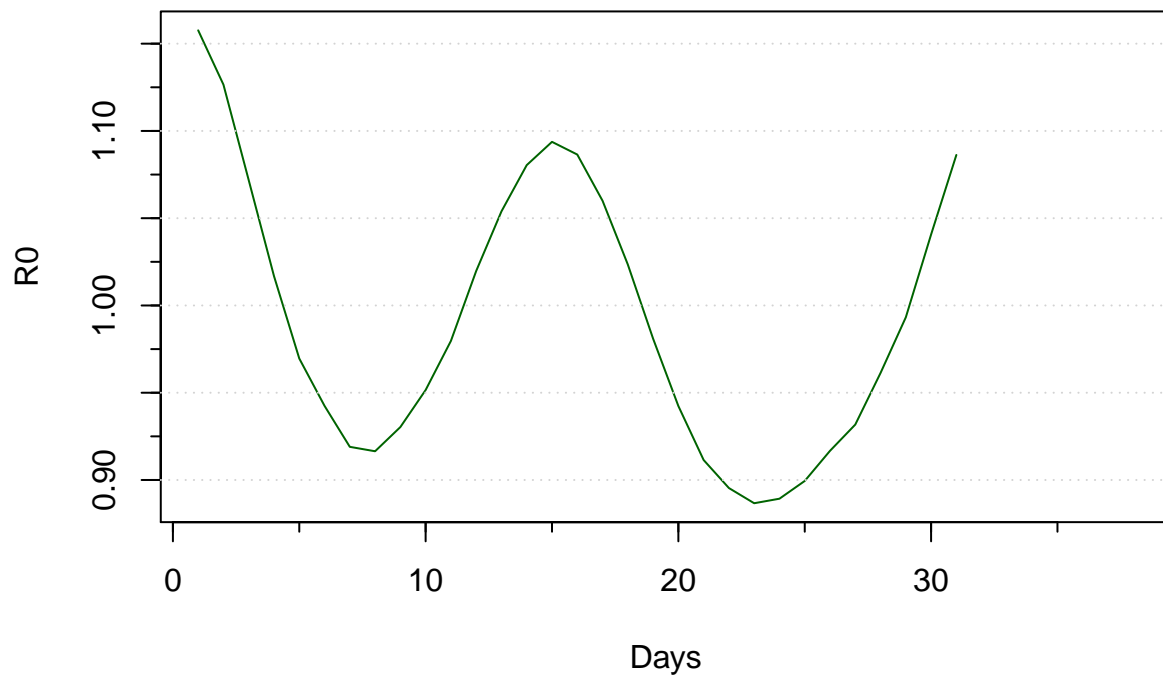
R0 over time, Province of Buenos Aires overall



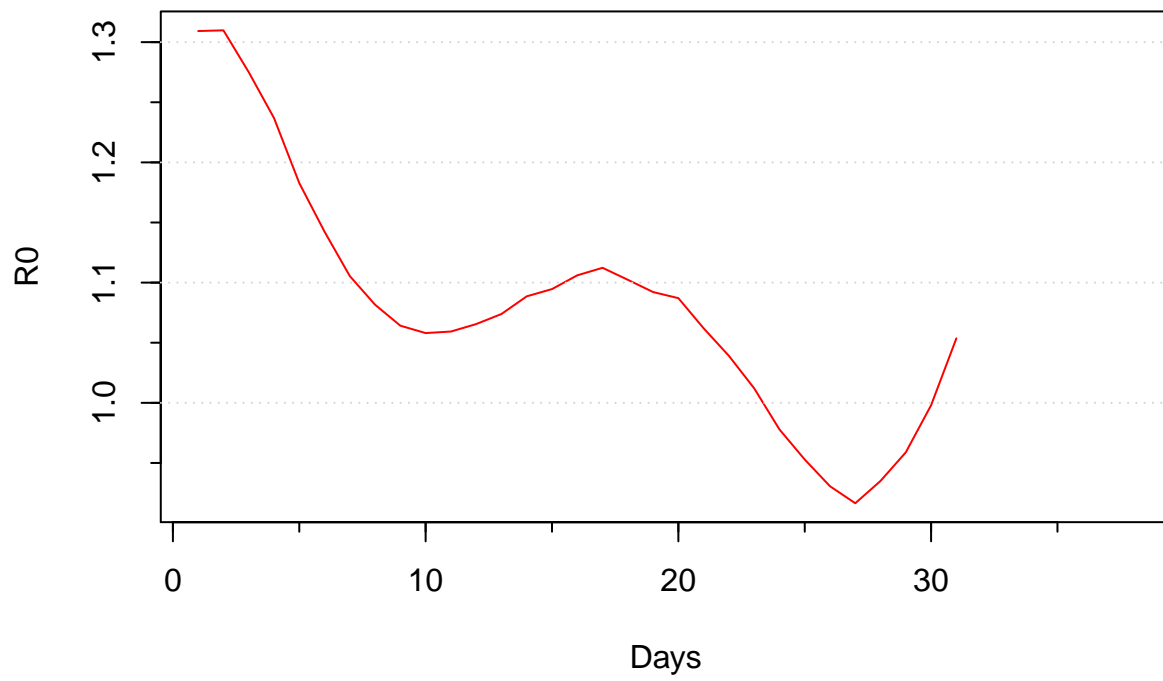
R0 over time, Argentina past 30 days



R0 over time, CABA past 30 days

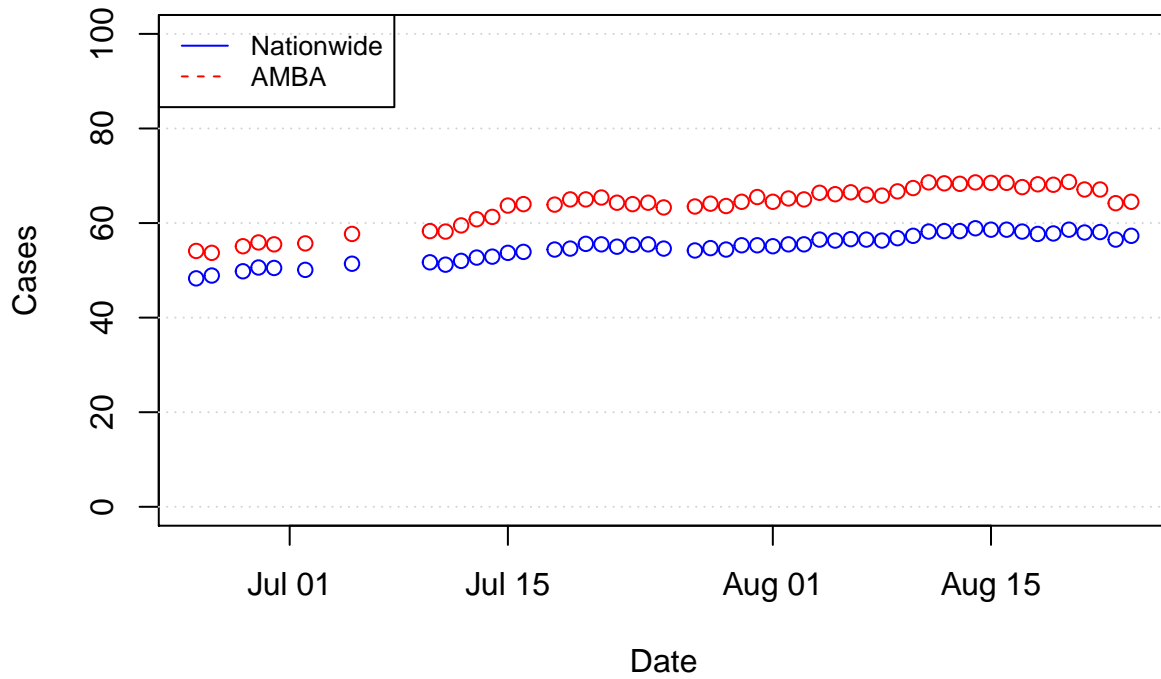


R0 over time, Province of Buenos Aires past 30 days



ICU Capacity

Daily ICU Bed Rate



##	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

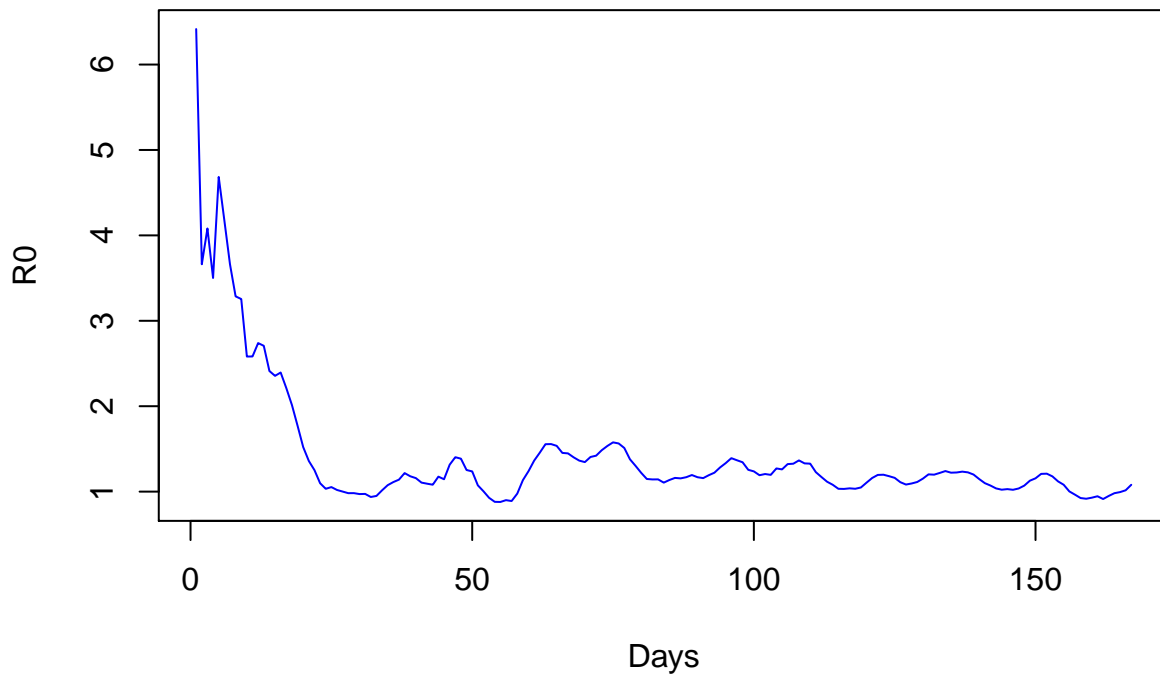
##	59	2020-08-22	1907	58.1	67.1
##	60	2020-08-23	1922	56.5	64.2
##	61	2020-08-24	1960	57.3	64.5

Better R Estimate

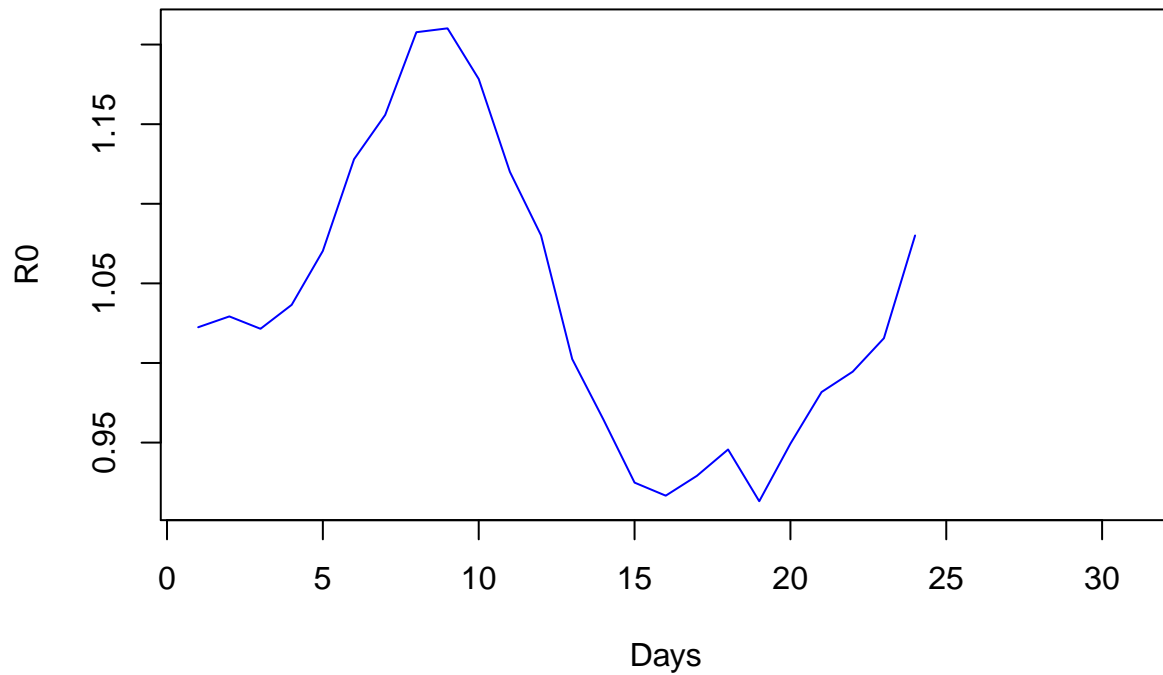
This data is drawn from over 1 million epidemiological records, indexed by the date the case was registered with the Ministry of Health. Cases are often registered prior to a confirmed diagnosis; therefore, this data “lags”.

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.

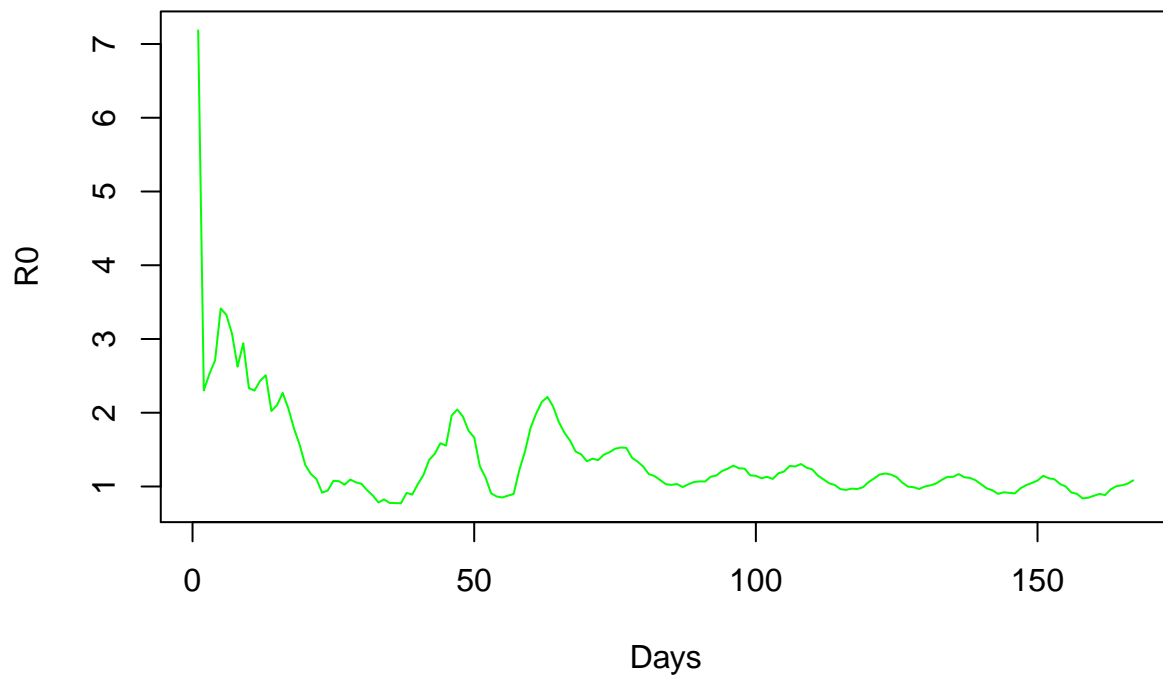
R0 over time, National Overall



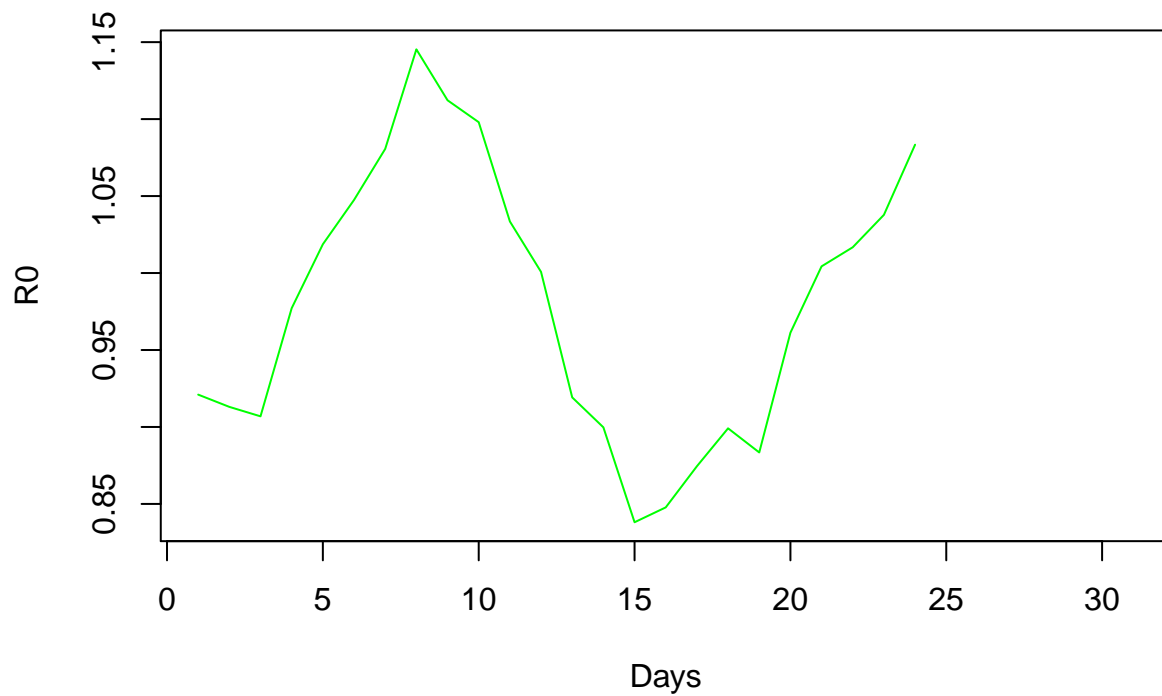
R0 over time, National Past Month



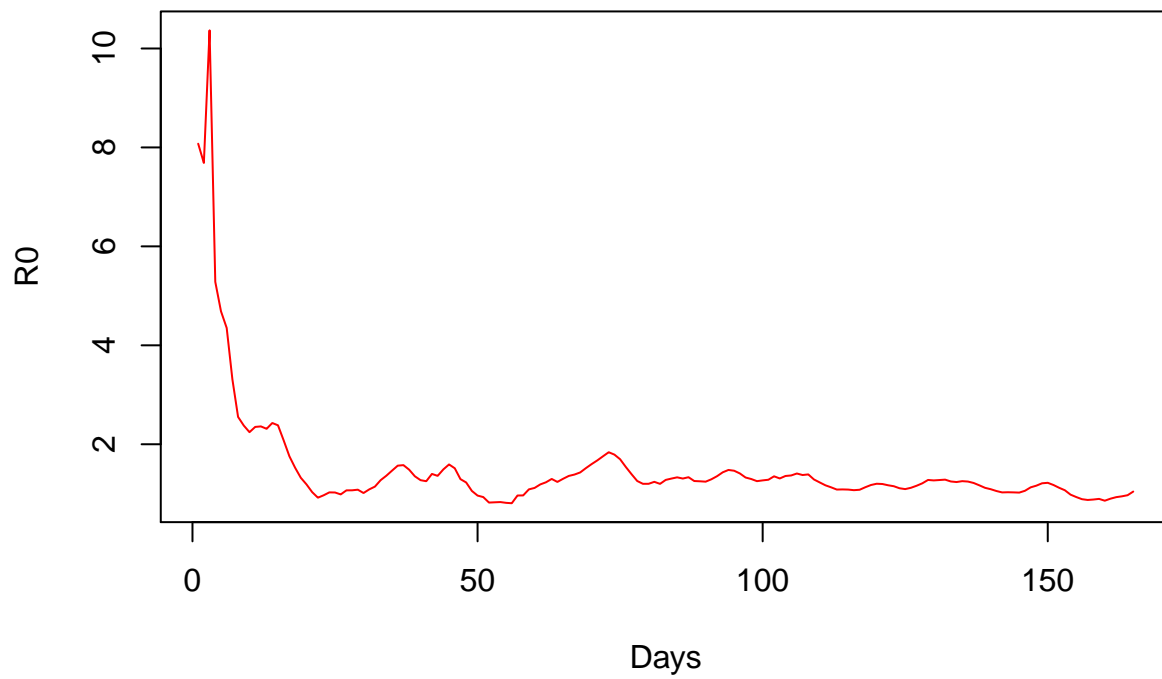
R0 over time, CABA Overall



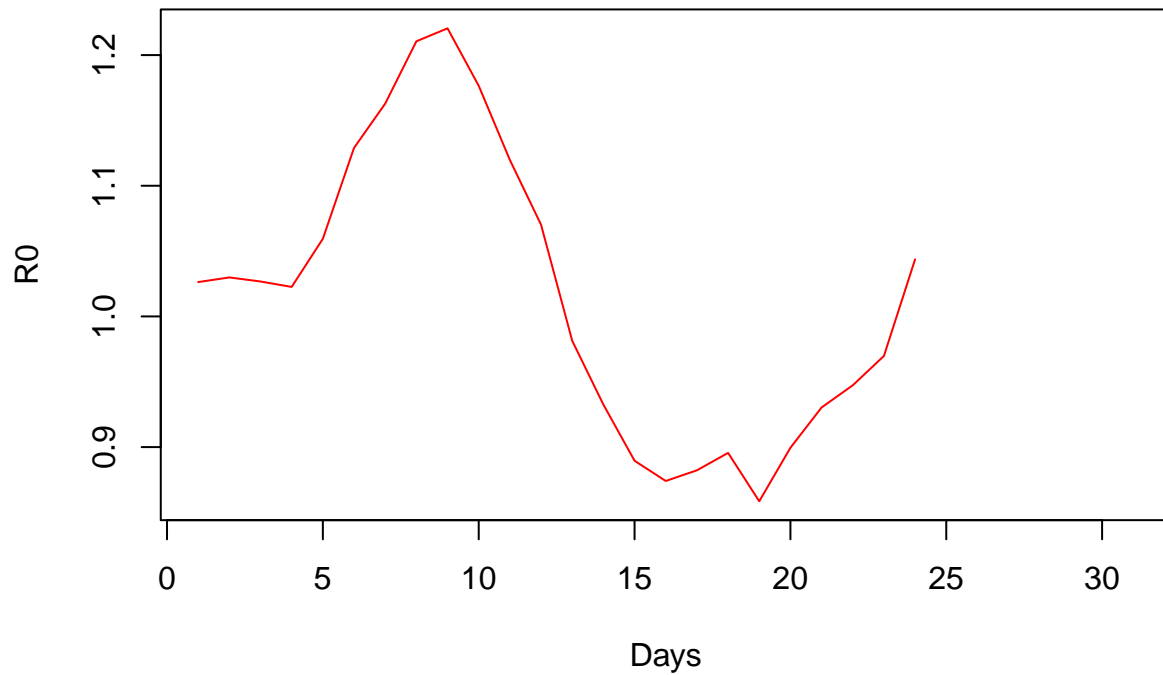
R0 over time, CABA Past Month



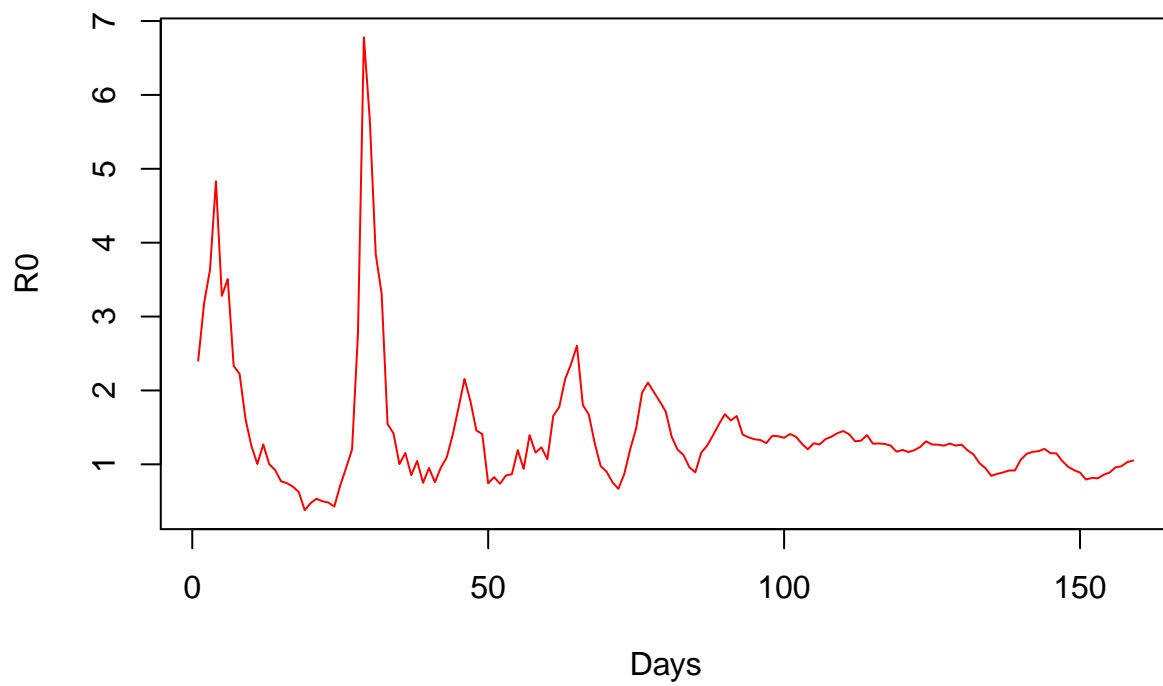
R0 over time, PBA Overall



R0 over time, PBA Past Month



R0 over time, San Isidro Overall



R0 over time, San Isidro Past Month

