

# Corona (Covid-19) Forecast – No Lockdown Scenario

South Africa

2020-05-18

For more details on the forecast assumptions click [here](#).

# Methodology

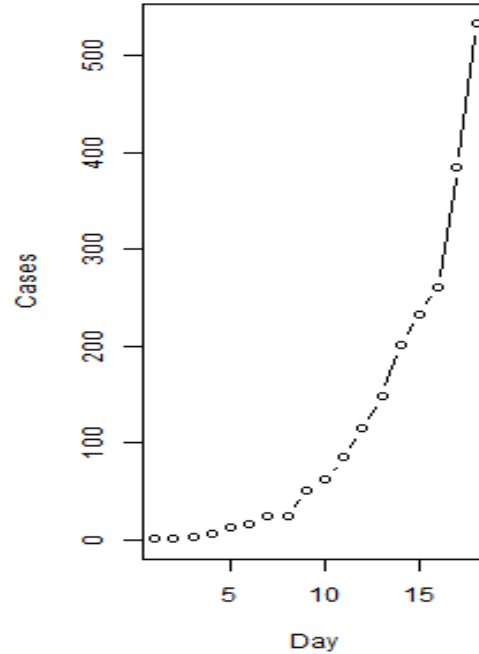
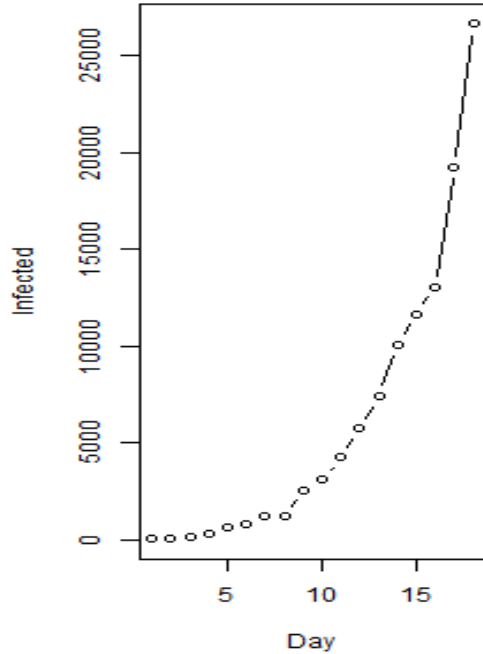
- The SIR epidemiological model is used to forecast active infections and cases. Forecast horizon is 365 days, counted from the date of the first case recorded in country.
- Only pre-lockdown data is used during model fit in order to forecast without the influence of a lockdown – the last 2 days prior to lockdown also being excluded.
- Automated pre-processing is conducted to estimate infections (and those in the infectious window) from official case data – this is informed by available sero survey data.
- Infection Fatality Rates (IFR) and Case Fatality Rates (CFR) are estimated from the latest data automatically – the denominator is adjusted for lag.

# Assumptions

- High end fatality scenario: infection to case ratio of 12.5 to 1. Assumes: 50% symptomatic, of which 16% present as cases – meaning 8% of total infections present as cases (12.5 to 1).
- Low end fatality scenario: infection to case ratio of 50 to 1. Assumes: 50% symptomatic, of which 4% present as cases – meaning 2% of total infections present as cases (50 to 1).
- **WARNING:** Early sero-survey data is used to estimate infection. Some studies have suffered from sampling and test kit issues. Sero-survey data may not be relevant to your country. *For more detail please see the assumptions slide deck.*
- The first case occurred on 06/03/2020 and lockdown occurred on 27/03/2020, 21 days later.
- For more details on the forecast assumptions click [here](#).

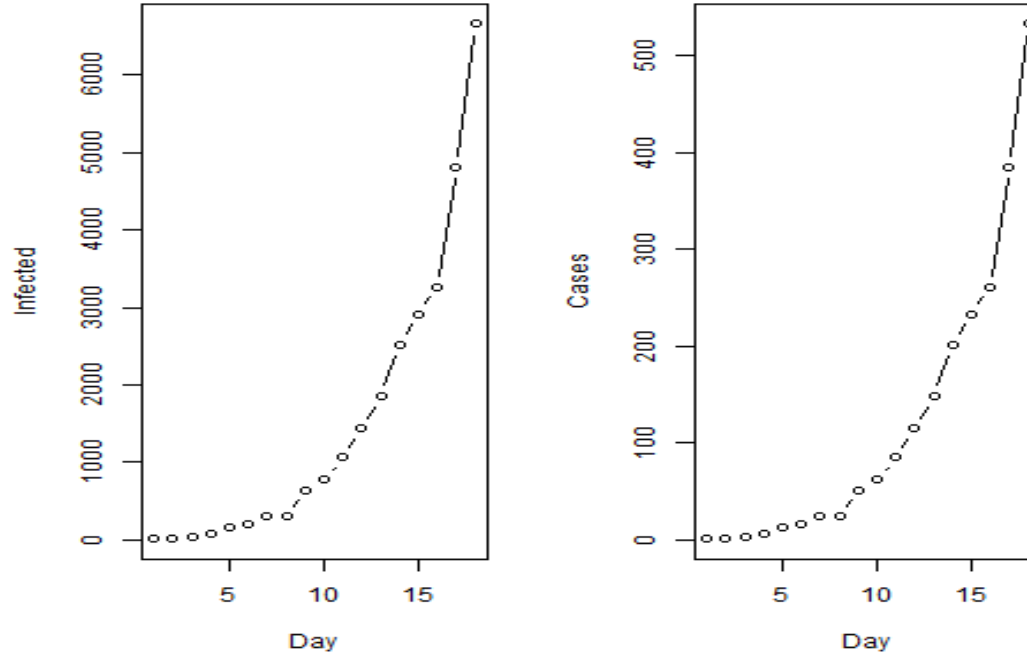
# Past infections and reported cases (low end fatality)

Past infections and reported cases (lower scenario)



# Past infections and reported cases (high end fatality)

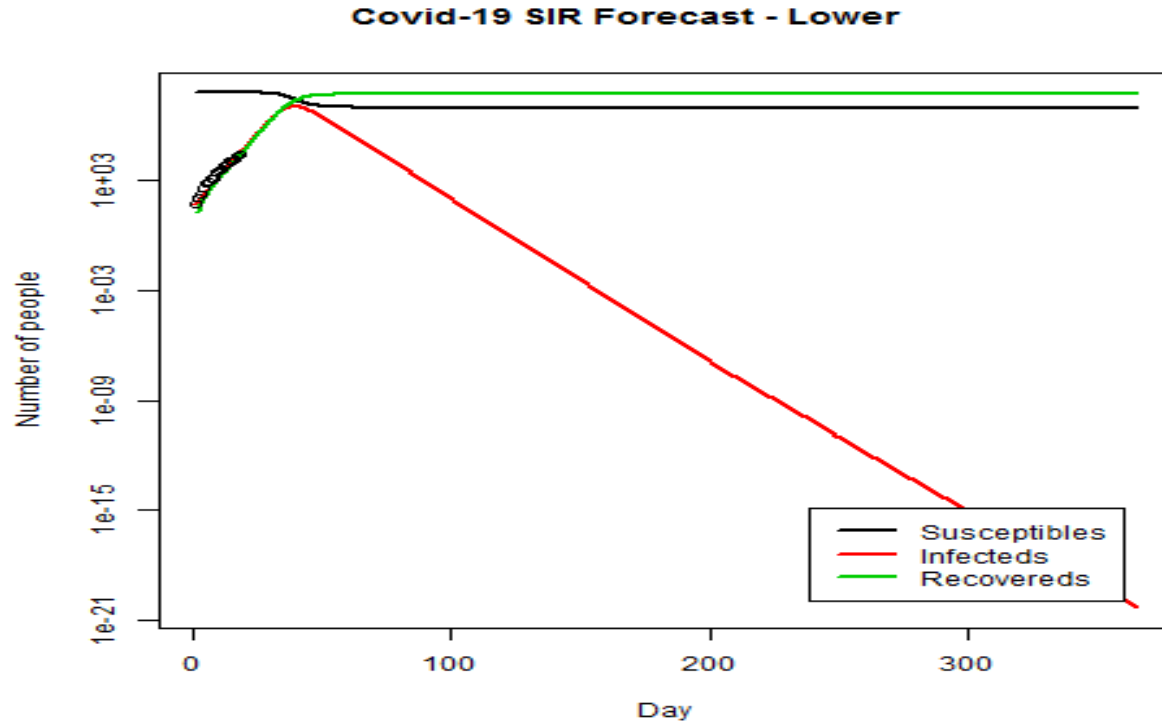
Past infections and reported cases (upper scenario)



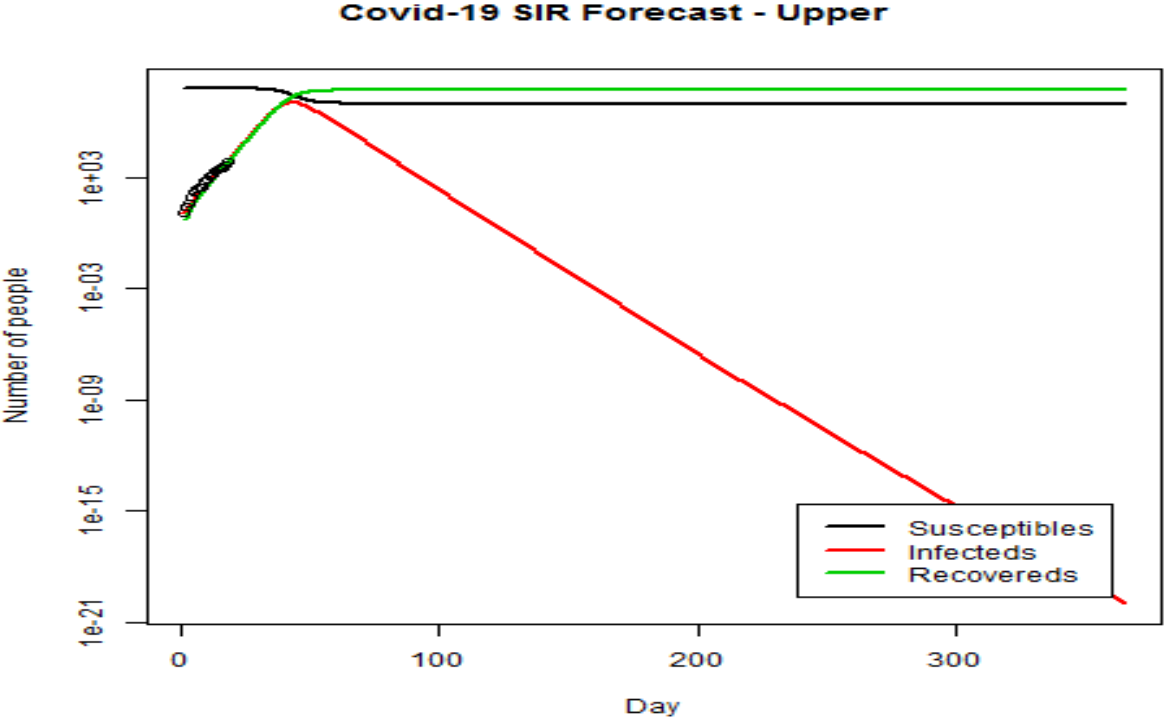
## Forecast - 365 days\*

Descriptors	Lower	Upper
Total cases	310,219	1,240,642
Single worst day (new cases peak)	21,385	85,340
Total infections	15,510,972	15,508,019
Total fatalities	12,074	48,287
IFR %	0.078	0.31
CFR %	3.9	3.9
Reproduction number	2.2	2.2
Infectious window	10	10
Fit period	18	18
IC	50	12.5
Beta	0.69	0.69
Gamma	0.31	0.31

# Corona Forecast - 365 day - Lower Boundary (Log Scale)



# Corona Forecast - 365 day - Upper Boundary (Log Scale)





# Forecast – New Daily Case Milestones - Upper Boundary

Milestone	New
30th Day	4,796
60th Day	6,020
90th Day	13
120th Day	0
150th Day	0

# Forecasts by country

To see forecast slide decks for other countries, click [here](#).

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