# Covid-19 Modelling Results, as at 25 April 2020
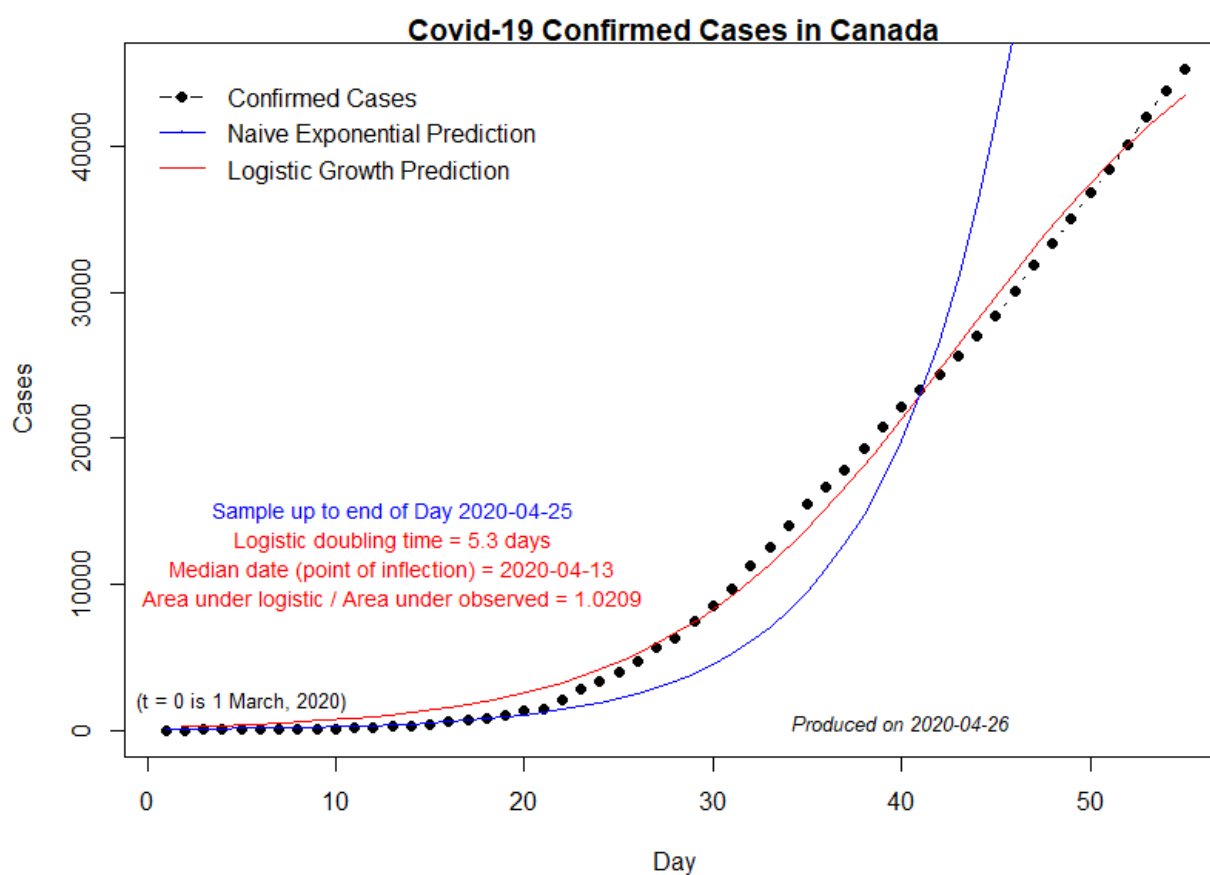
## CANADA

### 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.

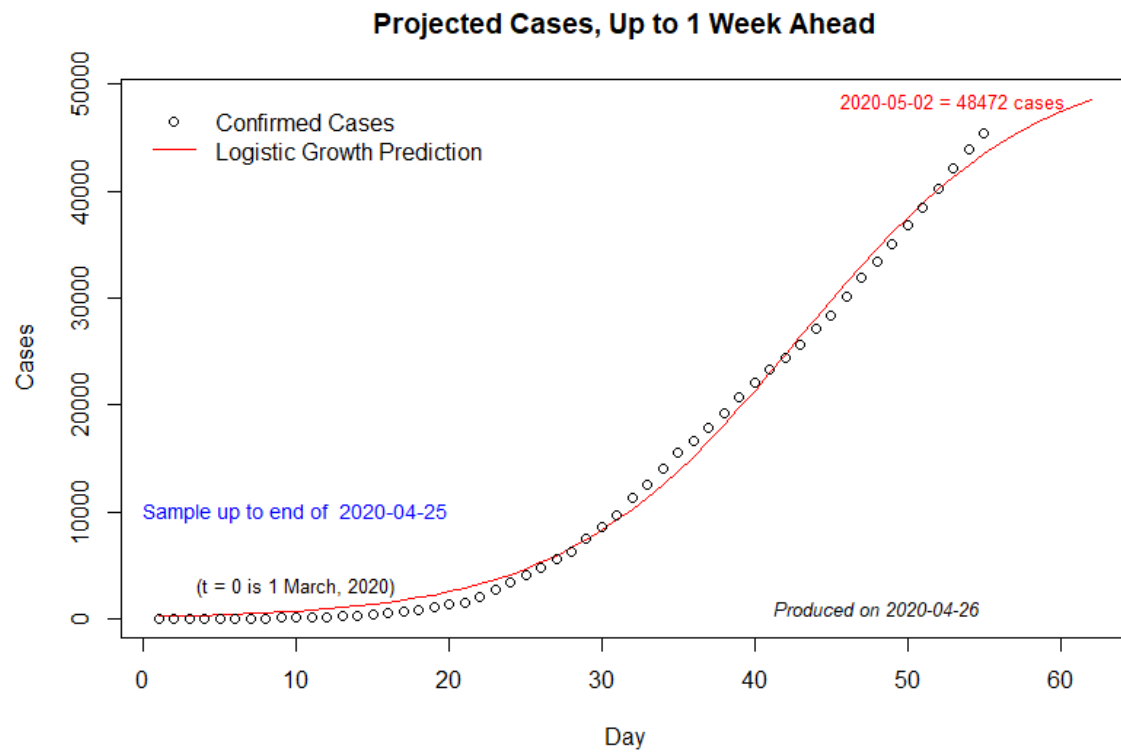The chart below shows results based on *data from 2 March to 25 April inclusive*.

## Estimated Inflection Date



## Area Under Logistic / Area Under Actual



## Logistic Doubling Time

Note: Reversed y-axis



## Actual Doubling Time

Note: Reversed y-axis



## Projected Cases, Up to 1 Week Ahead

○ Confirmed Cases
— Logistic Growth Prediction

2020-05-02 = 48472 cases

Sample up to end of 2020-04-25

(t = 0 is 1 March, 2020)

Produced on 2020-04-26

**Table 1: Projected Covid-19 Cases in Canada**

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

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**Sample end (projection made): 20 April**

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

**Sample end (projection made): 21 April**

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

**Sample end (projection made): 22 April**

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

**Sample end (projection made): 23 April**

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

**Sample end (projection made): 24 April**

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

**Sample end (projection made): 25 April**

| 26 Apr | 27 Apr | 28 Apr | 29 Apr | 30 Apr | 1 May  | 2 May  |
|--------|--------|--------|--------|--------|--------|--------|
| 44398  | 45253  | 46032  | 46739  | 47378  | 47954  | 48472  |

## 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.

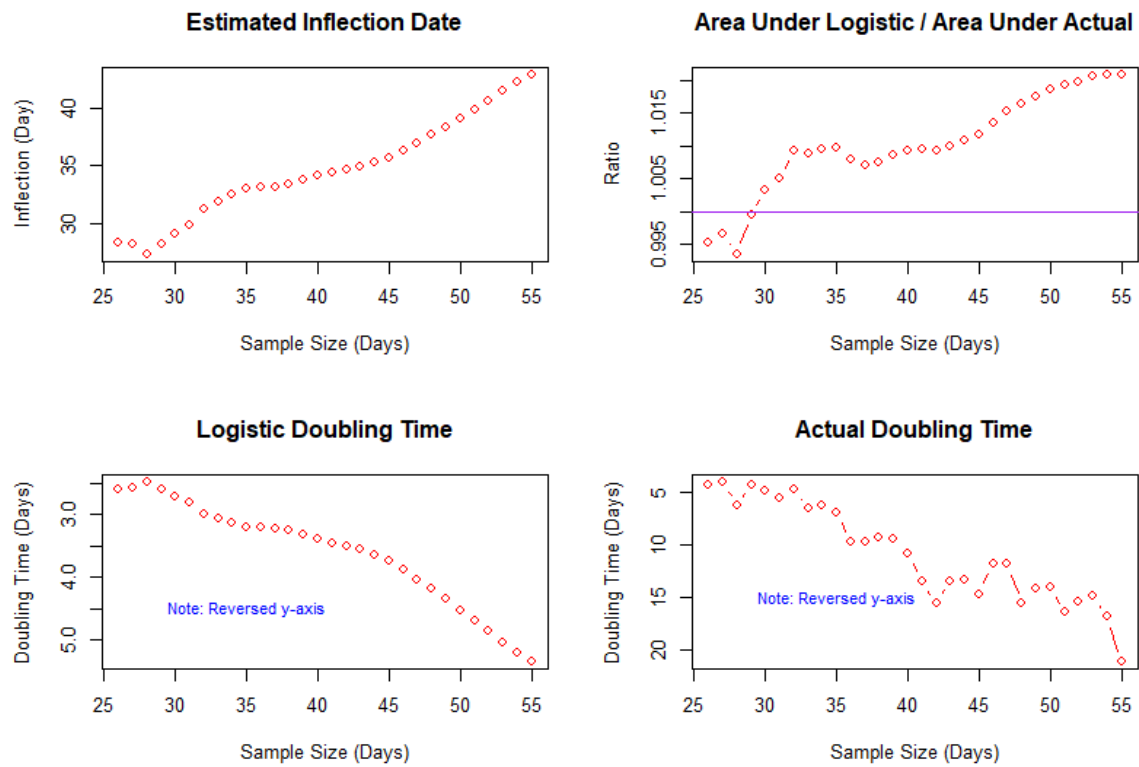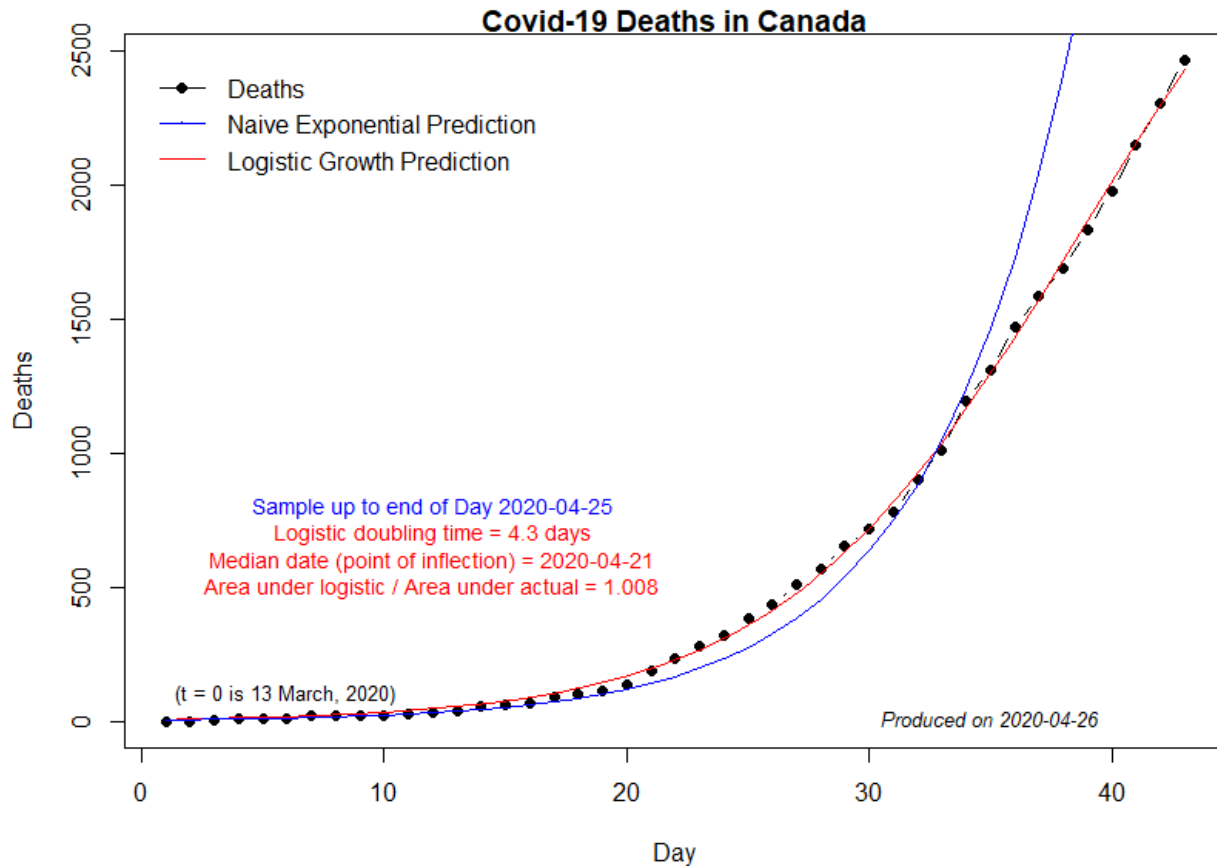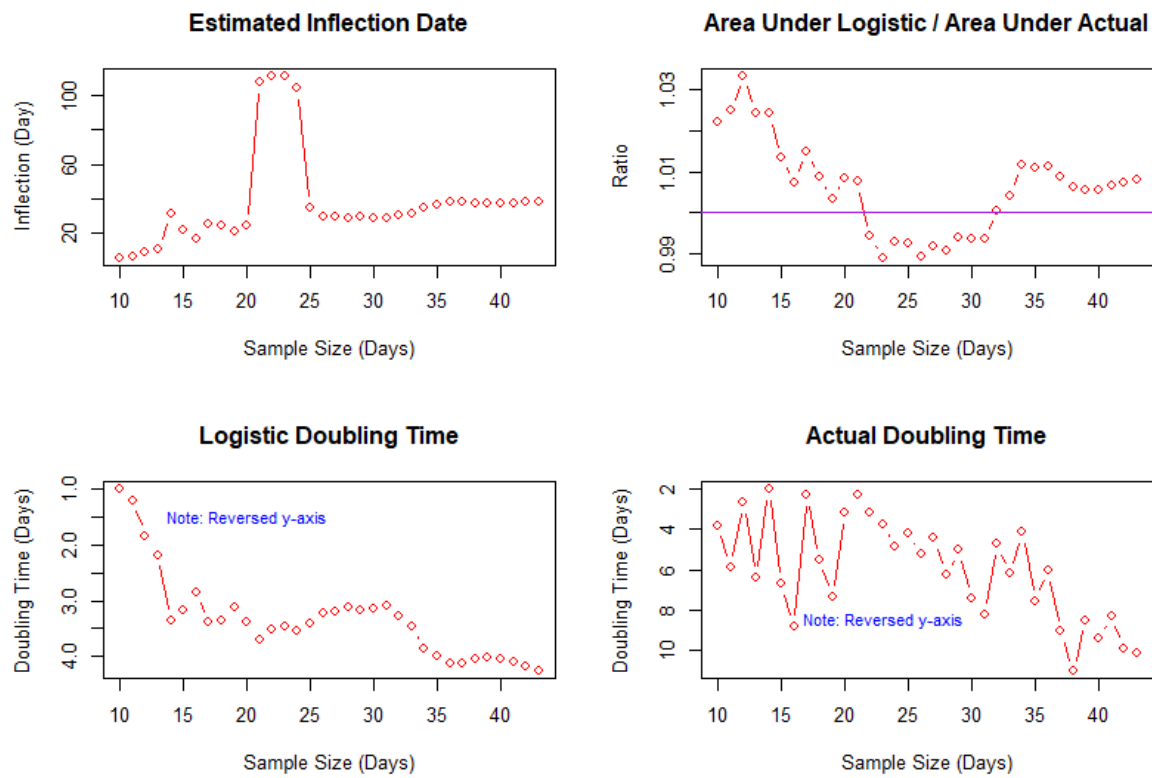The chart below shows results based on *data from 14 March to 25 April inclusive*.

## Estimated Inflection Date



## Area Under Logistic / Area Under Actual



## Logistic Doubling Time



Note: Reversed y-axis

## Actual Doubling Time



Note: Reversed y-axis

## Projected Deaths, Up to 1 Week Ahead



2020-05-02 = 3123 deaths

Deaths
Logistic Growth Prediction

Sample up to end of 2020-04-25

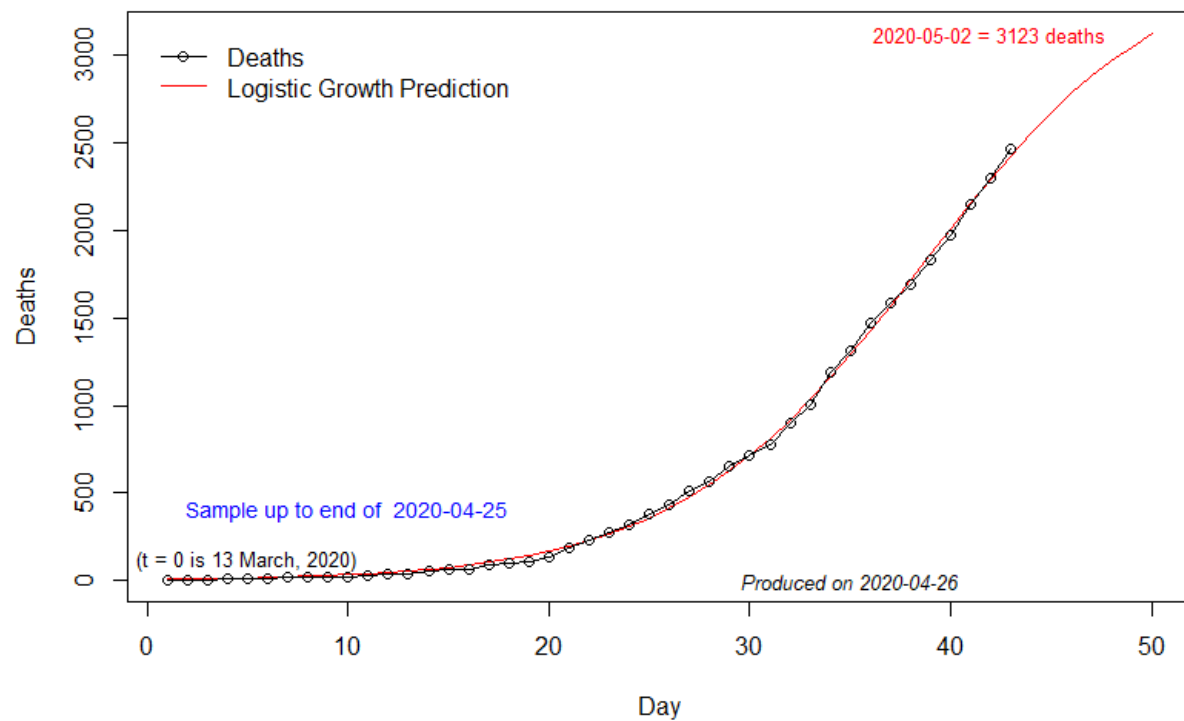(t = 0 is 13 March, 2020)

Produced on 2020-04-26

**Table 2: Projected Covid-19 Deaths in Canada**

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

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**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] | | |

**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] | | | |

**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] | | | | |

**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] | | | | | |

**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] | | | | | | |

**Sample end (projection made): 25 April**

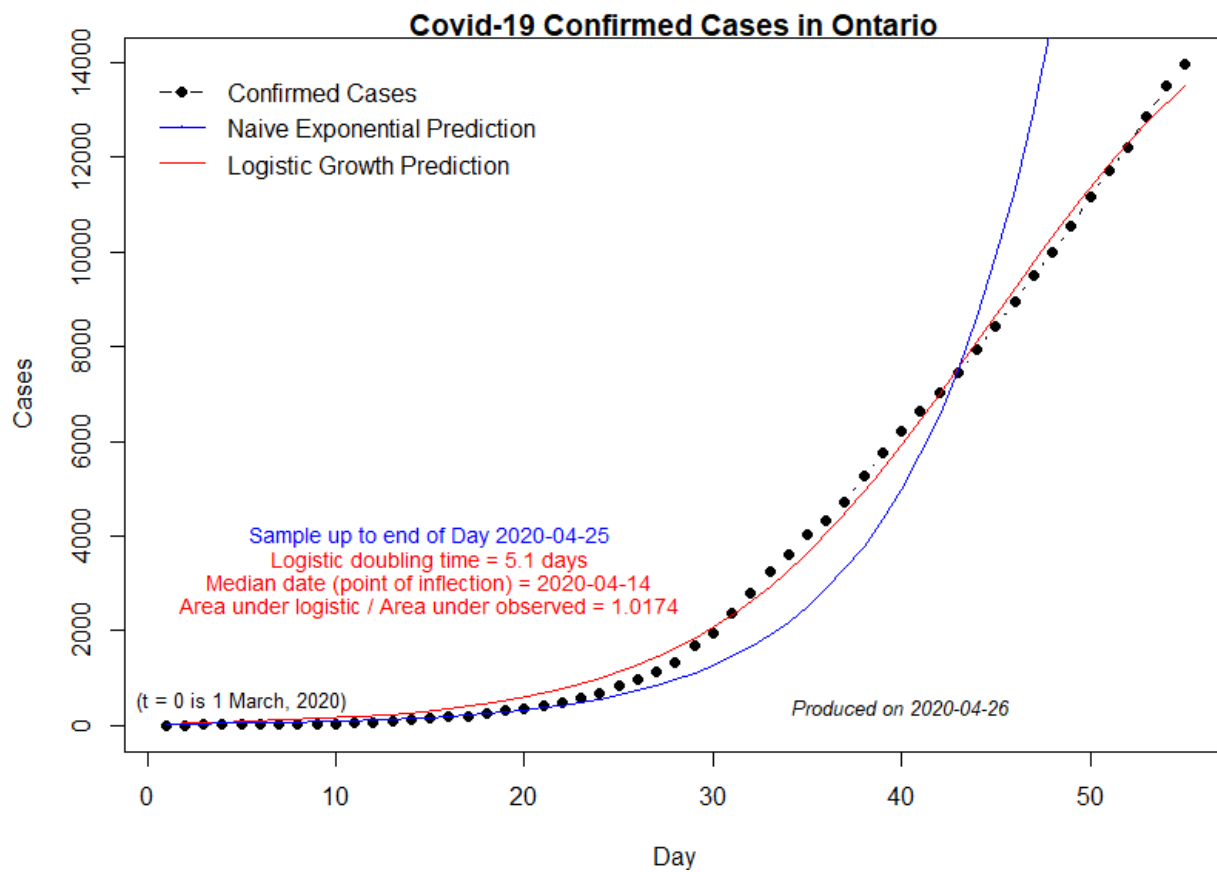| 26 Apr | 27 Apr | 28 Apr | 29 Apr | 30 Apr | 1 May | 2 May |
|--------|--------|--------|--------|--------|--------|--------|
| 2552 | 2670 | 2779 | 2878 | 2969 | 3050 | 3123 |

## 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 25 April inclusive*.
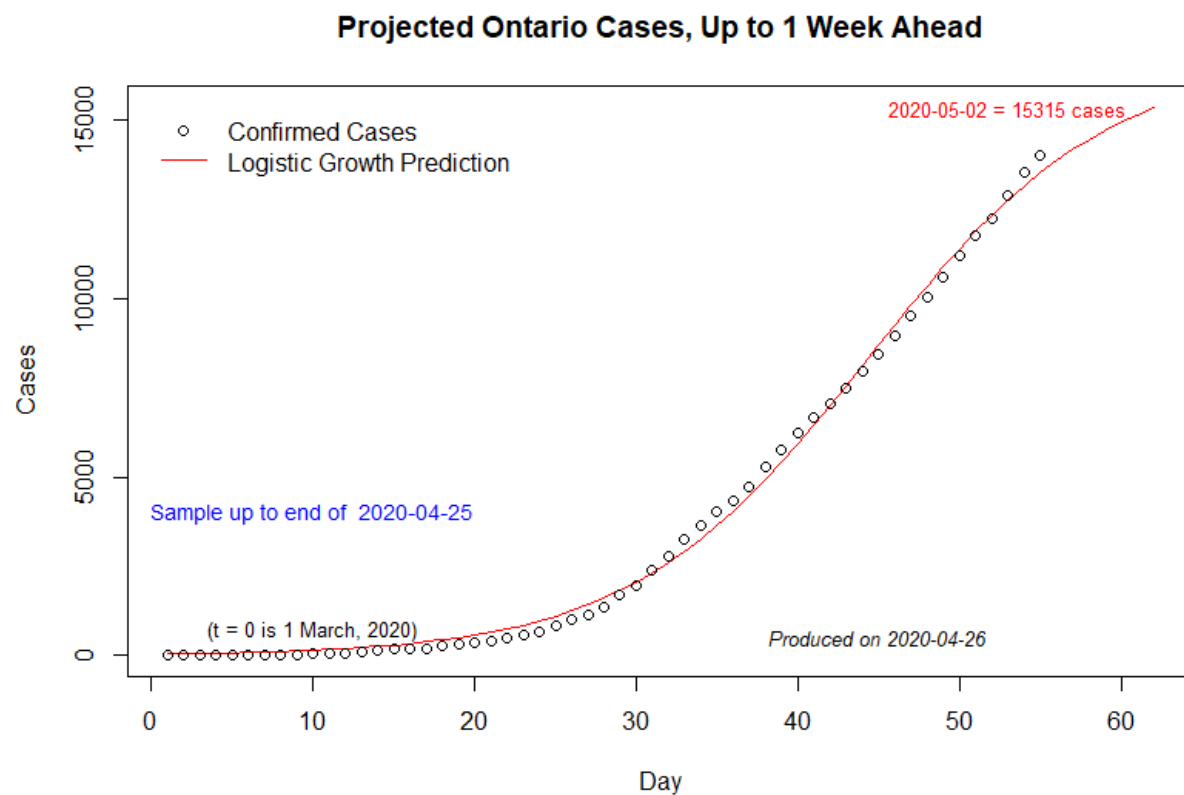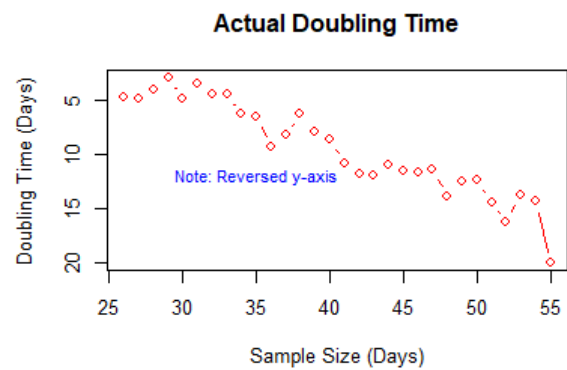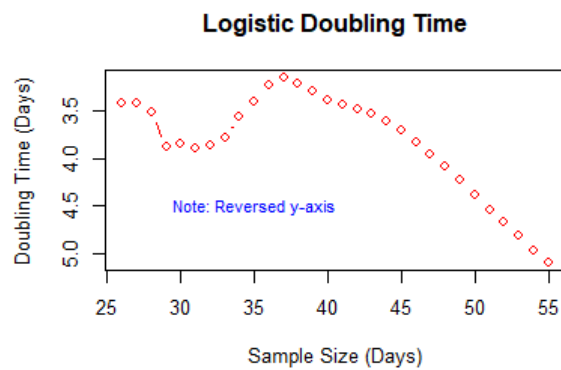
## Estimated Inflection Date



## Area Under Logistic / Area Under Actual



## Logistic Doubling Time

Note: Reversed y-axis



## Actual Doubling Time

Note: Reversed y-axis



## Projected Ontario Cases, Up to 1 Week Ahead



○ Confirmed Cases
— Logistic Growth Prediction

2020-05-02 = 15315 cases

Sample up to end of 2020-04-25

(t = 0 is 1 March, 2020)

Produced on 2020-04-26

## 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] | | |

**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] | | | |

**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] | | | | |

**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] | | | | | |

**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] | | | | | | |

**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 |

## 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 25 April inclusive*.
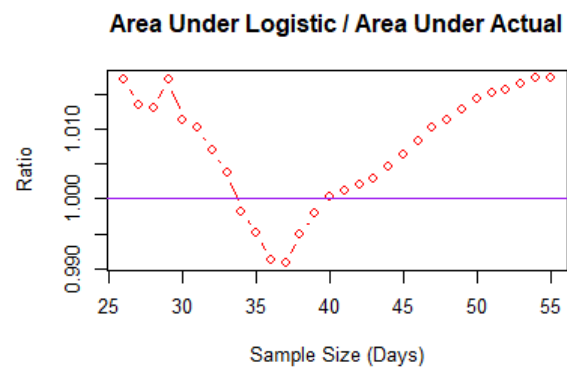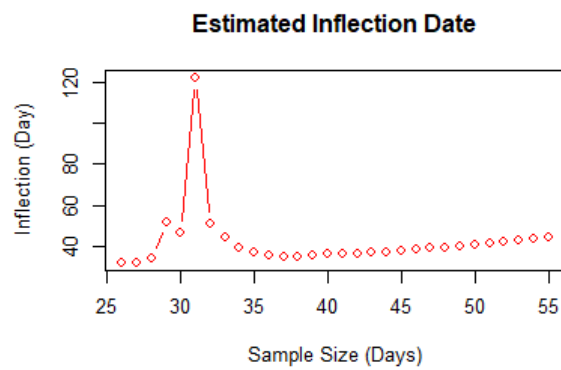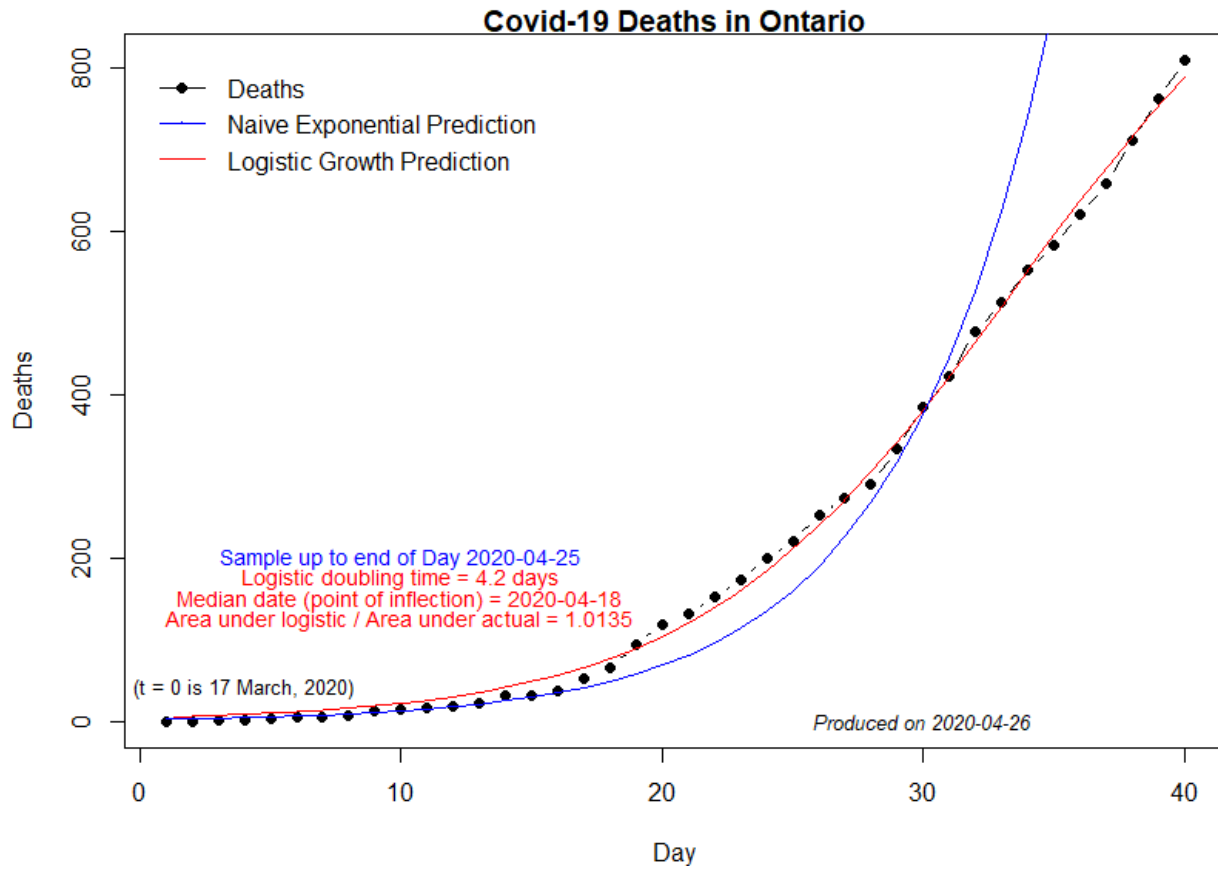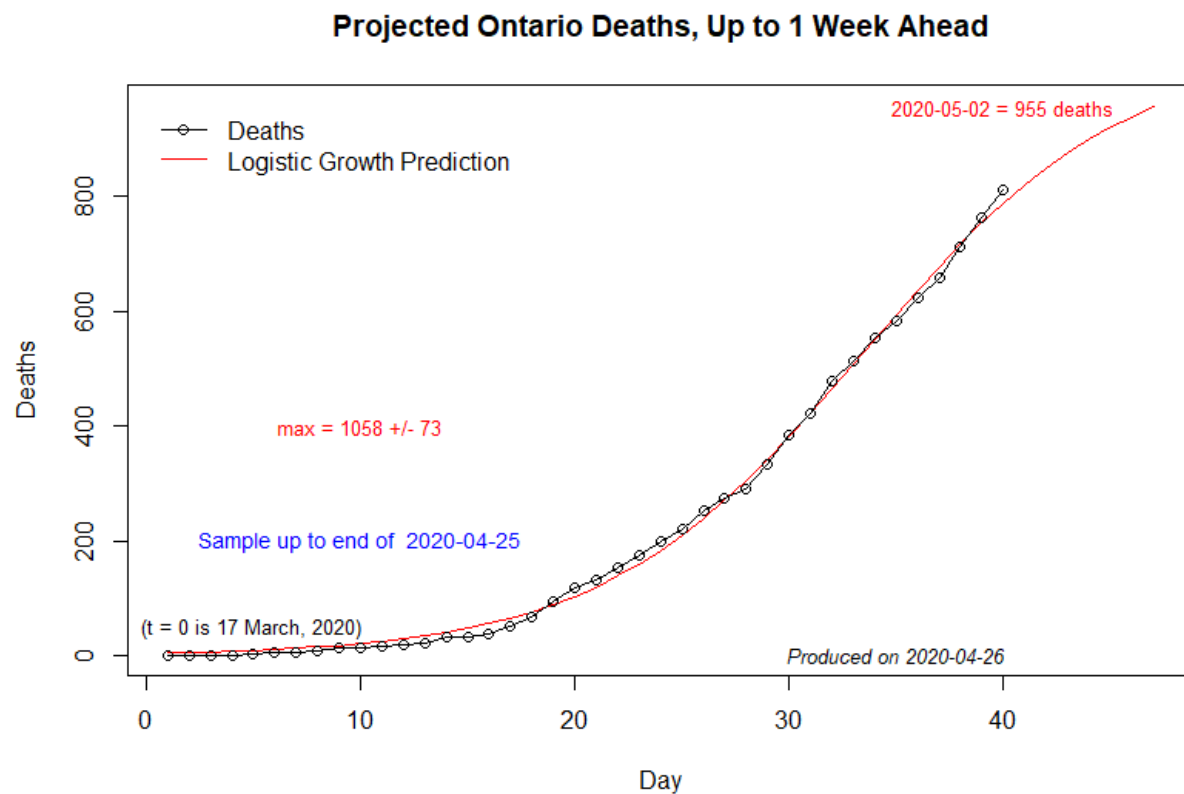
## Estimated Inflection Date



## Area Under Logistic / Area Under Actual



## Logistic Doubling Time



Note: Reversed y-axis

## Actual Doubling Time



Note: Reversed y-axis

## Projected Ontario Deaths, Up to 1 Week Ahead



2020-05-02 = 955 deaths

Deaths

Logistic Growth Prediction

max = 1058 +/- 73

Sample up to end of  2020-04-25

(t = 0 is 17 March, 2020)
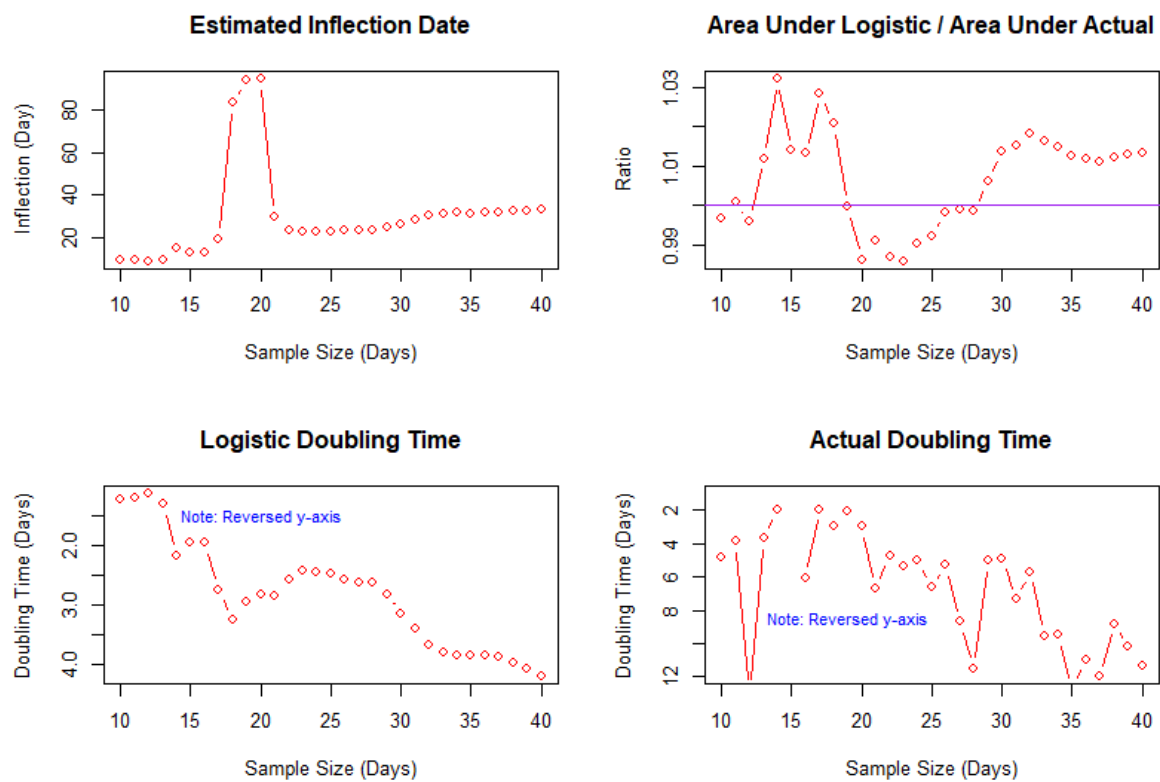
Produced on 2020-04-26

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**Table 4: Projected Covid-19 Deaths in Ontario**

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

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**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] | | |

**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] | | | |

**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] | | | | |

**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] | | | | | |

**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] | | | | | | |

**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 |