Covid-19 Modelling Results, as at 26 April 2020

CANADA

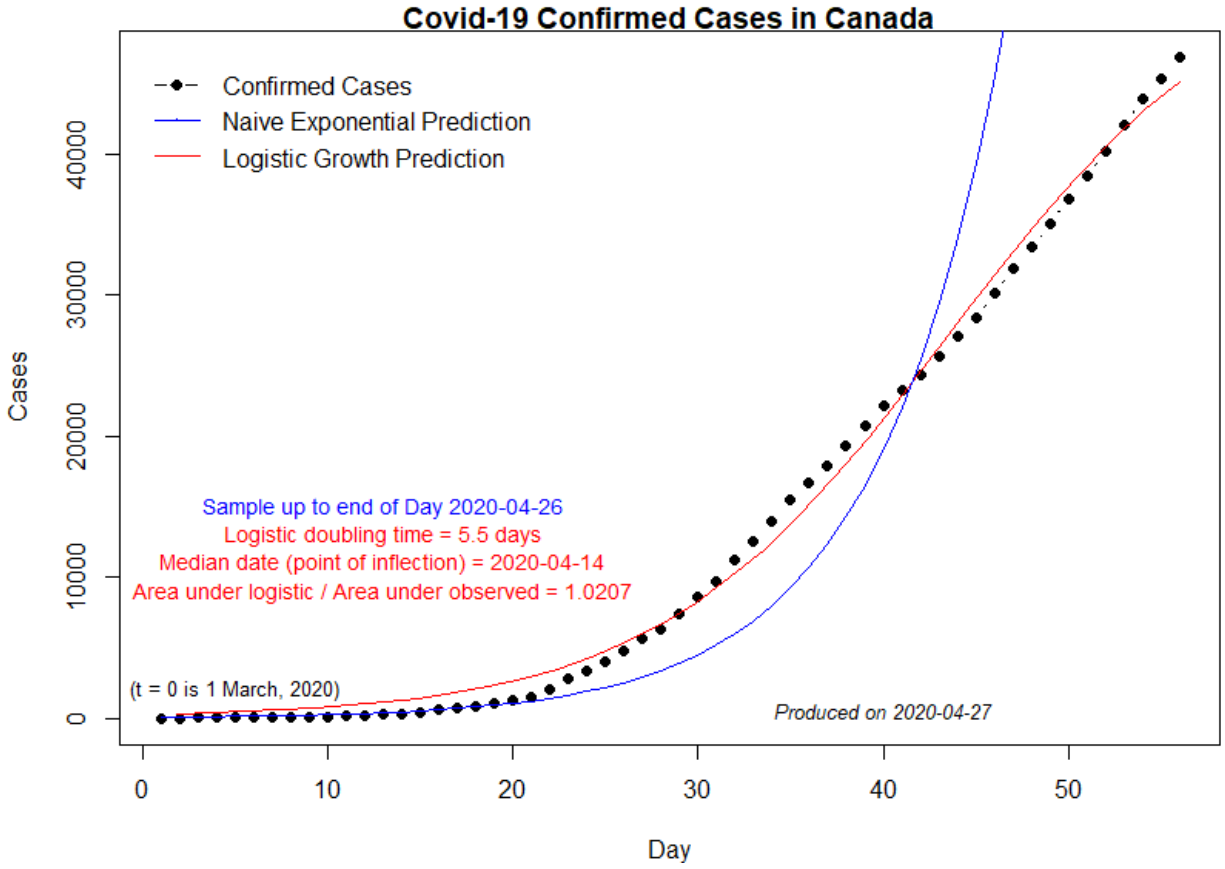
1. Total Confirmed Cases

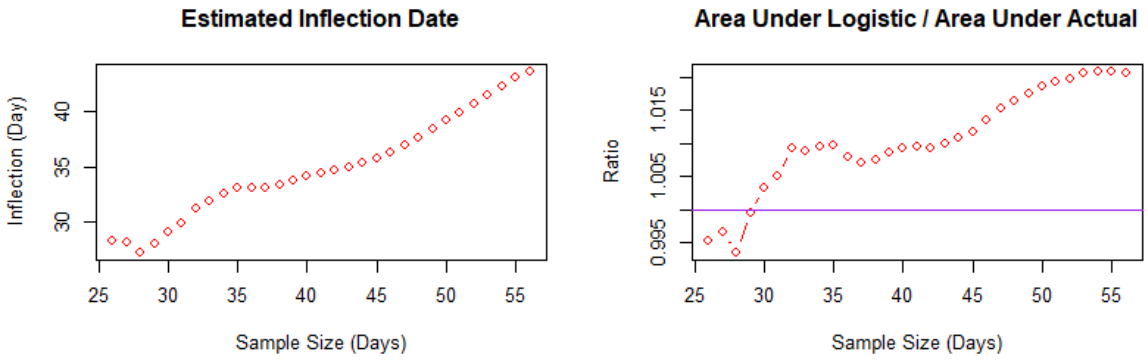
My R code for Covid-19 modelling is at

https://raw.githubusercontent.com/DaveGiles1949/r-code/master/Canadian_Covid-19_Cases.R

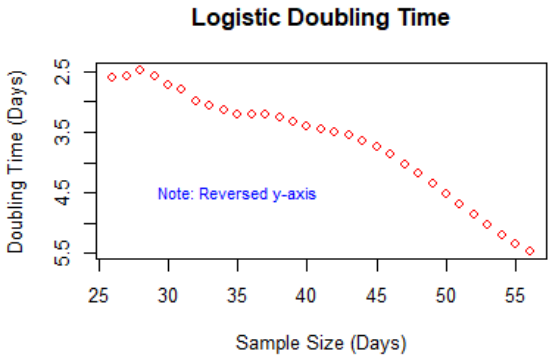
The code will automatically download the latest data from my github account.

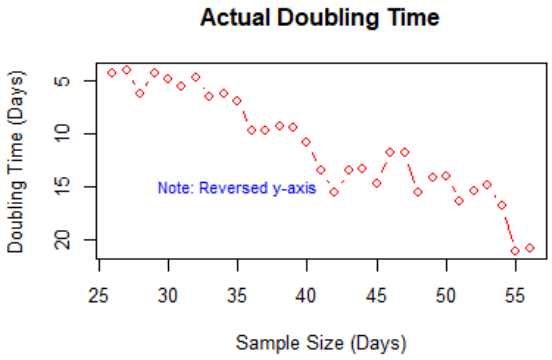
The chart below shows results based on *data from 2 March to 26 April inclusive*.




Estimated Inflection Date
Inflection (Day)
30
35
40
25
30
35
40
45
50
55
Sample Size (Days)

Area Under Logistic / Area Under Actual
Ratio
0.995
1.005
1.015
25
30
35
40
45
50
55
Sample Size (Days)


Logistic Doubling Time
Doubling Time (Days)
2.5
3.5
4.5
5.5
Note: Reversed y-axis
25
30
35
40
45
50
55
Sample Size (Days)


Actual Doubling Time
Doubling Time (Days)
5
10
15
20
Note: Reversed y-axis
25
30
35
40
45
50
55
Sample Size (Days)

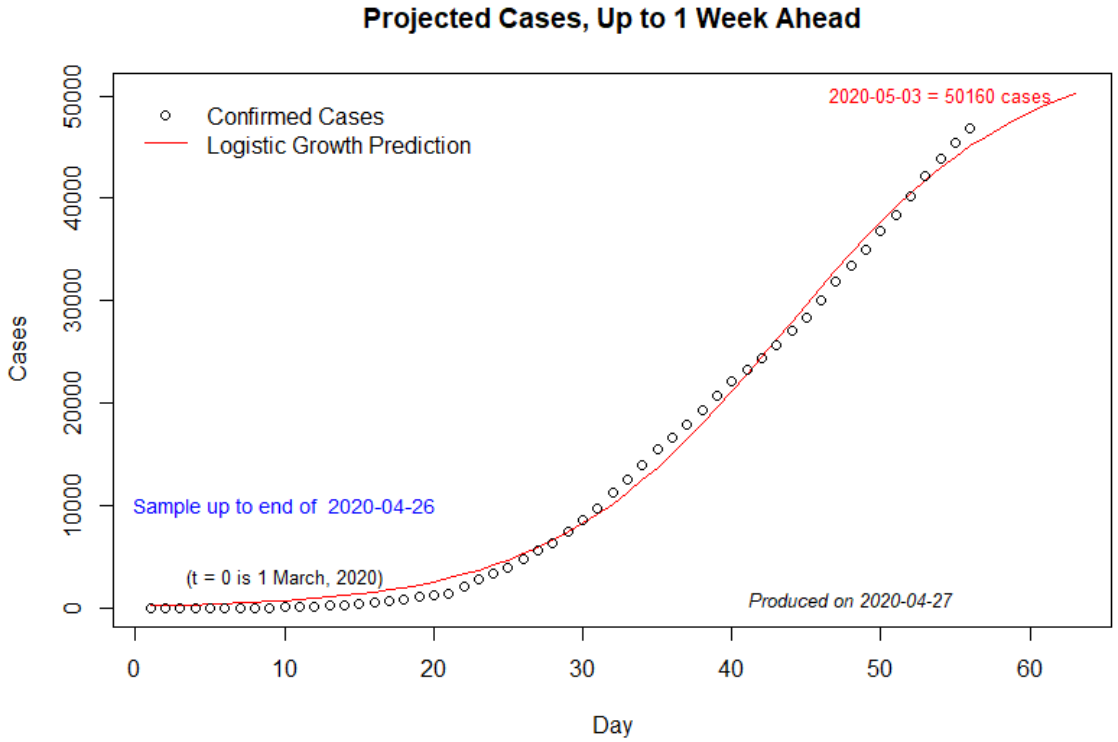

Projected Cases, Up to 1 Week Ahead
Confirmed Cases
Logistic Growth Prediction
2020-05-03 = 50160 cases
Cases
0
10000
20000
30000
40000
50000
Sample up to end of 2020-04-26
(t = 0 is 1 March, 2020)
Produced on 2020-04-27
0
10
20
30
40
50
60
Day

Table 1: Projected Covid-19 Cases in Canada

(Projections are in Blue; Actual Values are in Brackets)

Sample end (projection made): 20 April

21 Apr	*22 Apr*	*23 Apr*	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*
35811 [38422]	36536 [40190]	37181 [42110]	37753 [43888]	38258 [45354]	38702 [46895]	39091

Sample end (projection made): 21 April

22 Apr	*23 Apr*	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*
37447 [40190]	38196 [42110]	38867 [43888]	39464 [45354]	39994 [46895]	40463	40877

Sample end (projection made): 22 April

23 Apr	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*
39135 [42110]	39911 [43888]	40609 [45354]	41234 [46895]	41791	42287	42727

Sample end (projection made): 23 April

24 Apr	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*
40911 [43888]	41720 [45354]	42452 [46895]	43110	43701	44229	44699

Sample end (projection made): 24 April

25 Apr	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*
42704 [45354]	43543 [46895]	44306	44996	45617	46176	4667

Sample end (projection made): 25 April

26 Apr	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*	*2 May*
44398 [46895]	45253	46032	46739	47378	47954	48472

Sample end (projection made): 26 April

27 Apr	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*	*2 May*	*3 May*
46035	46896	47683	48398	49046	49632	50160

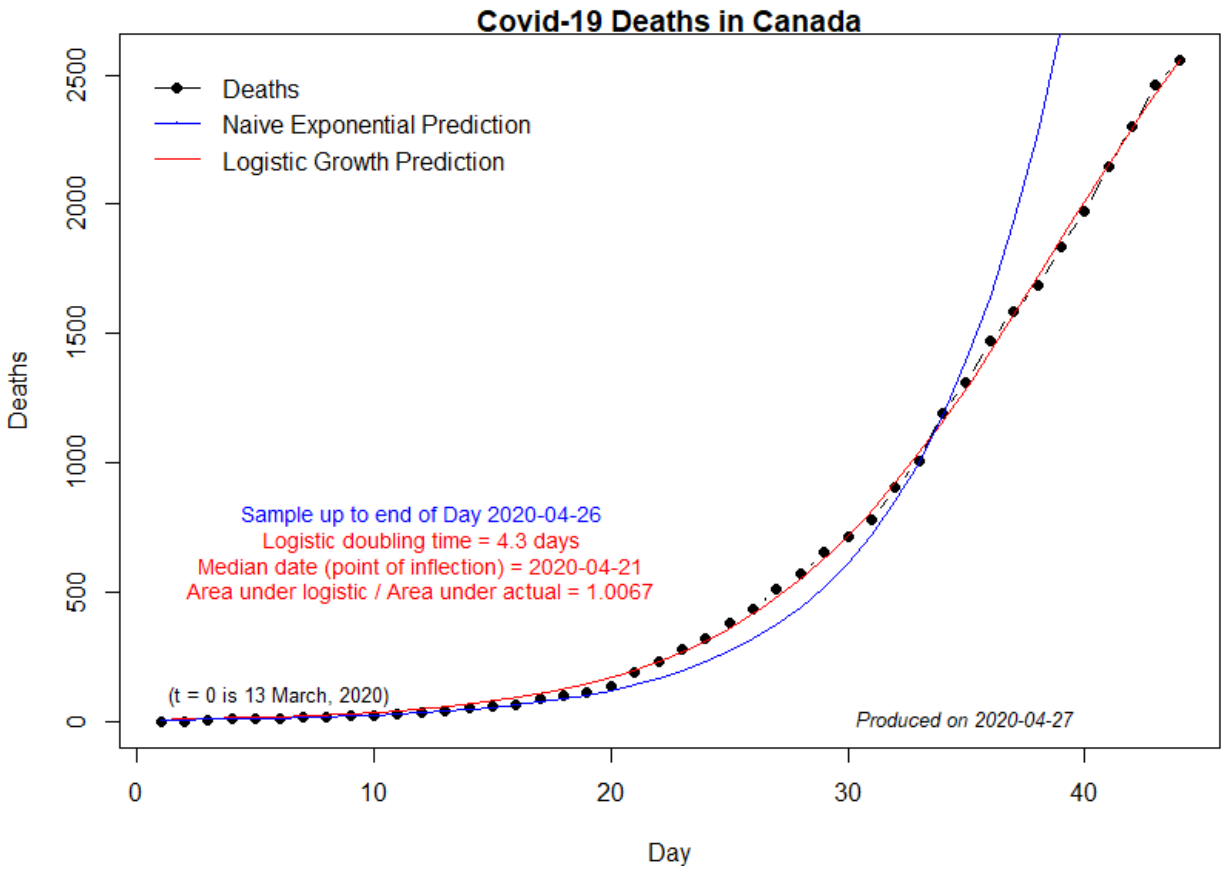
2. Total Number of Deaths

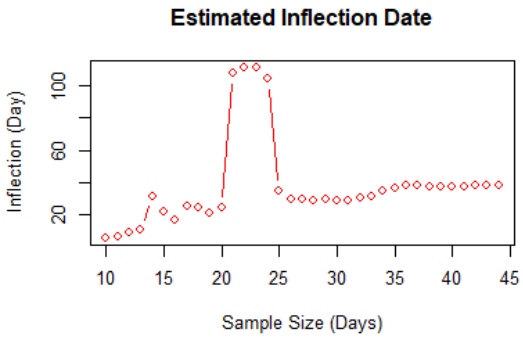
My R code for Covid-19 modelling is at

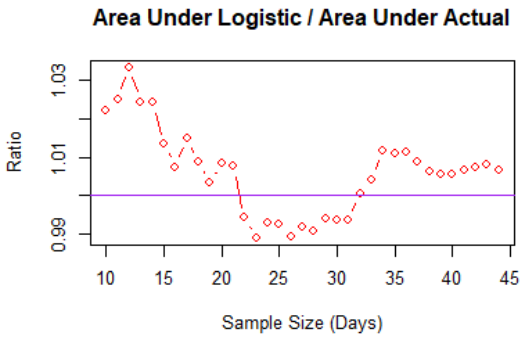
https://raw.githubusercontent.com/DaveGiles1949/r-code/master/Canadian_Covid-19_Deaths.R

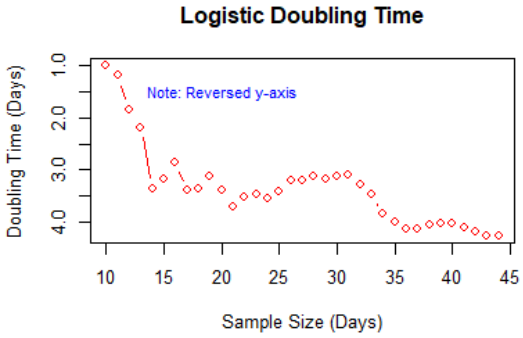
The code will automatically download the latest data from my github account.

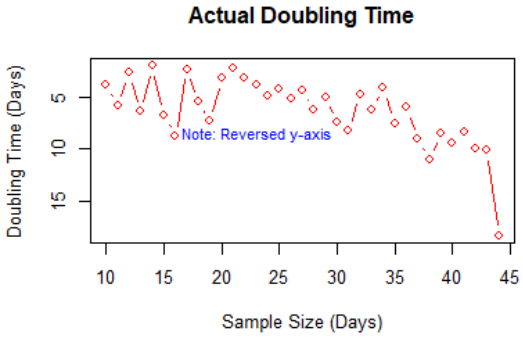
The chart below shows results based on *data from 14 March to 26 April inclusive*.




Estimated Inflection Date
Inflection (Day)
20
60
100
10
15
20
25
30
35
40
45
Sample Size (Days)


Area Under Logistic / Area Under Actual
Ratio
0.99
1.01
1.03
10
15
20
25
30
35
40
45
Sample Size (Days)


Logistic Doubling Time
Doubling Time (Days)
1.0
2.0
3.0
4.0
Note: Reversed y-axis
10
15
20
25
30
35
40
45
Sample Size (Days)


Actual Doubling Time
Doubling Time (Days)
5
10
15
Note: Reversed y-axis
10
15
20
25
30
35
40
45
Sample Size (Days)

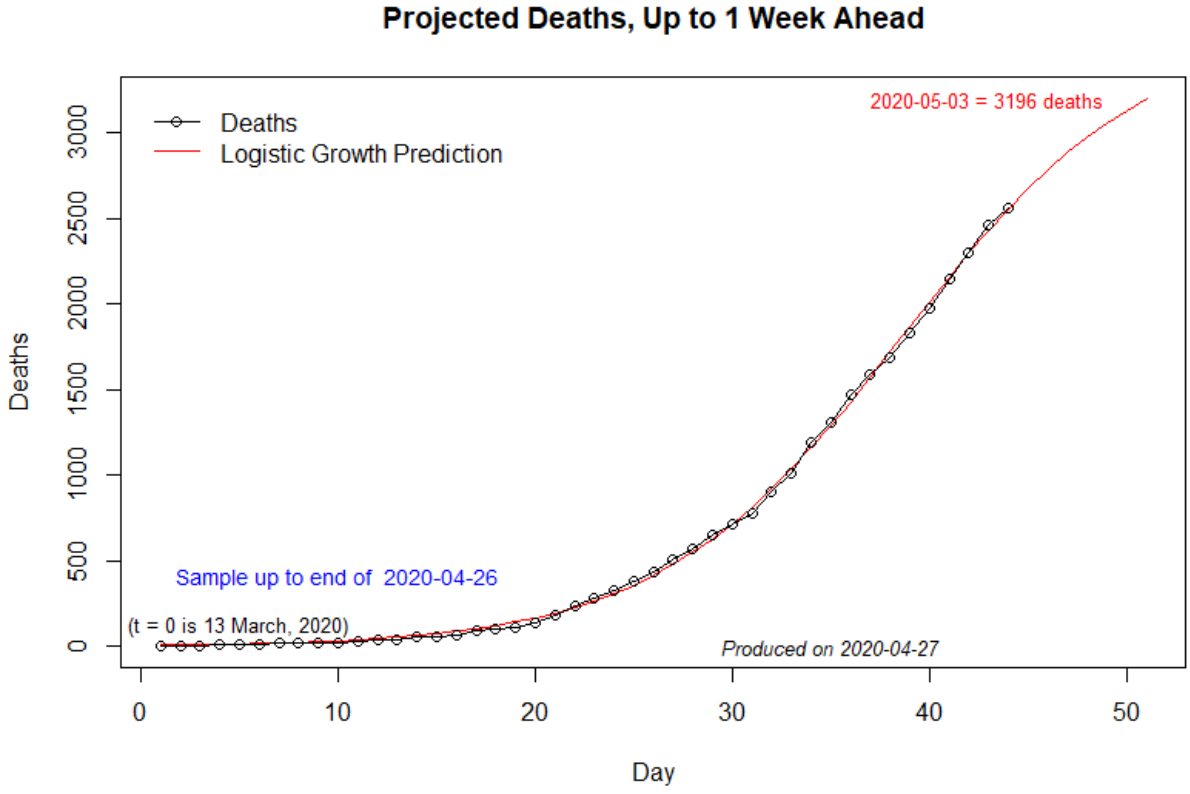

Projected Deaths, Up to 1 Week Ahead
Deaths
Logistic Growth Prediction
2020-05-03 = 3196 deaths
Deaths
0
500
1000
1500
2000
2500
3000
Sample up to end of 2020-04-26
(t = 0 is 13 March, 2020)
Produced on 2020-04-27
0
10
20
30
40
50
Day

Table 2: Projected Covid-19 Deaths in Canada

(Projections are in Red; Actual Values are in Brackets)

Sample end (projection made): 20 April

21 Apr	*22 Apr*	*23 Apr*	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*
1842	1972	2097	2215	2325	2427	2520
[1834]	[1974]	[2146]	[2302]	[2465]	[2560]	

Sample end (projection made): 21 April

22 Apr	*23 Apr*	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*
1966	2089	2205	2313	2413	2504	2586
[1974]	[2146]	[2302]	[2465]	[2560]		

Sample end (projection made): 22 April

23 Apr	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*
2094	2211	2321	2422	2514	2597	2672
[2146]	[2302]	[2465]	[2560]			

Sample end (projection made): 23 April

24 Apr	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*
2243	2361	2470	2570	2662	2745	2818
[2302]	[2465]	[2560]				

Sample end (projection made): 24 April

25 Apr	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*
2395	2513	2622	2721	2812	2894	2967
[2465]	[2560]					

Sample end (projection made): 25 April

26 Apr	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*	*2 May*
2552	2670	2779	2878	2969	3050	3123
[2560]						

Sample end (projection made): 26 April

27 Apr	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*	*2 May*	*3 May*
2673	2783	2884	2975	3057	3131	3196

ONTARIO

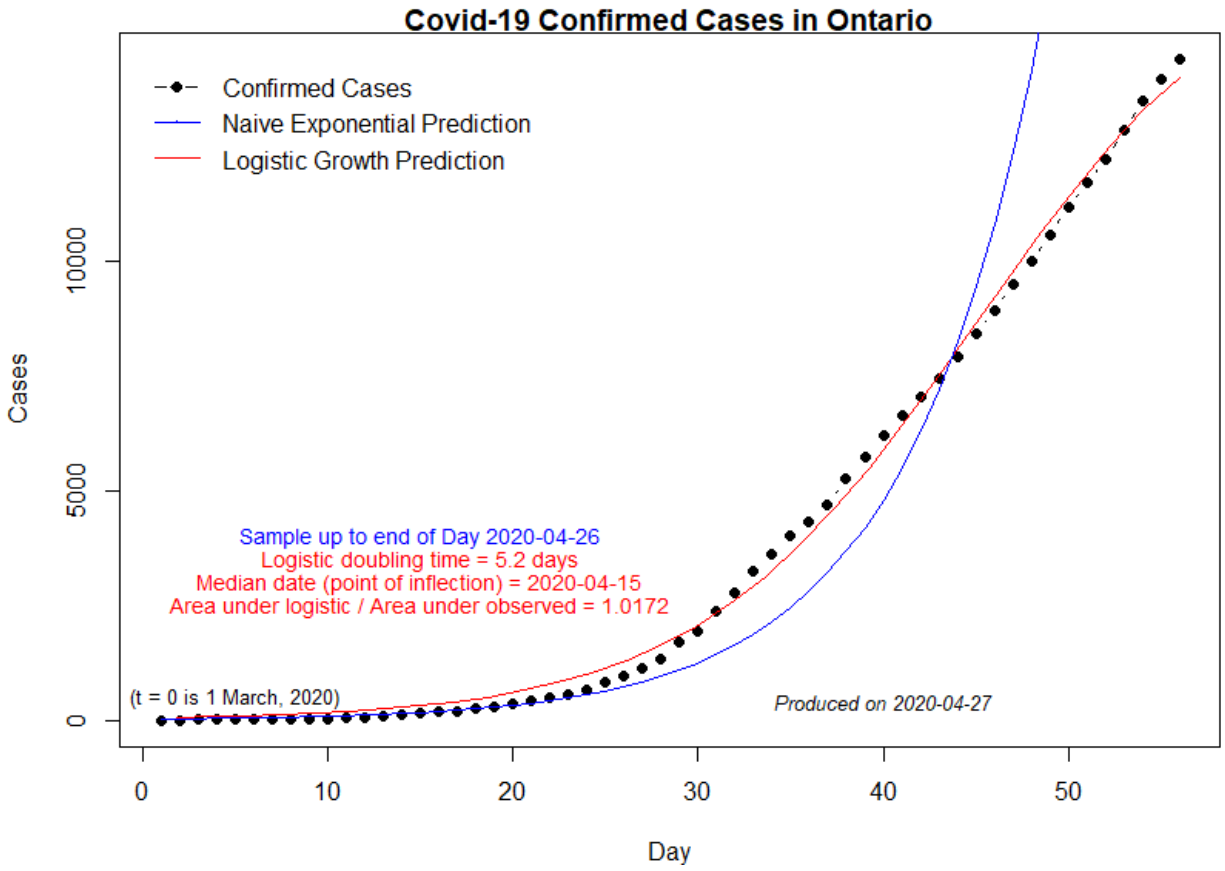
1. Total Confirmed Cases

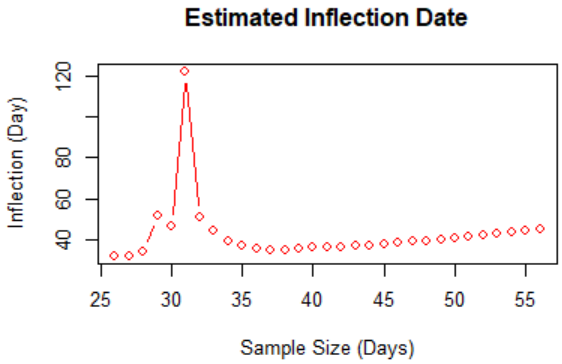
My R code for Covid-19 modelling is at

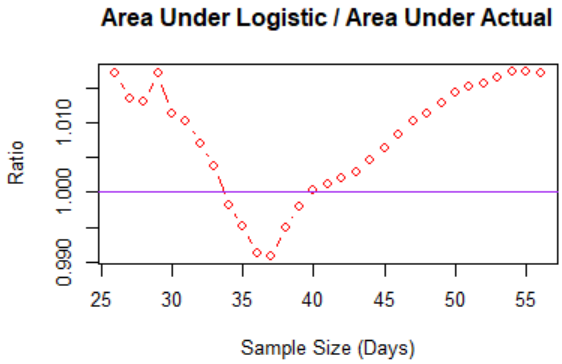
https://raw.githubusercontent.com/DaveGiles1949/r-code/master/Ontario_Covid-19_Cases.R

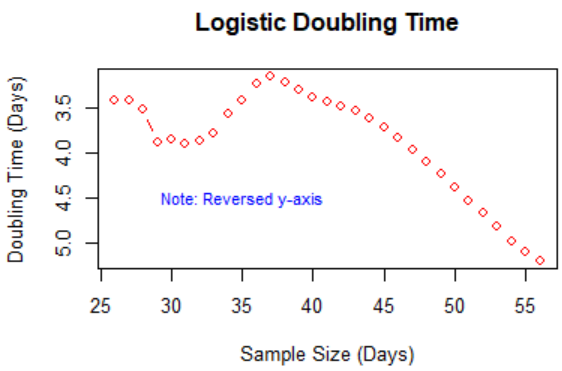
The code will automatically download the latest data from my github account.

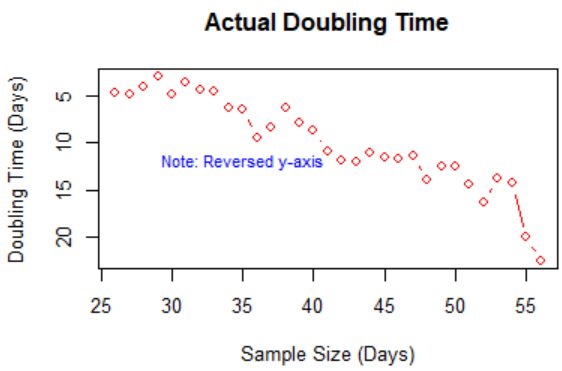
The chart below shows results based on *data from 2 March to 26 April inclusive*.




Estimated Inflection Date
Inflection (Day)
40
60
80
120
25
30
35
40
45
50
55
Sample Size (Days)


Area Under Logistic / Area Under Actual
Ratio
0.990
1.000
1.010
25
30
35
40
45
50
55
Sample Size (Days)


Logistic Doubling Time
Doubling Time (Days)
5.0
4.5
4.0
3.5
Note: Reversed y-axis
25
30
35
40
45
50
55
Sample Size (Days)


Actual Doubling Time
Doubling Time (Days)
20
15
10
5
Note: Reversed y-axis
25
30
35
40
45
50
55
Sample Size (Days)

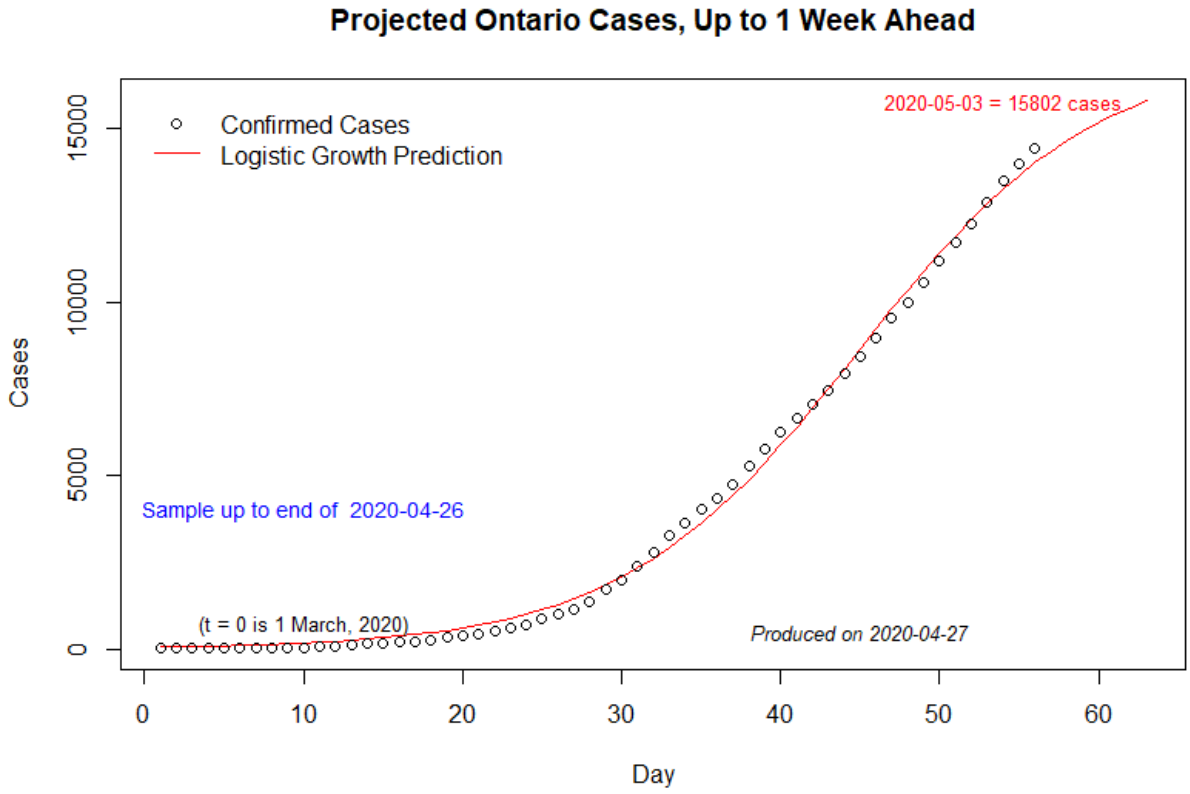

Projected Ontario Cases, Up to 1 Week Ahead
Confirmed Cases
Logistic Growth Prediction
2020-05-03 = 15802 cases
Cases
0
5000
10000
15000
Sample up to end of 2020-04-26
(t = 0 is 1 March, 2020)
Produced on 2020-04-27
0
10
20
30
40
50
60
Day

Table 3: Projected Covid-19 Cases in Ontario

(Projections are in Blue; Actual Values are in Brackets)

Sample end (projection made): 20 April

21 Apr	*22 Apr*	*23 Apr*	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*
11037	11318	11569	11793	11991	12165	12318
[11735]	[12245]	[12879]	[13519]	[13995]	[14432]	

Sample end (projection made): 21 April

22 Apr	*23 Apr*	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*
11591	11879	12139	12370	12576	12759	12919
[12245]	[12879]	[13519]	[13995]	[14432]		

Sample end (projection made): 22 April

23 Apr	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*
12127	12419	12682	12918	13129	13316	13481
[12879]	[13519]	[13995]	[14432]			

Sample end (projection made): 23 April

24 Apr	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*
12697	12995	13265	13509	13727	13921	14094
[13519]	[13995]	[14432]				

Sample end (projection made): 24 April

25 Apr	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*
13292	13600	13879	14132	14359	14563	14745
[13995]	[14432]					

Sample end (projection made): 25 April

26 Apr	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*	*2 May*
13845	14155	14437	14692	14922	15129	15315
[14432]						

Sample end (projection made): 26 April

27 Apr	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*	*2 May*	*3 May*
14351	14656	14934	15186	15413	15618	15802

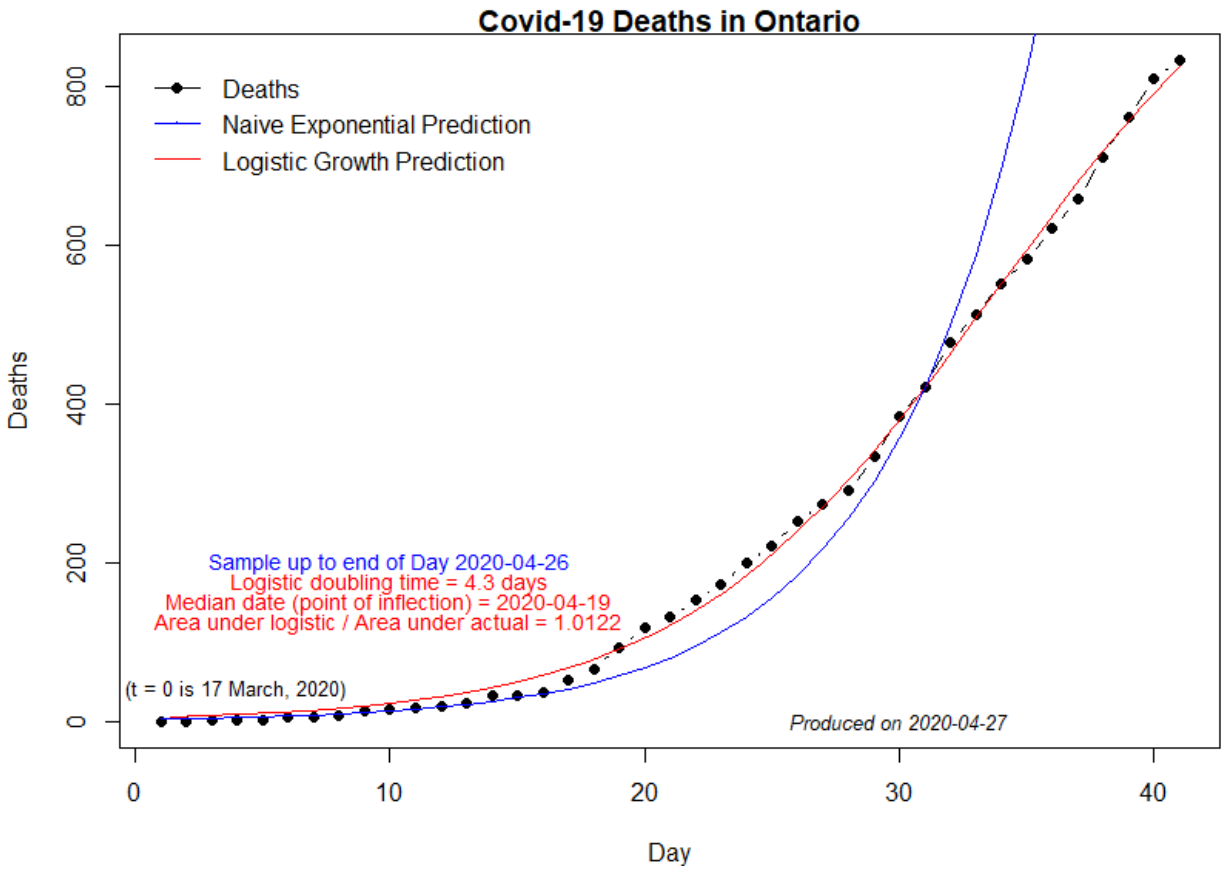
2. Total Number of Deaths

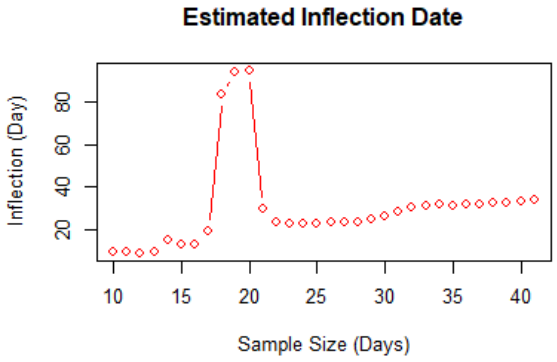
My R code for Covid-19 modelling is at

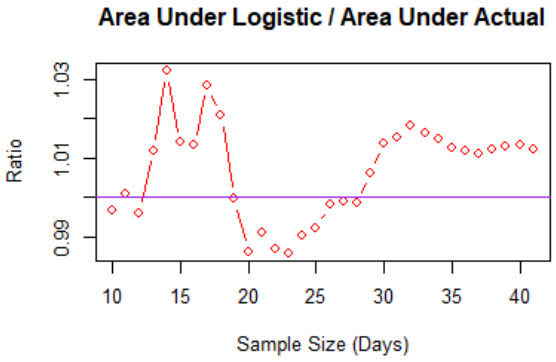
https://raw.githubusercontent.com/DaveGiles1949/r-code/master/Ontario_Covid-19_Deaths.R

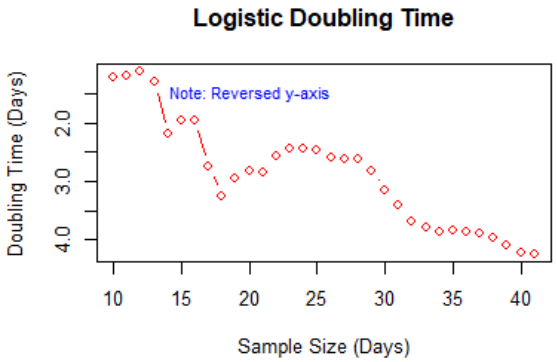
The code will automatically download the latest data from my github account.

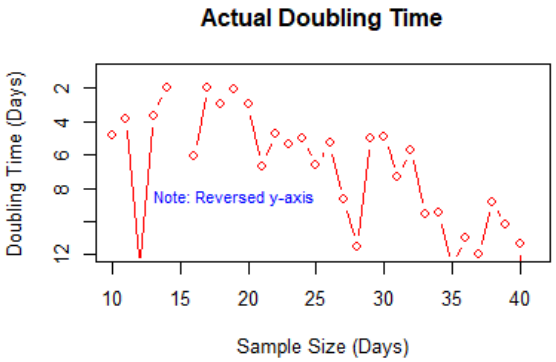
The chart below shows results based on *data from 17 March to 26 April inclusive*.




Estimated Inflection Date
Inflection (Day)
20
40
60
80
10
15
20
25
30
35
40
Sample Size (Days)


Area Under Logistic / Area Under Actual
Ratio
0.99
1.01
1.03
10
15
20
25
30
35
40
Sample Size (Days)


Logistic Doubling Time
Doubling Time (Days)
Note: Reversed y-axis
2.0
3.0
4.0
10
15
20
25
30
35
40
Sample Size (Days)


Actual Doubling Time
Doubling Time (Days)
Note: Reversed y-axis
2
4
6
8
12
10
15
20
25
30
35
40
Sample Size (Days)

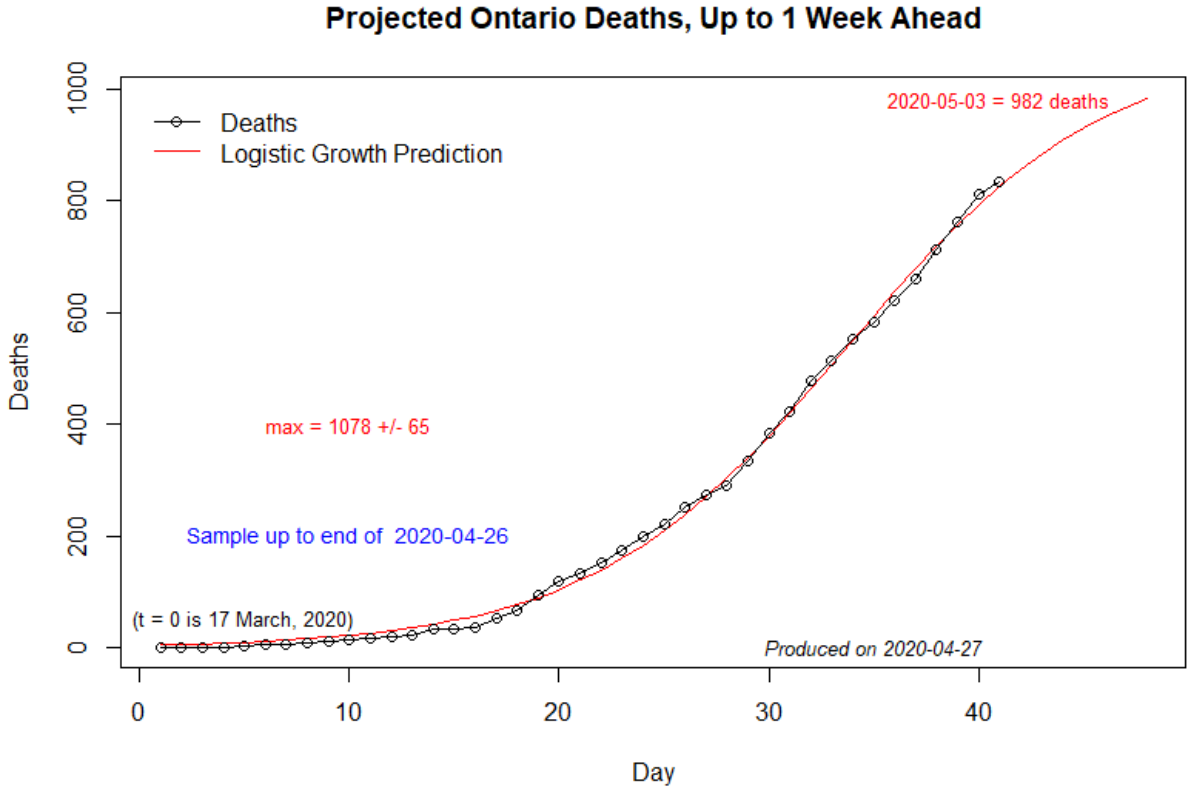

Projected Ontario Deaths, Up to 1 Week Ahead
Deaths
Logistic Growth Prediction
2020-05-03 = 982 deaths
max = 1078 +/- 65
Sample up to end of 2020-04-26
(t = 0 is 17 March, 2020)
Produced on 2020-04-27
Deaths
0
200
400
600
800
1000
0
10
20
30
40
Day

Table 4: Projected Covid-19 Deaths in Ontario

(Projections are in Red; Actual Values are in Brackets)

Sample end (projection made): 20 April

21 Apr	*22 Apr*	*23 Apr*	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*
619	651	681	709	733	755	774
[622]	[659]	[713]	[763]	[811]	[835]	

Sample end (projection made): 21 April

22 Apr	*23 Apr*	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*
653	683	711	735	758	777	794
[659]	[713]	[763]	[811]	[835]		

Sample end (projection made): 22 April

23 Apr	*24 Apr*	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*
686	714	740	762	782	800	815
[713]	[763]	[811]	[835]			

Sample end (projection made): 23 April

24 Apr	*25 Apr*	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*
728	756	781	804	824	841	857
[763]	[811]	[835]				

Sample end (projection made): 24 April

25 Apr	*26 Apr*	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*
773	802	828	851	871	889	905
[811]	[835]					

Sample end (projection made): 25 April

26 Apr	*27 Apr*	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*	*2 May*
820	849	875	899	920	938	955
[835]						

Sample end (projection made): 26 April

27 Apr	*28 Apr*	*29 Apr*	*30 Apr*	*1 May*	*2 May*	*3 May*
856	883	908	930	949	966	982