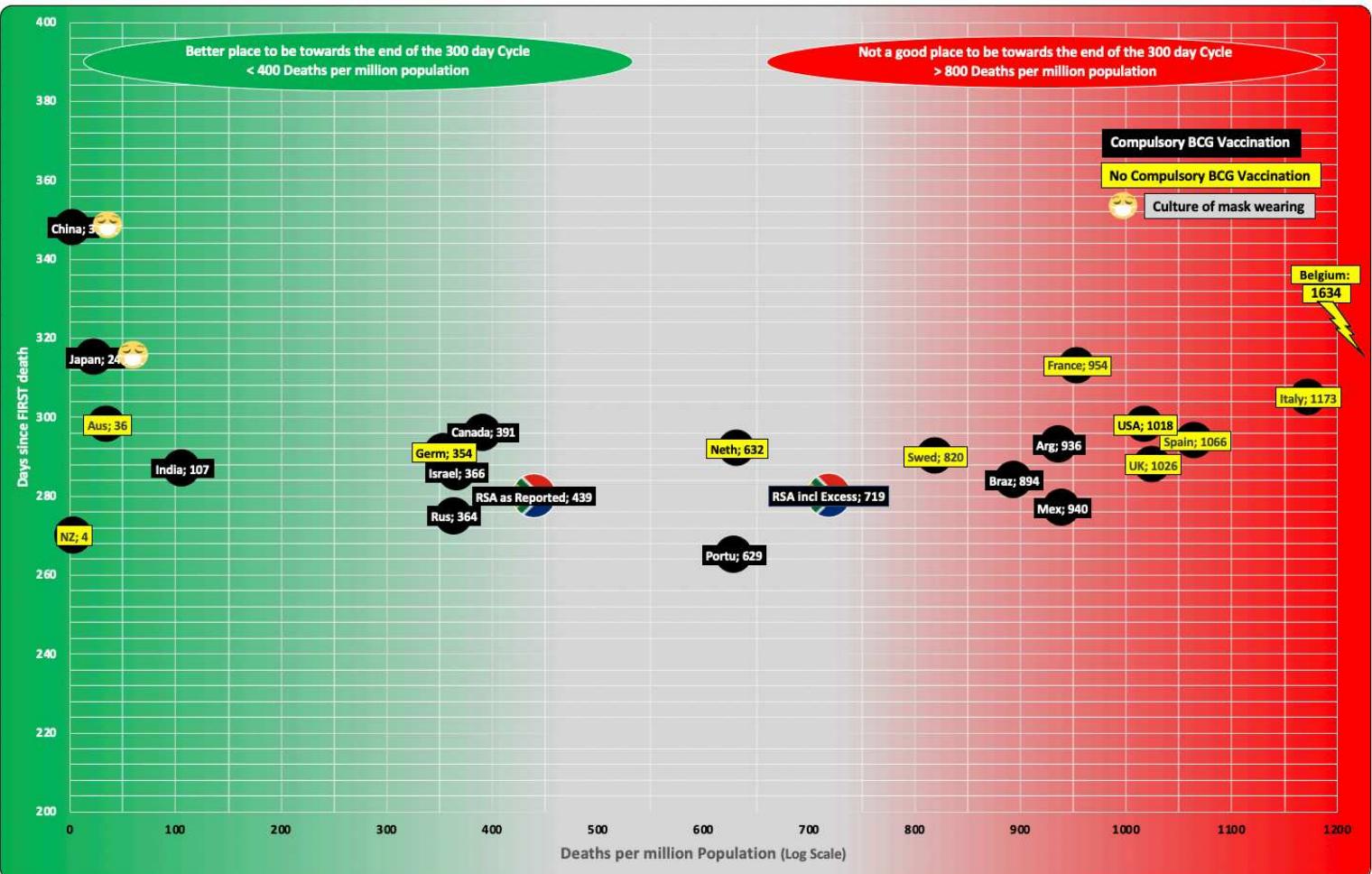
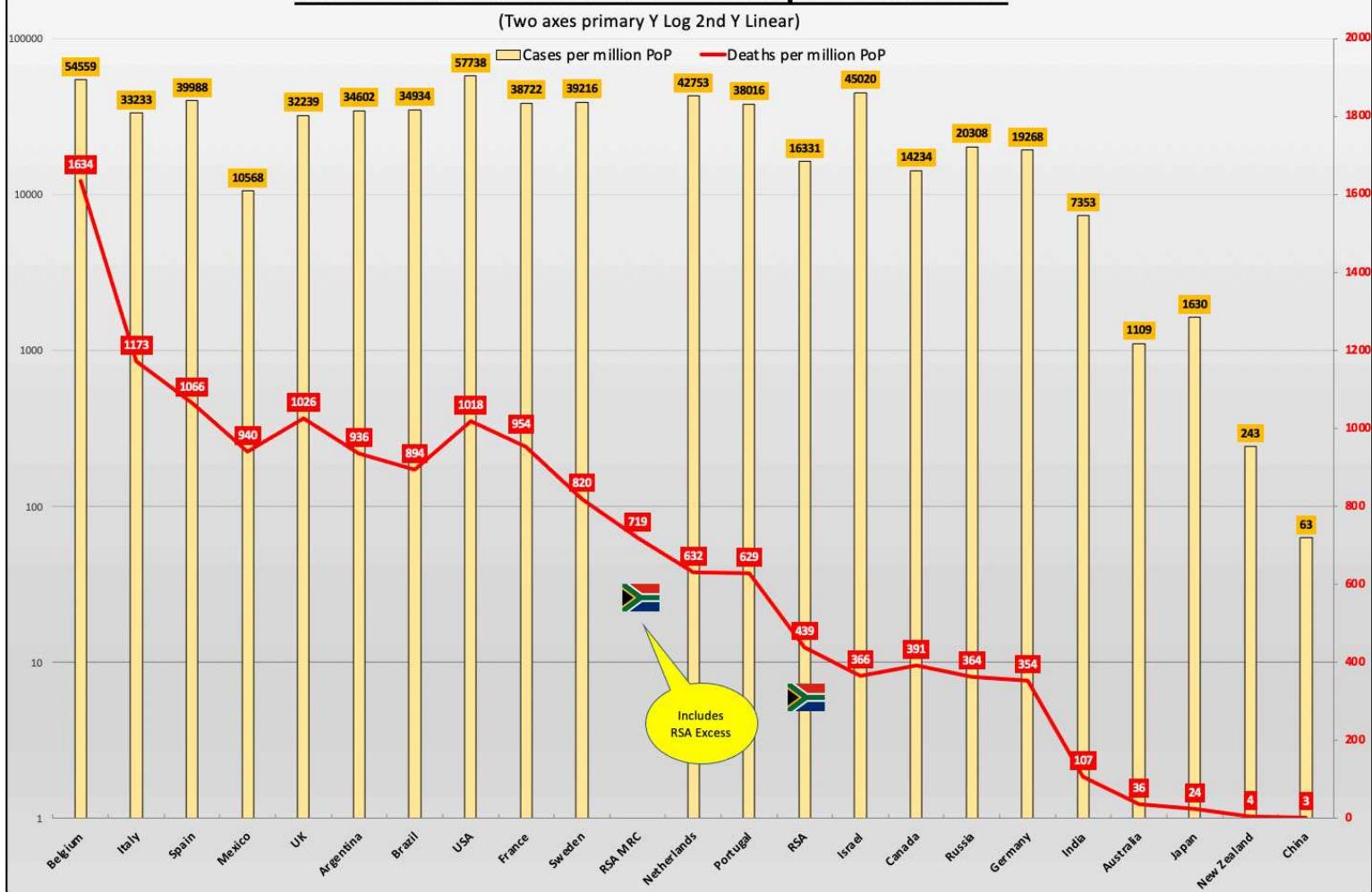


Covid Reported Deaths per million Population & Days since 1st Covid Death

Page 2



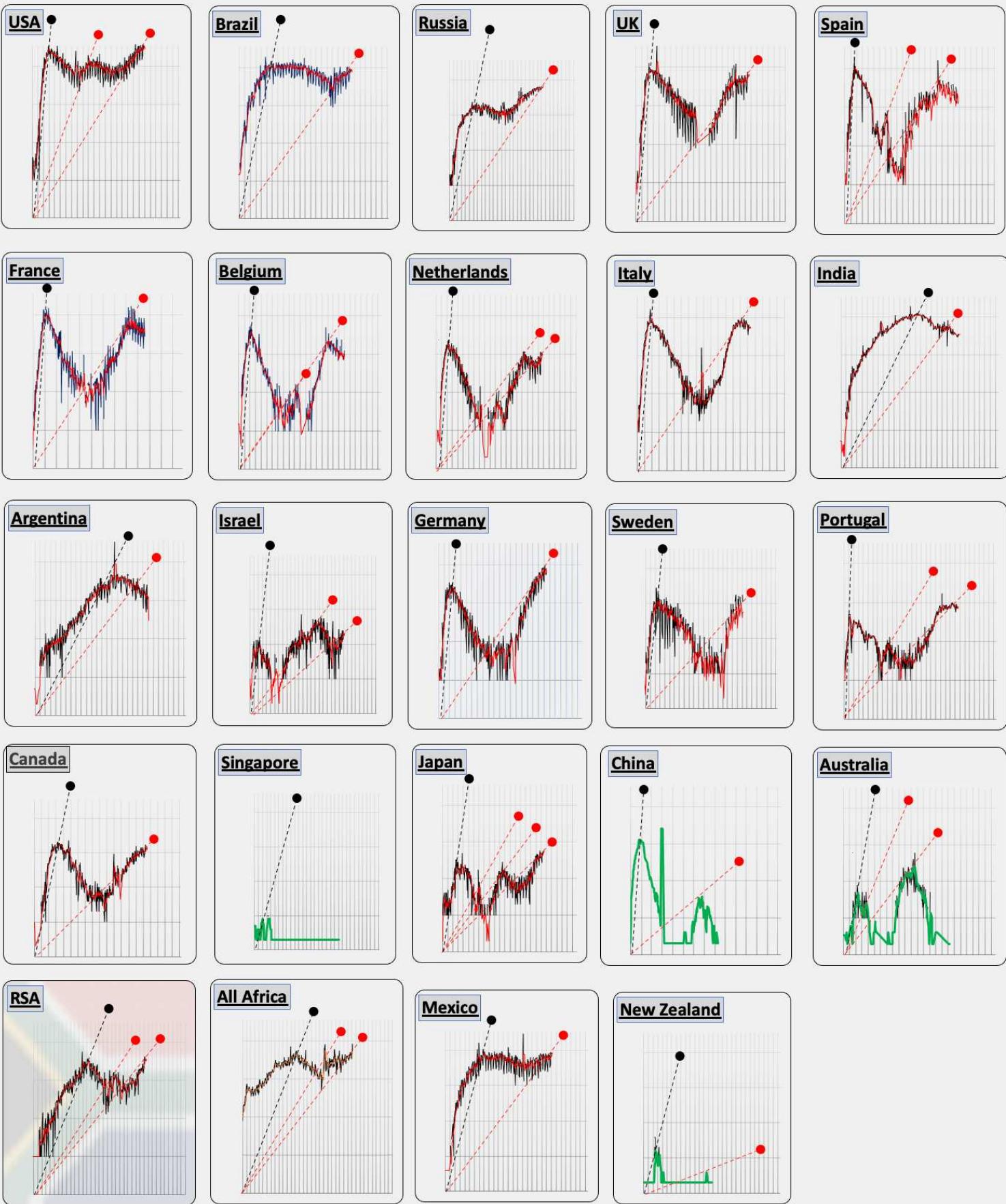
Current Cum Cases & Cum Deaths per million PoP

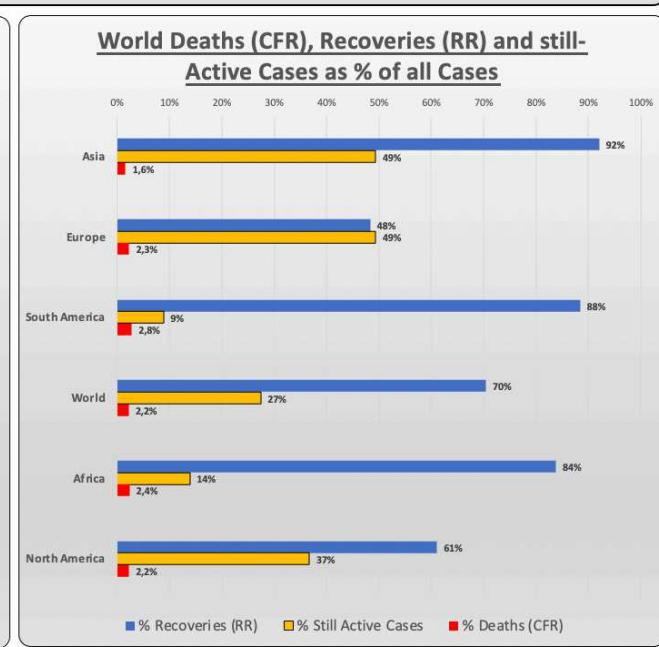
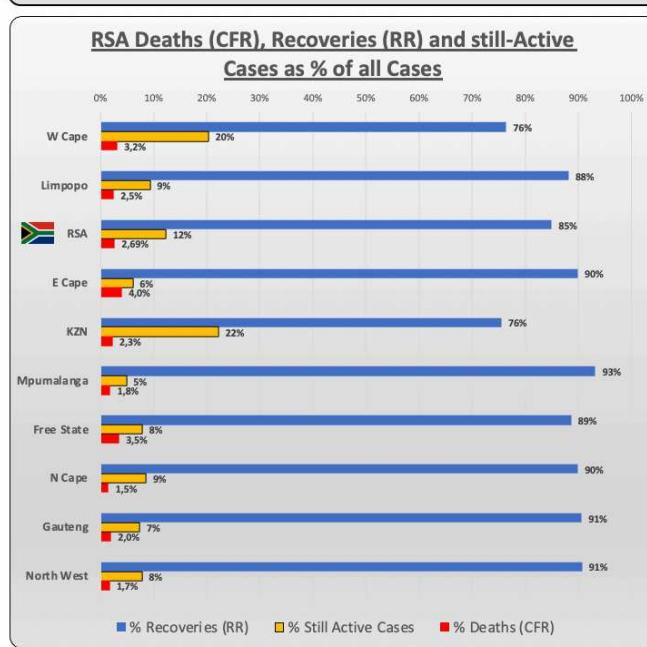
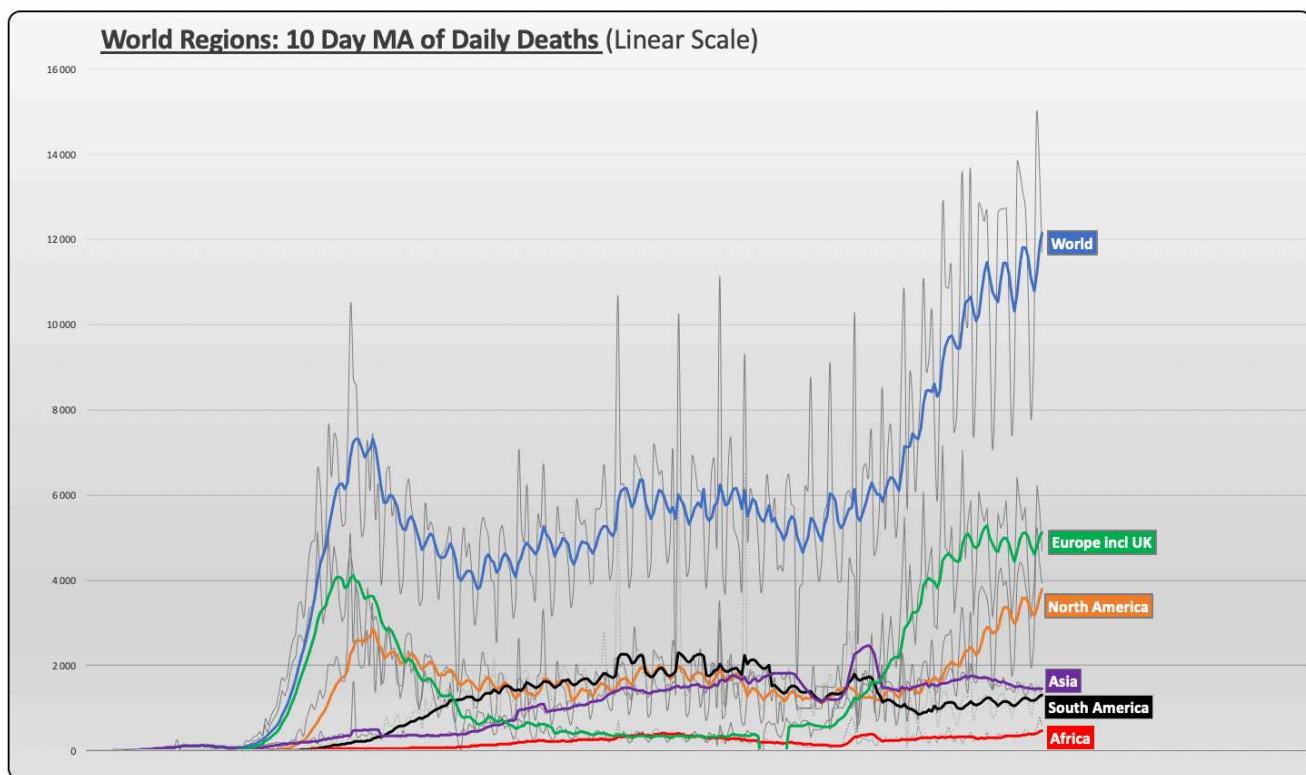
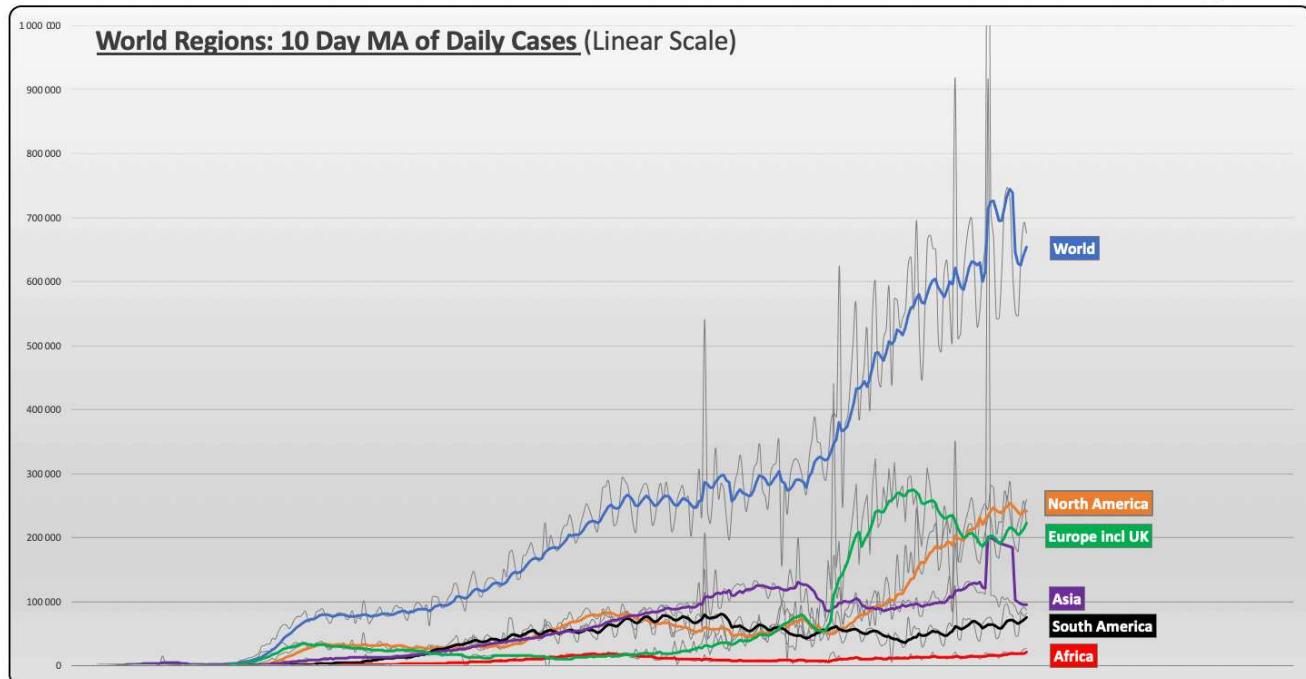


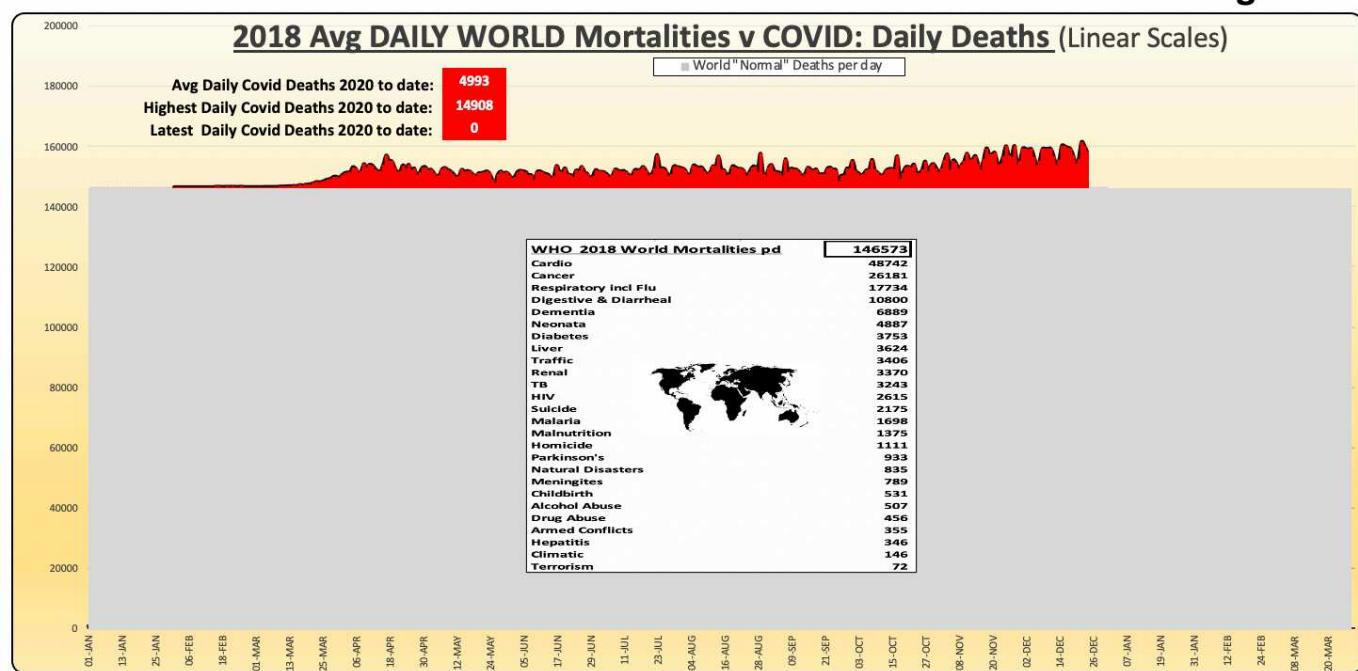
Daily Deaths Curves & Rate of Onset/next Wave "Inclinometers"

5 day MA Trendline from date of 1st death (all on Log Scale)

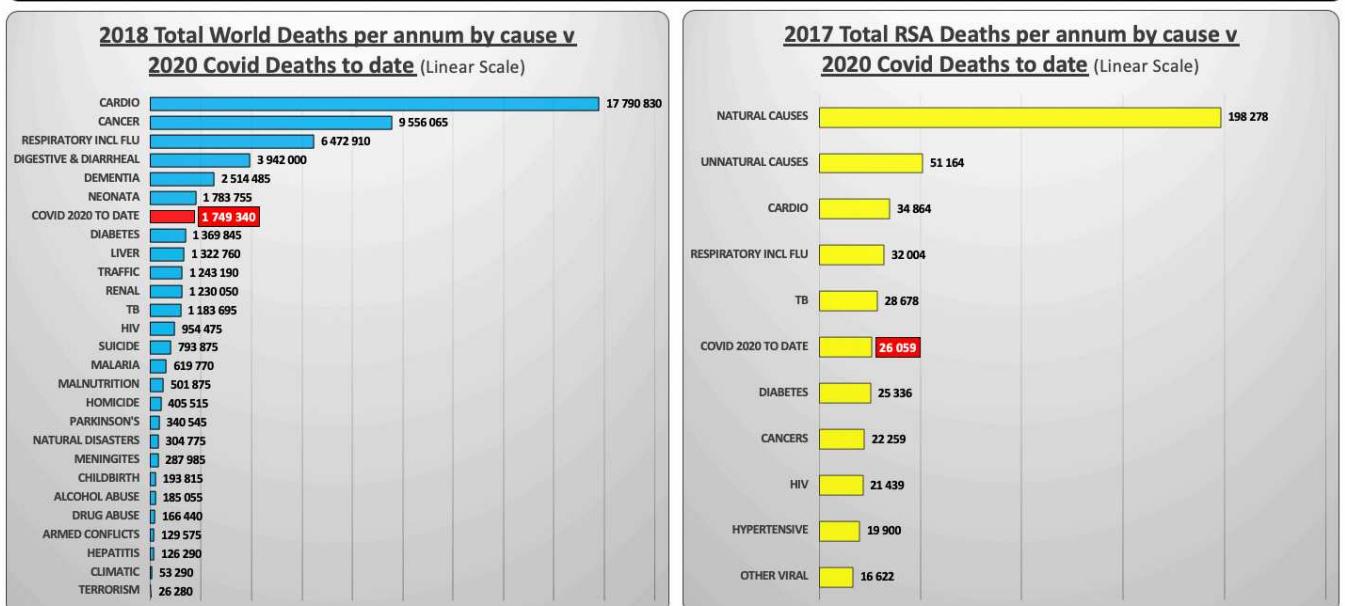
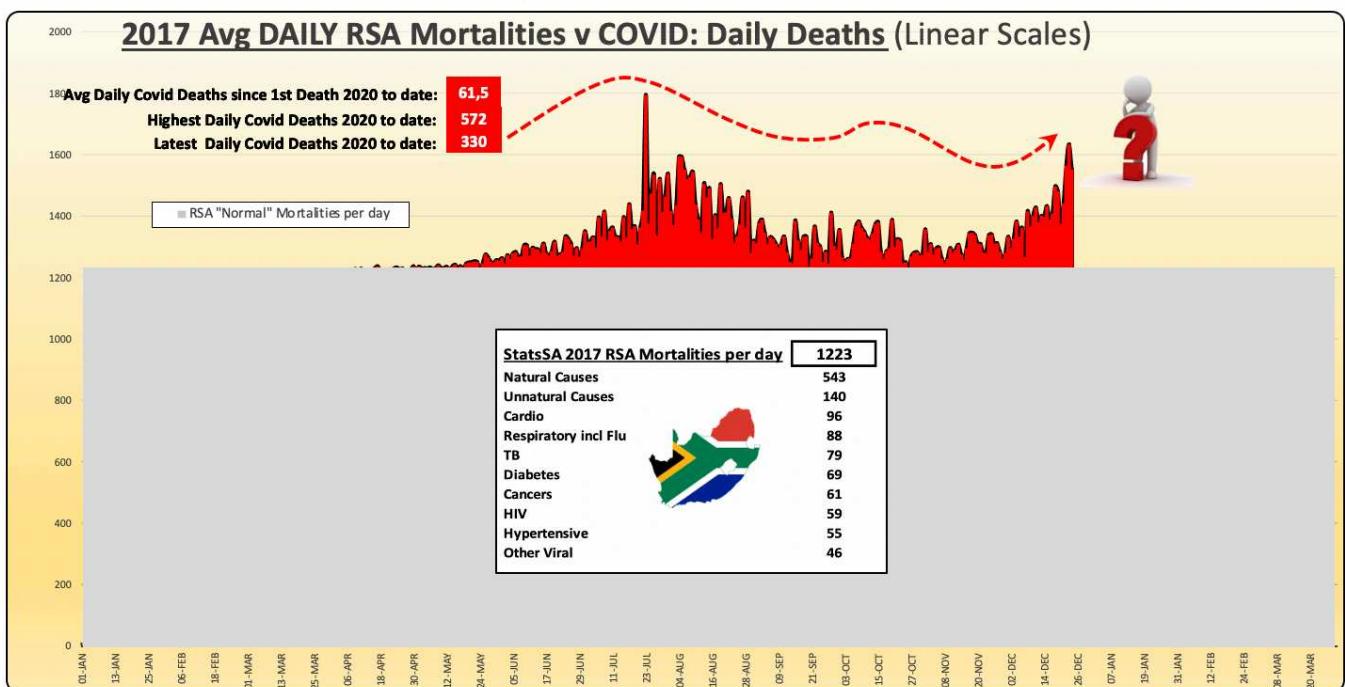
- Peaked but spiking again
- Passed peak but could rebound OR next wave
- Well past peak, unlikely to rebound
- Onset/1st wave
- 2nd & 3rd waves







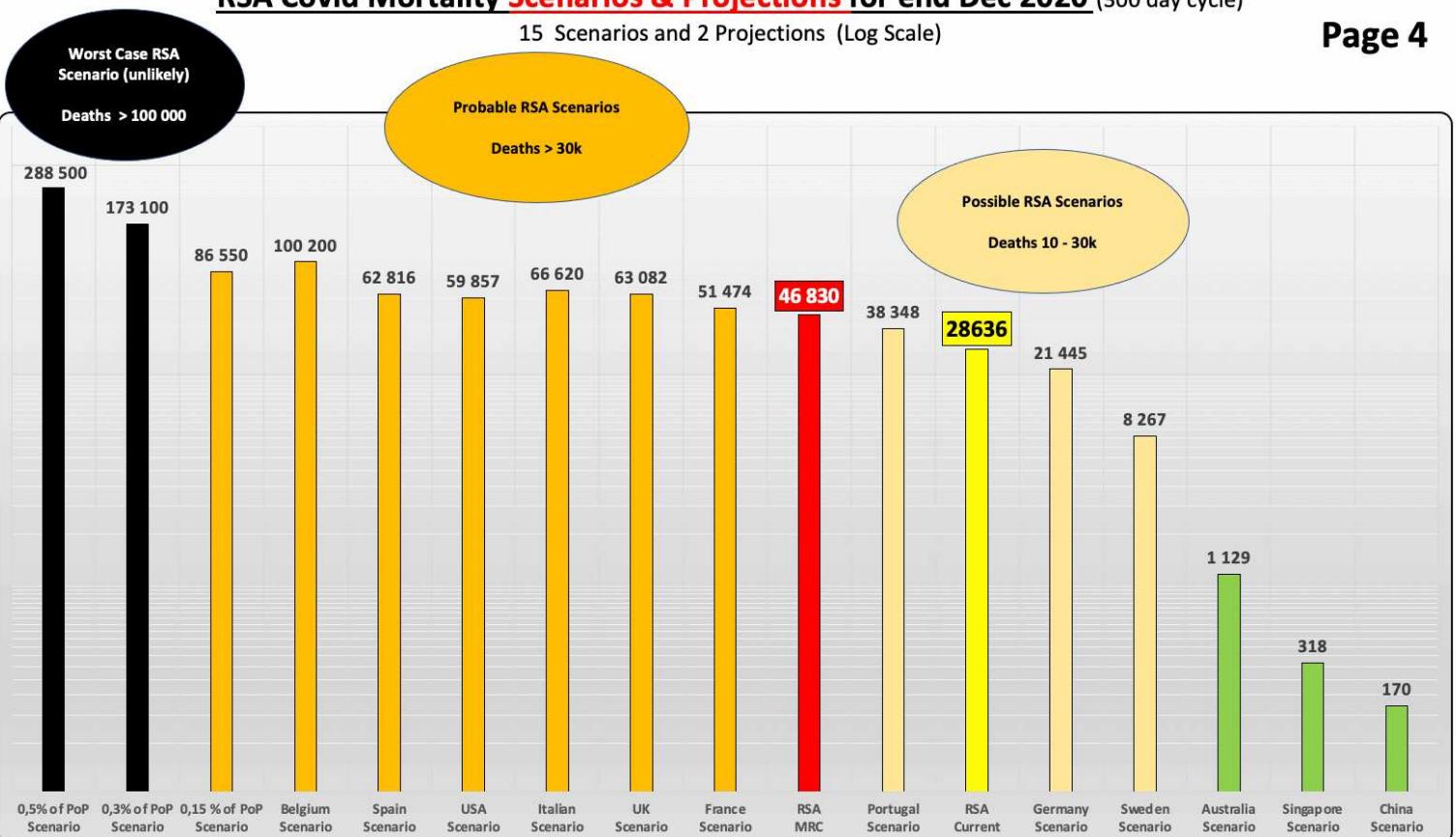
The two graphs WORLD (above) and RSA (below) attempt to put the number of Covid Deaths into some sort of perspective graphically.
The big GREY blocks are TOTAL Daily Avg Deaths from ALL causes over a full calendar year.
The RED area/lines on top of the Grey blocks are the INCREMENTAL Actual Daily Deaths due to Covid.
Obviously some of the Covid Deaths will "overlap" with the "normal" Deaths due to comorbidities.



RSA Covid Mortality Scenarios & Projections for end Dec 2020 (300 day cycle)

15 Scenarios and 2 Projections (Log Scale)

Page 4



Key:

All Scenarios duly adjusted for population size and for the different timelines into the deemed 300 day pandemic cycle.

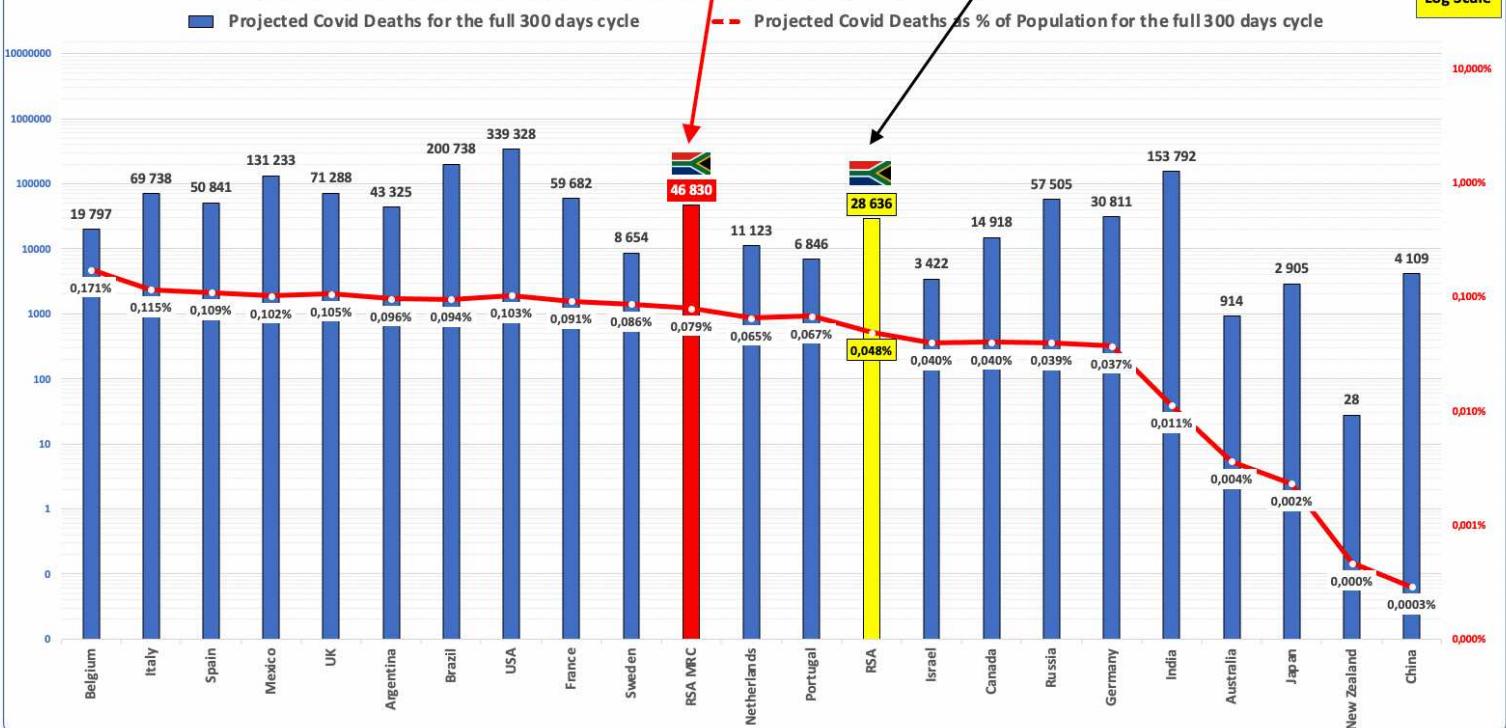
This projection uses the SA Medical Research Council data on "Excess Deaths". The assumption is that 90% of their reported Excess Deaths are probably due to Covid. The ratios are updated bi-weekly by the MRC but I apply these ratios to the official stats on a daily basis for this projection.

This number is simply the avg daily Deaths as reported to date x 300 (deemed cycle).

Projected Deaths by end Dec 2020 per country and % Deaths per Country Populations

at current officially reported Death Numbers as reported by WHO (no "Excess" deaths)

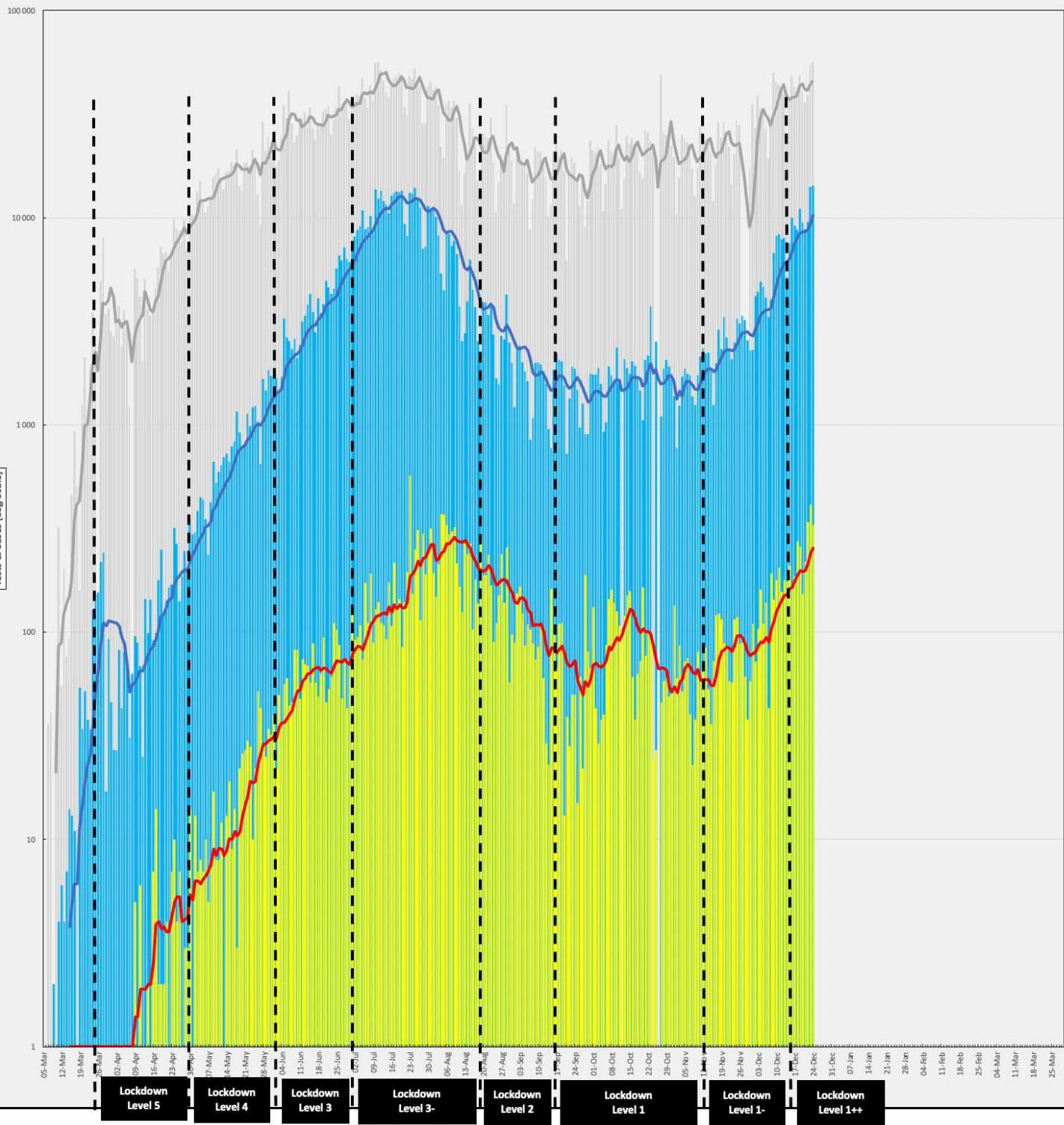
Log Scale



Note: Above Mortality %'s are overall projected mortality of the populations (PMR), NOT deaths of only those infected (CFR).

RSA Daily Testing v Daily Cases v Daily Deaths 5 Day MA log scales

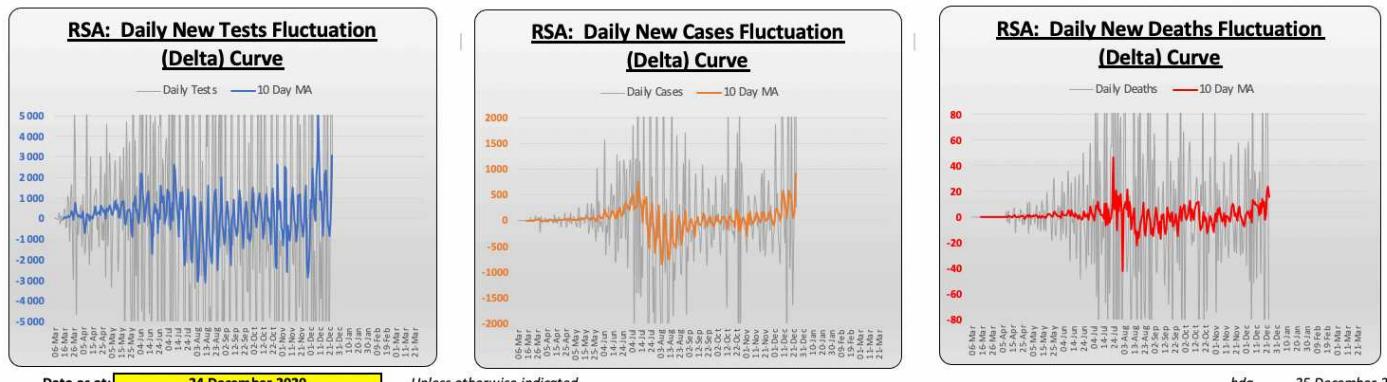
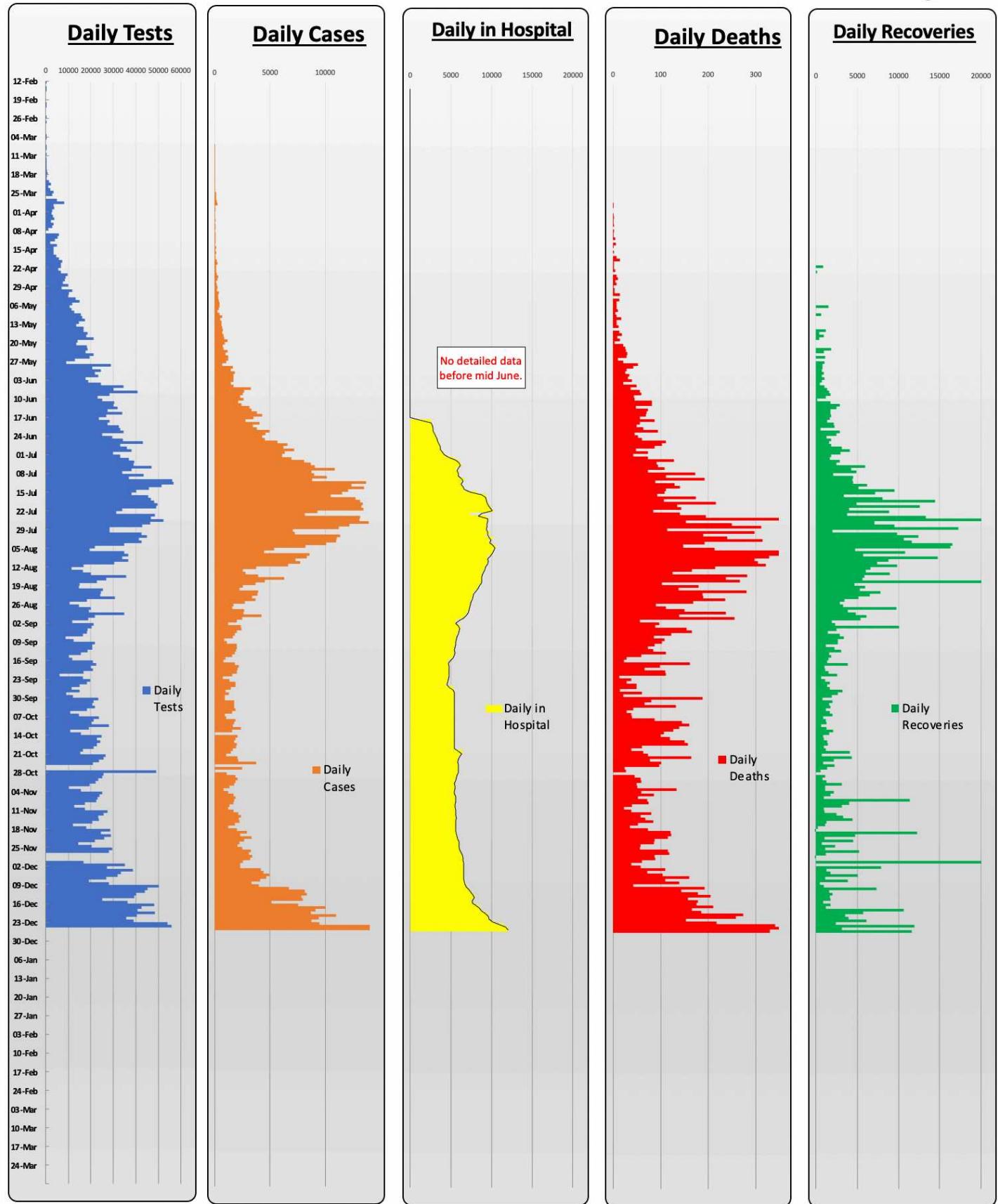
Daily Tests Daily Cases Daily Deaths



Data as at: 24 December 2020

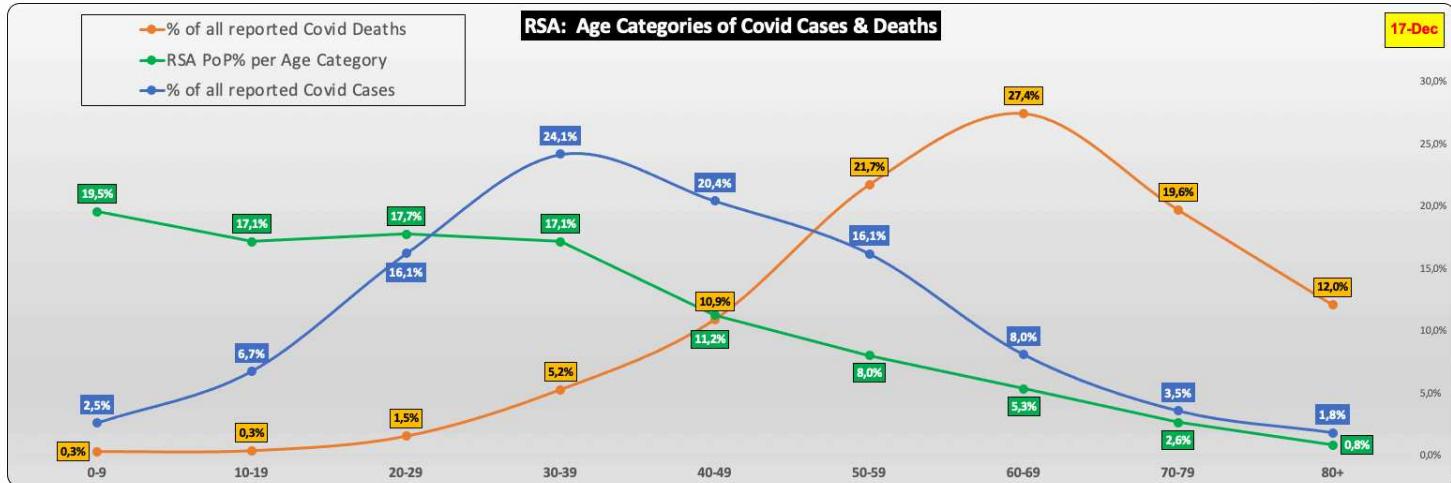
Unless otherwise indicated

hdg 25 December 2020



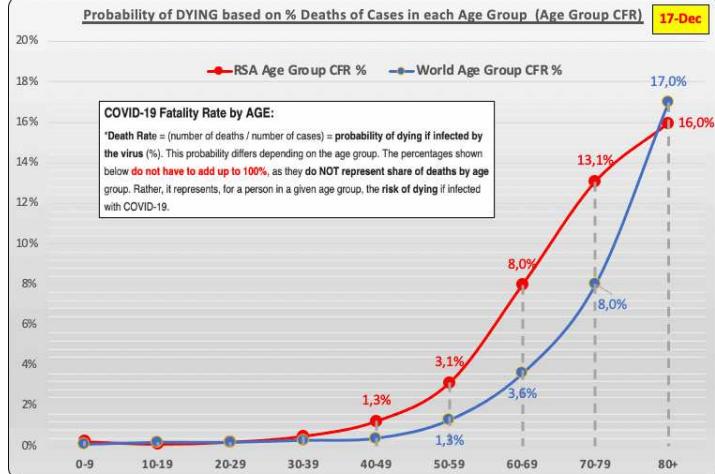
RSA: Age Categories of Covid Cases & Deaths

17-Dec



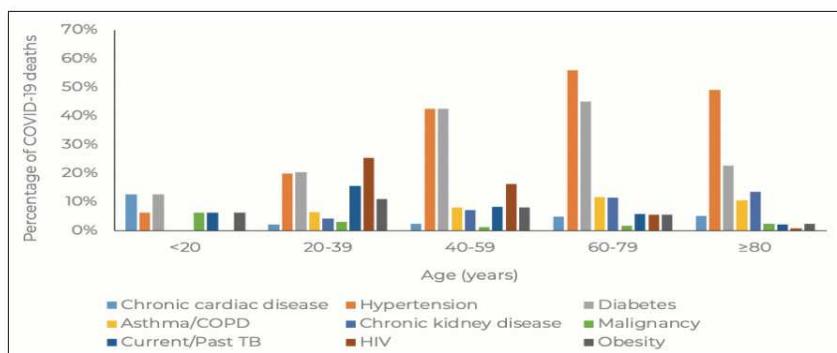
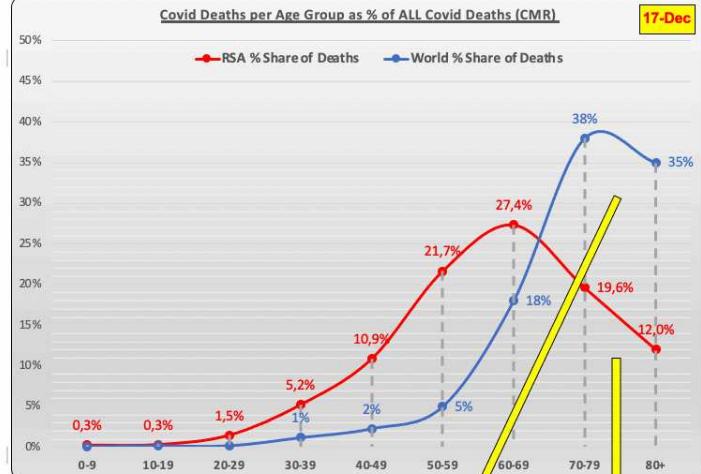
Probability of DYING based on % Deaths of Cases in each Age Group (Age Group CFR)

17-Dec



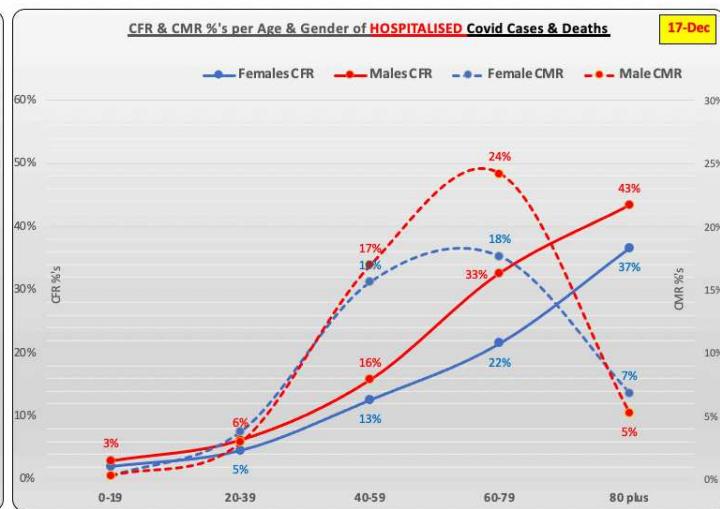
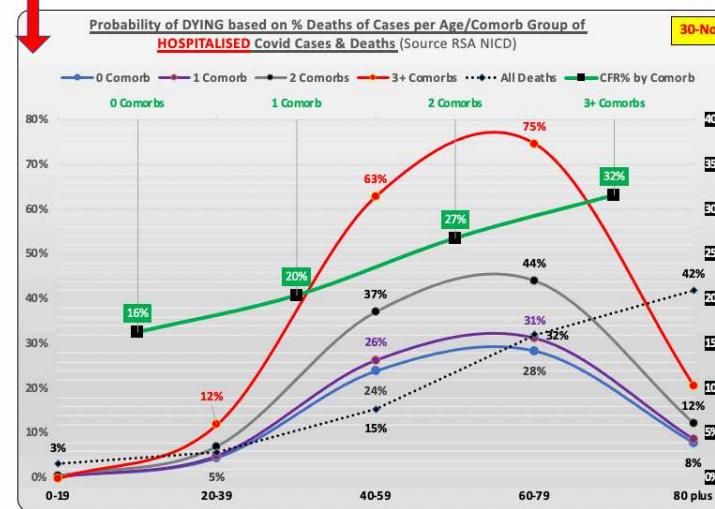
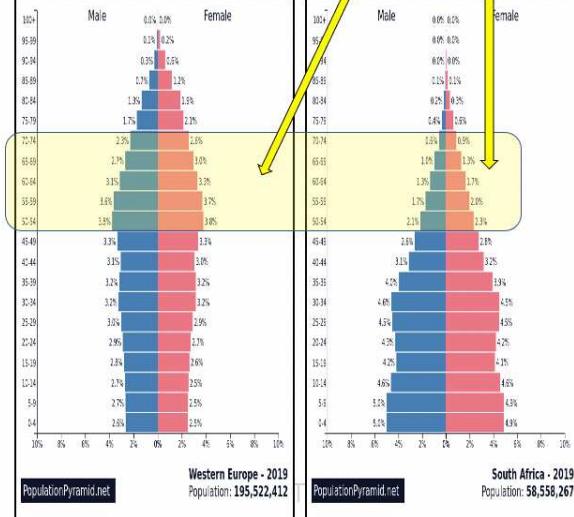
Covid Deaths per Age Group as % of ALL Covid Deaths (CMR)

17-Dec



COVID-19 Fatality Rate by AGE:

*Death Rate = (number of deaths / number of cases) = probability of dying if infected by the virus (%). This probability differs depending on the age group. The percentages shown below do not have to add up to 100%, as they do NOT represent share of deaths by age group. Rather, it represents, for a person in a given age group, the risk of dying if infected with COVID-19.



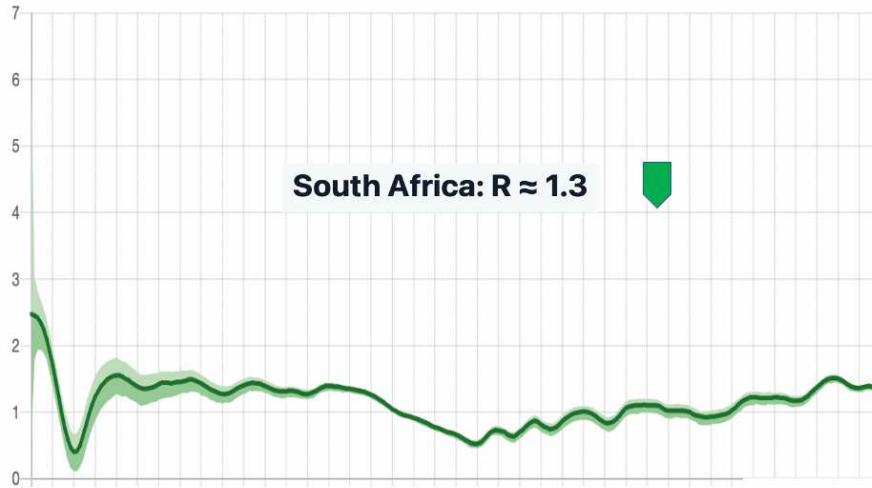
Covid REPRODUCTIVE NUMBER (Rt) in RSA & Provinces

Data as at: 23 December 2020

Page 5.3

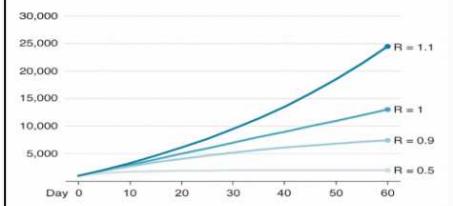
The Reproduction Number, R, derived from Currently Infectious estimates, see below

Latest Available

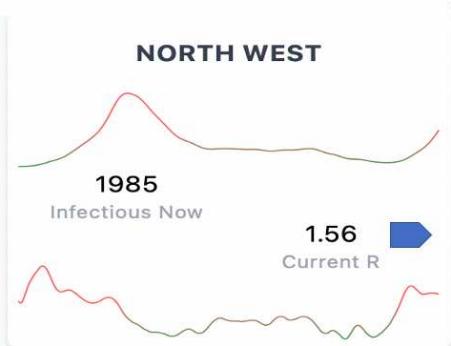
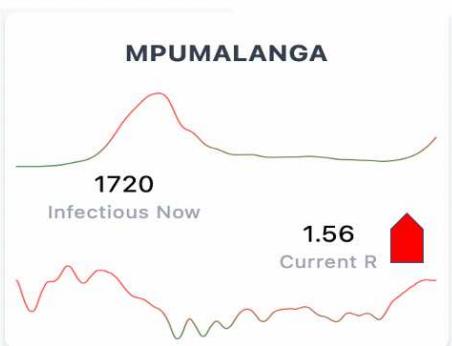
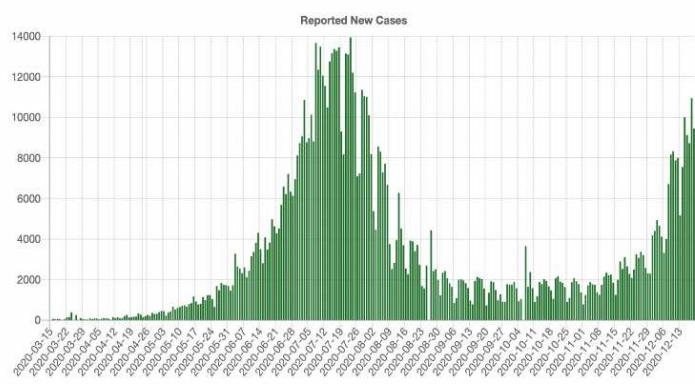
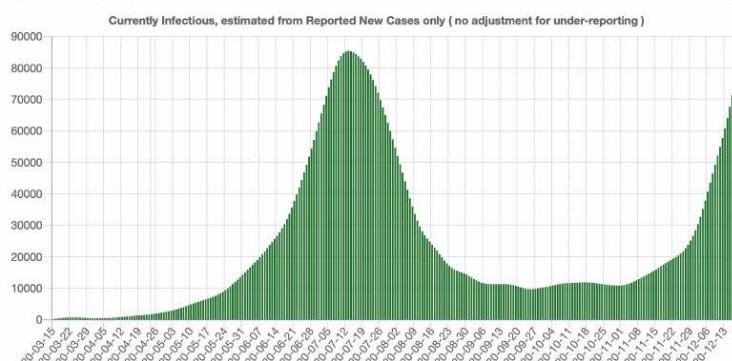


A Rt below 1 suggests that the number of cases is shrinking, possibly allowing societies to open back up.. A Rt above 1 indicates that the number of cases is growing, perhaps necessitating renewed lockdowns or other measures.

How 1,000 cases would increase under different infection rates



↑ Movement from previous reporting



Data as at:

Latest Available

Unless otherwise indicated

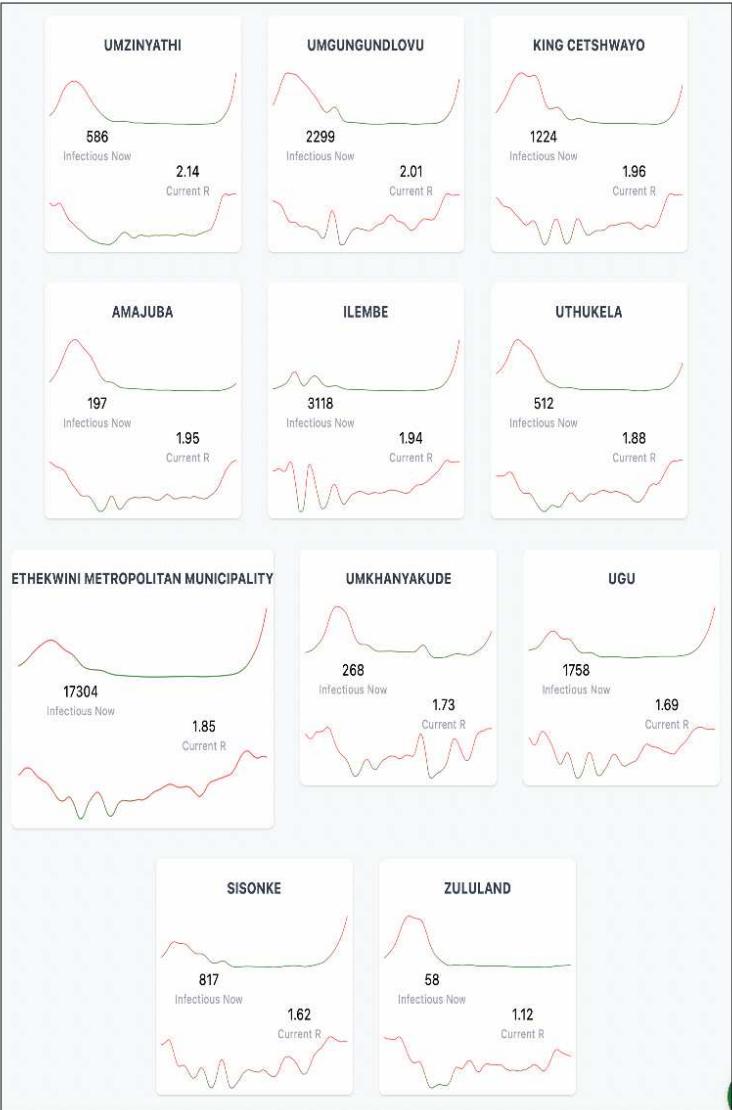
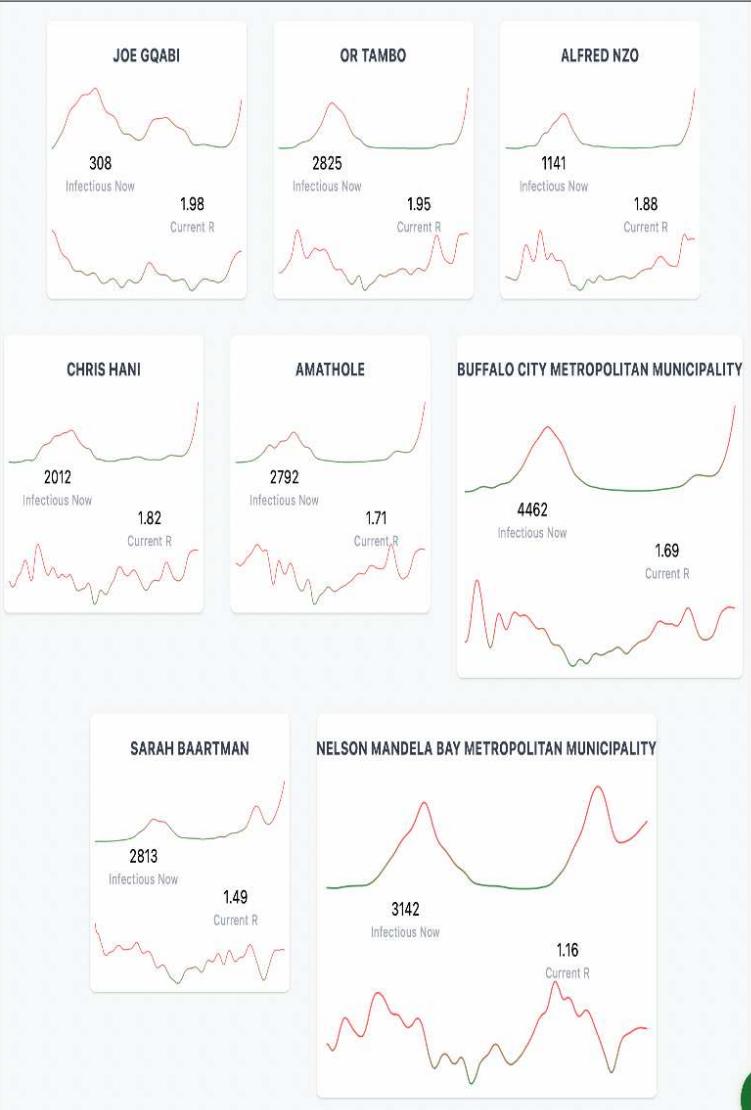
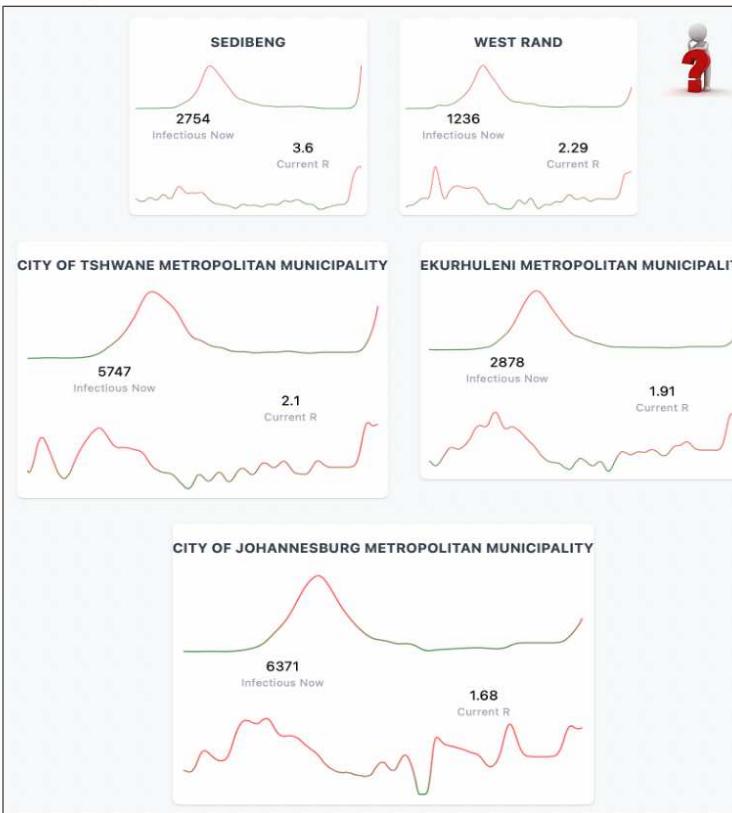
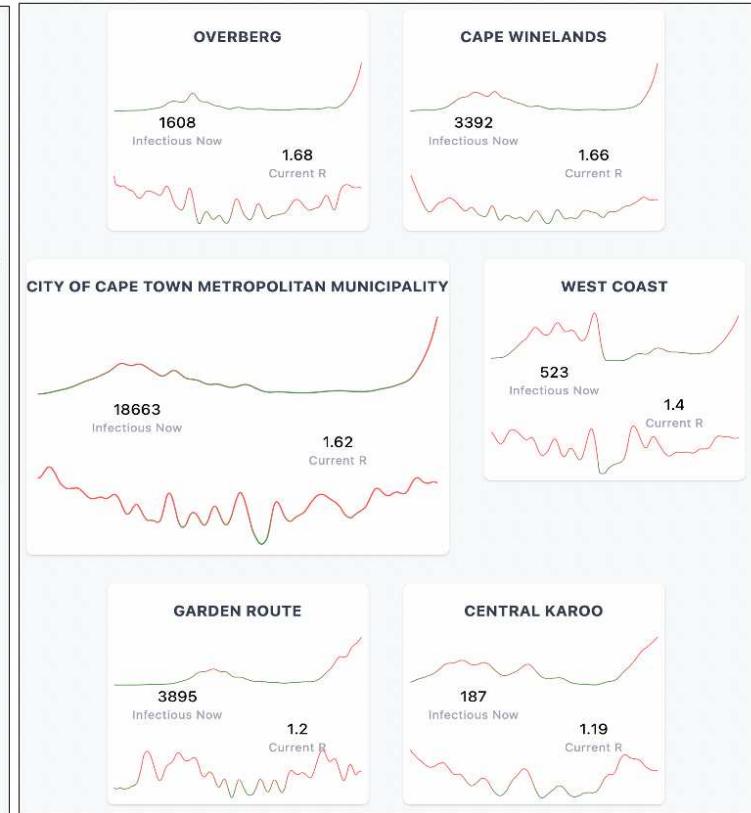
Rt graphs from:



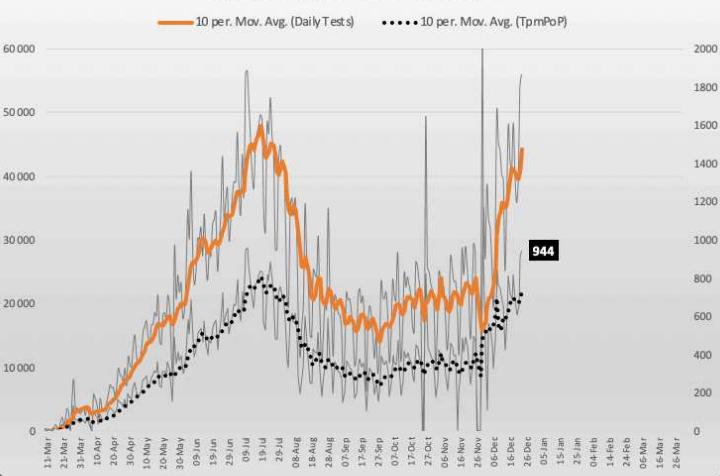
<https://reproduction.live/world/ZA>

hdg

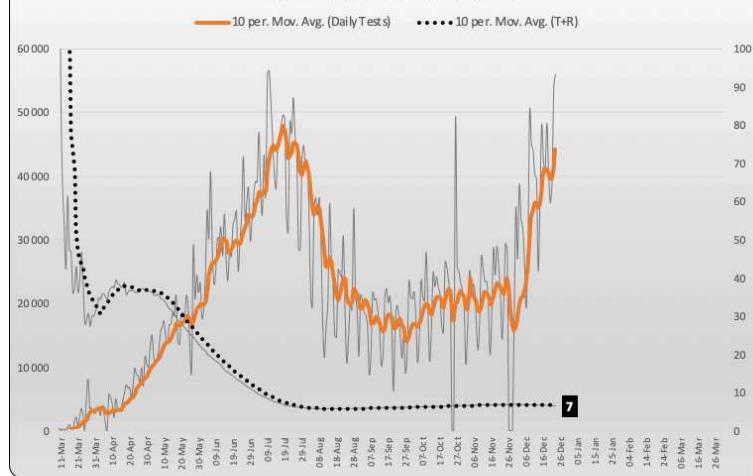
25 December 2020

KZN**ECape****Gauteng****WCape**

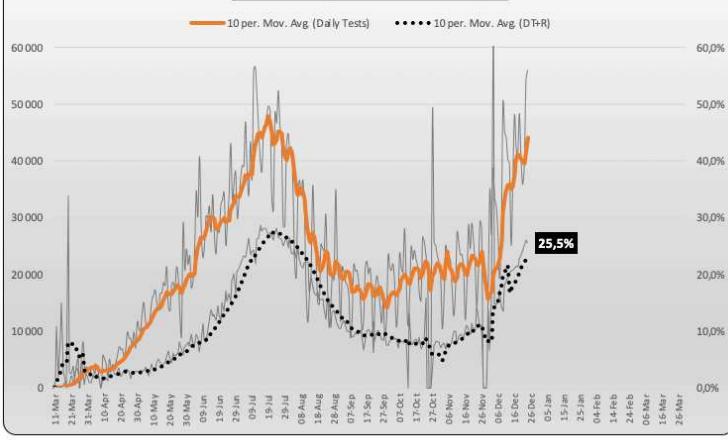
RSA: Daily Tests per million PoP



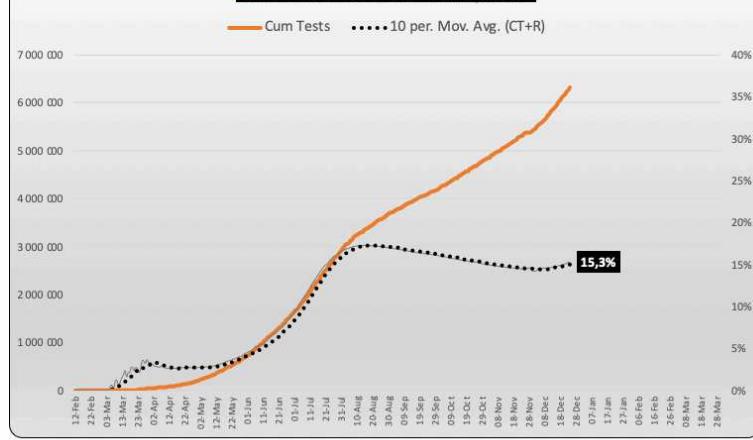
RSA: Daily Tests per +Case



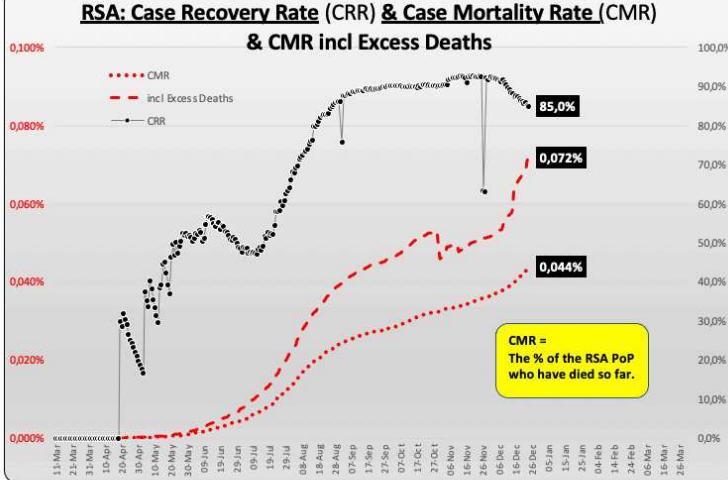
RSA: Daily Tests Positivity %



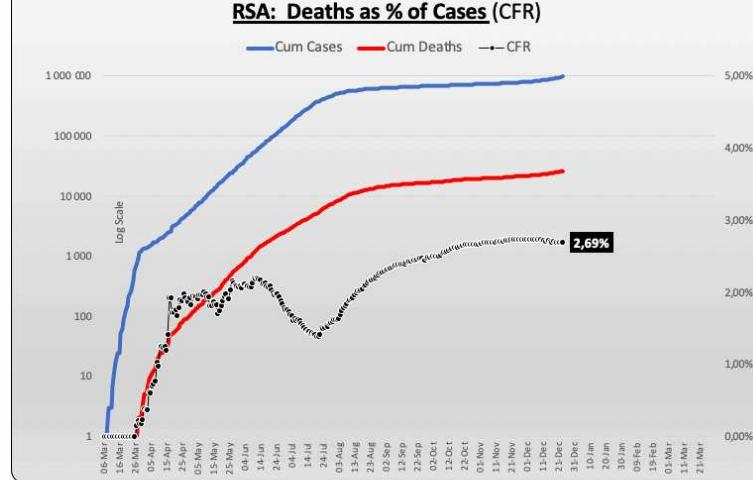
RSA: Cum Tests Positivity Rate



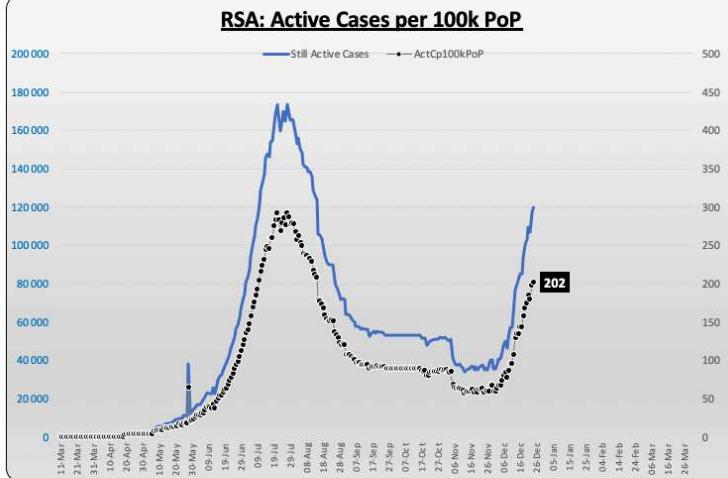
RSA: Case Recovery Rate (CRR) & Case Mortality Rate (CMR) & CMR incl Excess Deaths



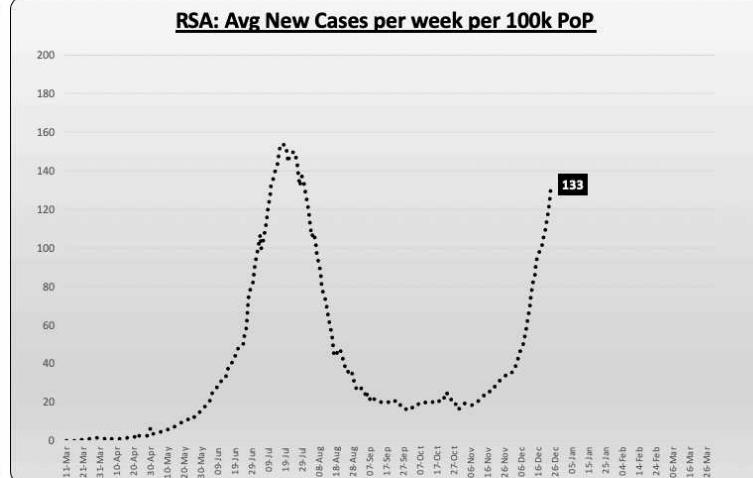
RSA: Deaths as % of Cases (CFR)

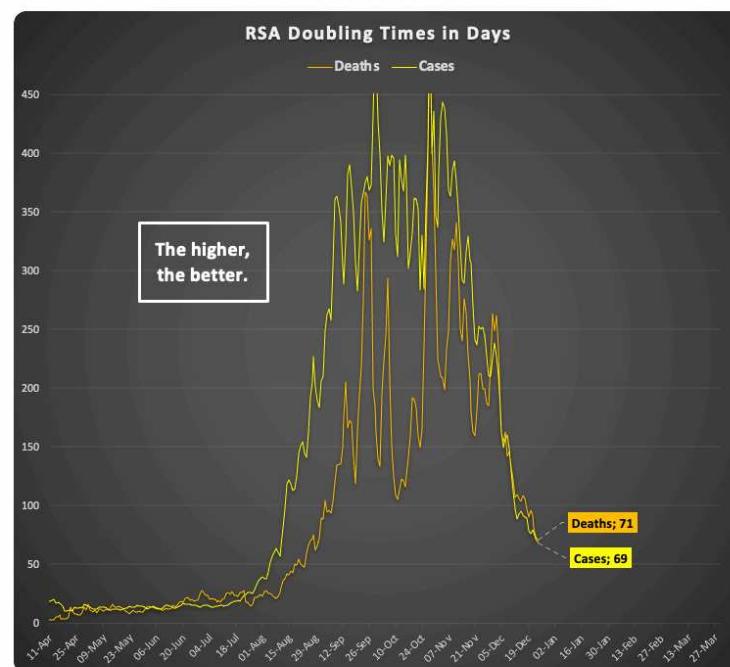
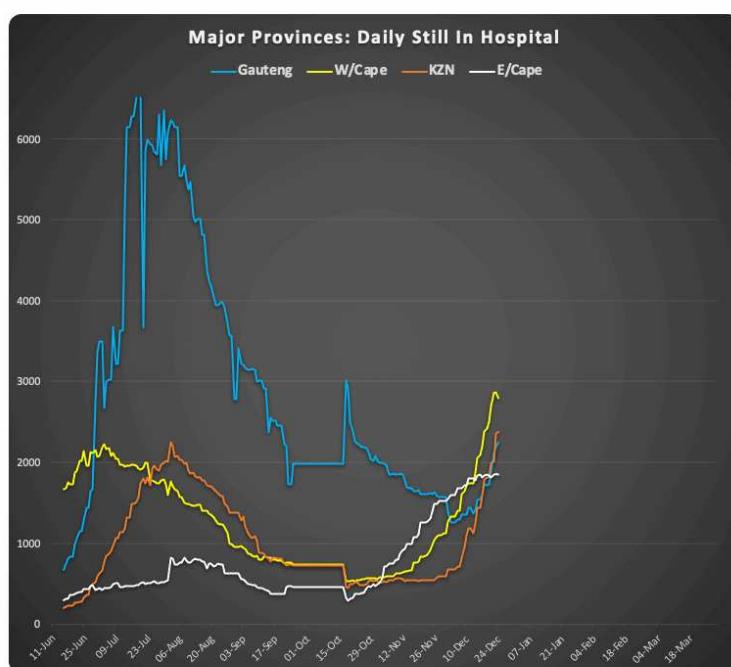
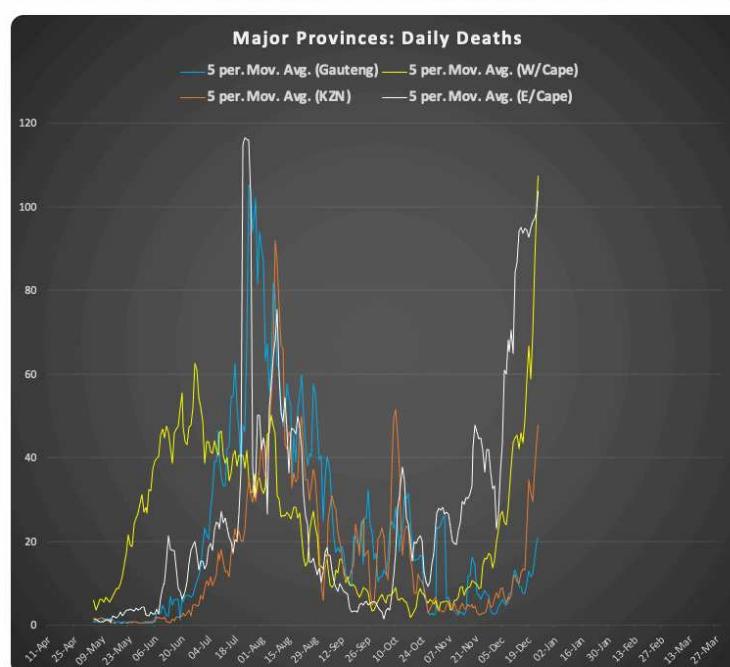
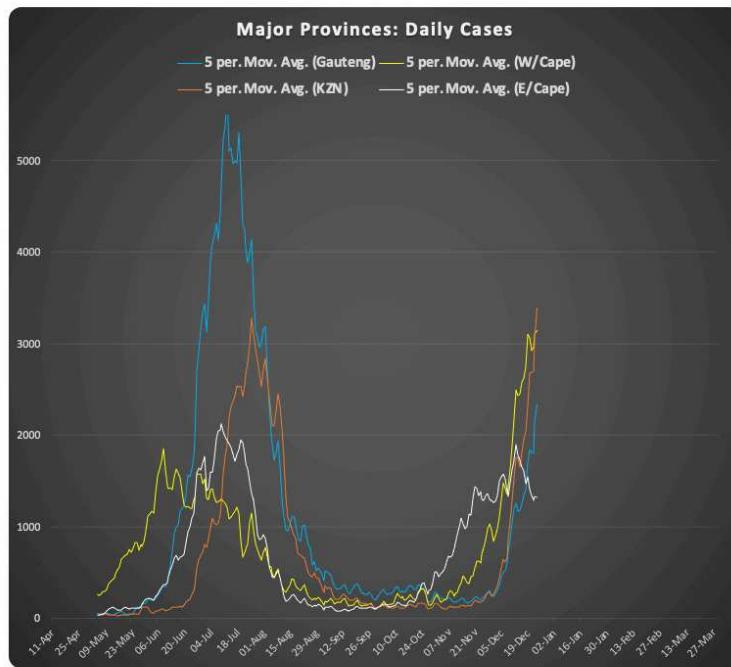
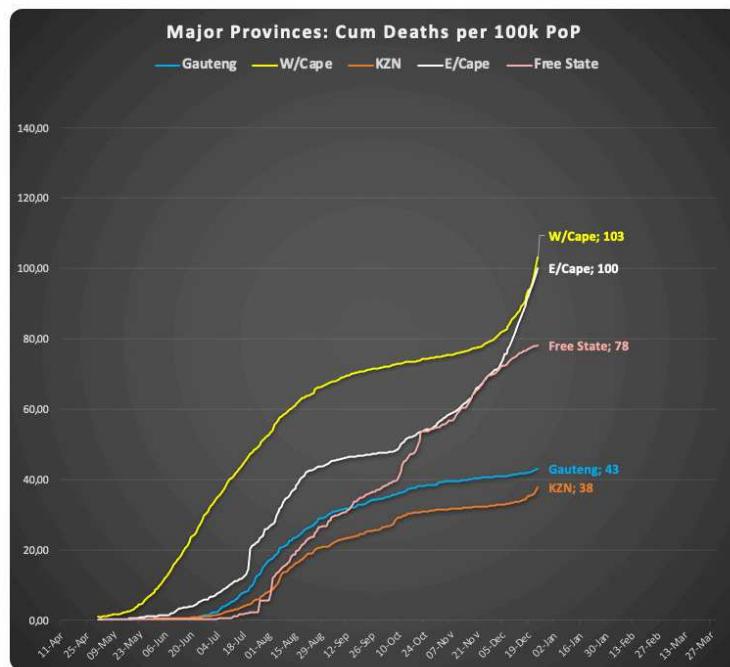
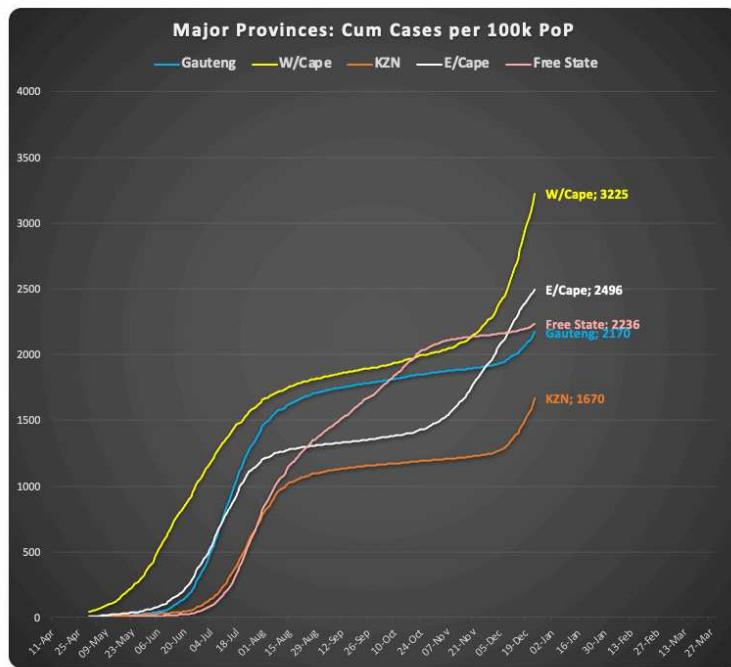


RSA: Active Cases per 100k PoP



RSA: Avg New Cases per week per 100k PoP



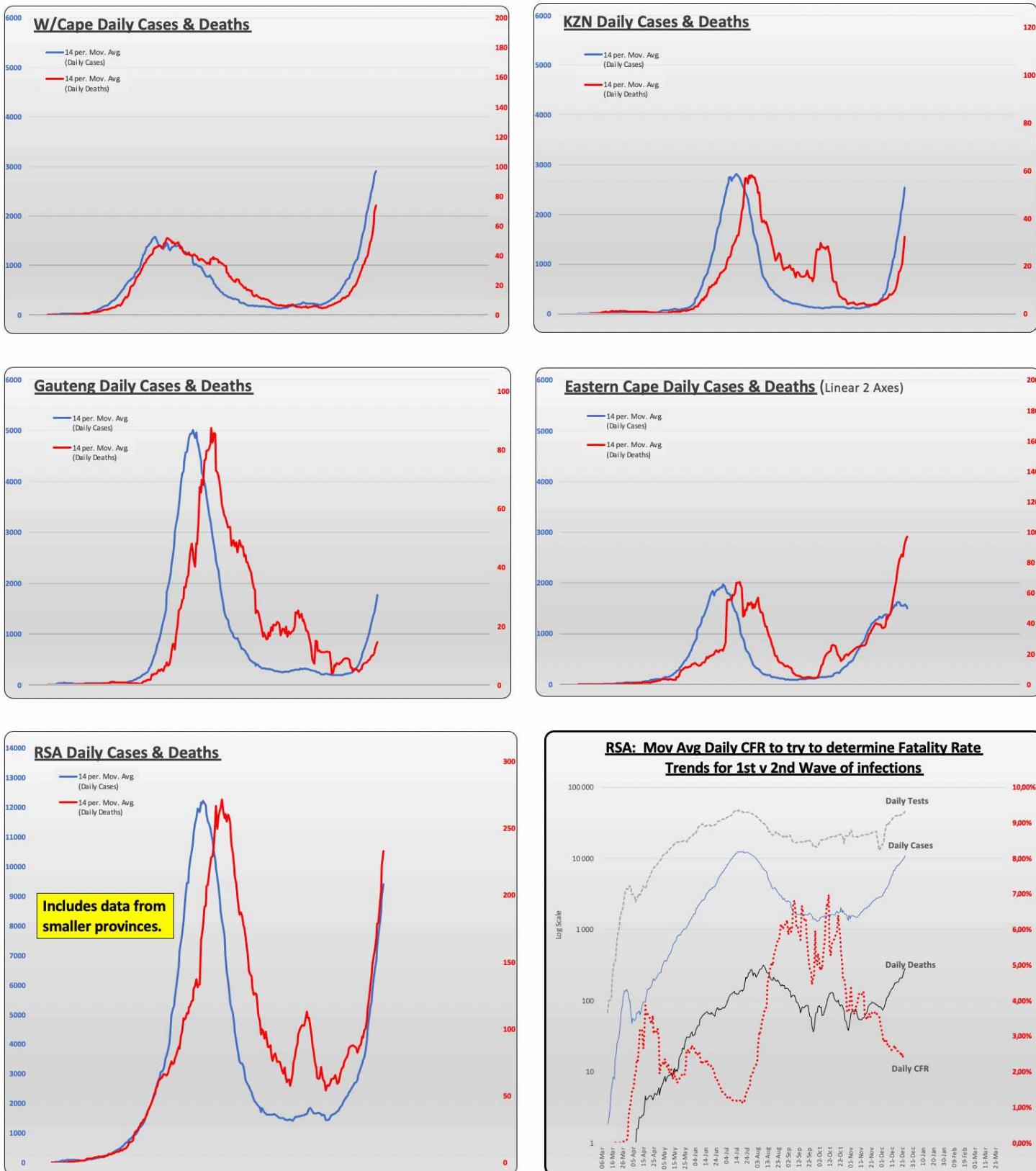


RSA & Major Provinces:

1st Wave v 2nd Wave

The Y-axes scales have been adjusted in order to get the 1st Wave Cases & Deaths peaks aligned.
The unfolding relationship of Cases v Deaths for the 2nd Wave should therefore give a good indication of the 2nd Wave's speed of infection spread and severity resulting in fatalities.

Page 5.7

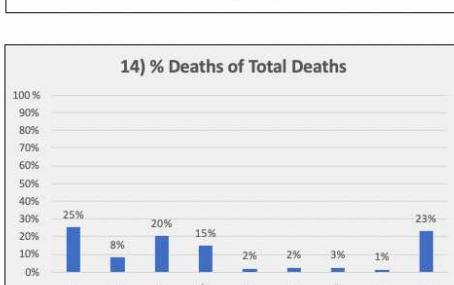
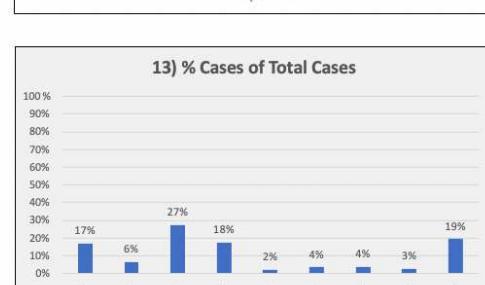
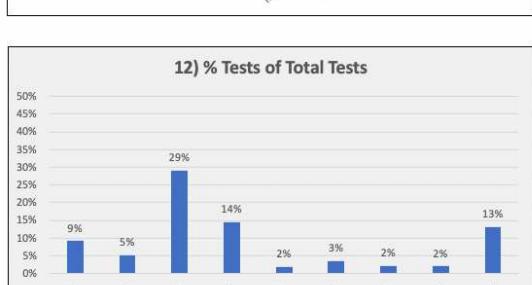
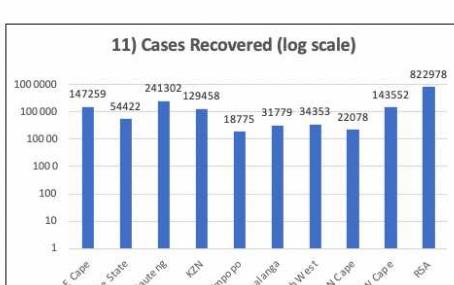
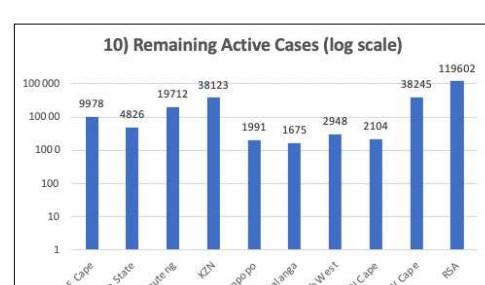
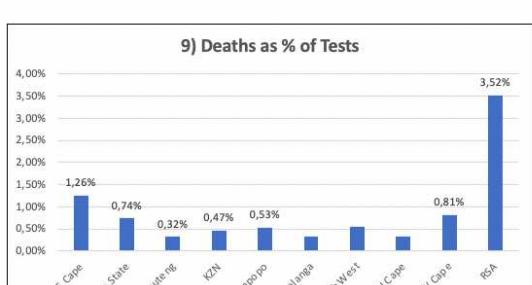
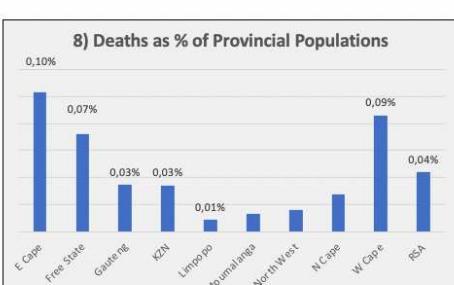
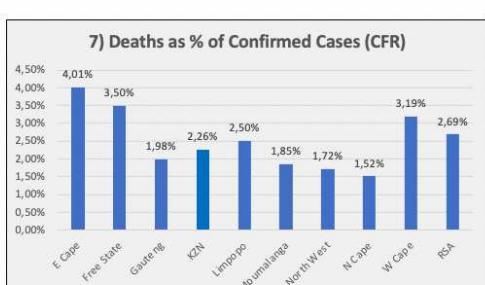
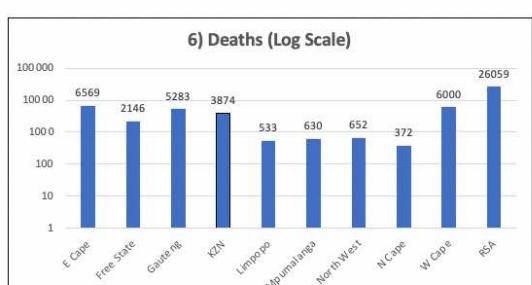
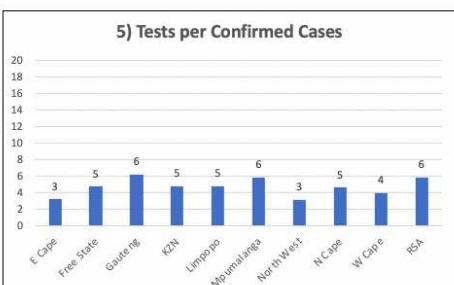
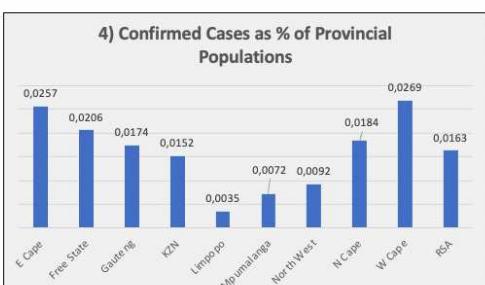
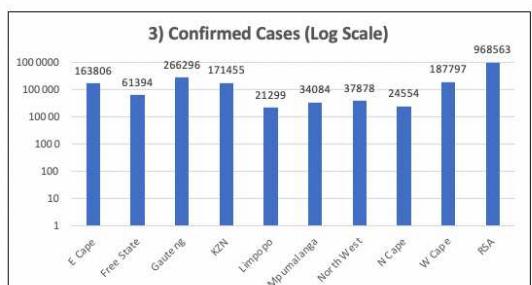
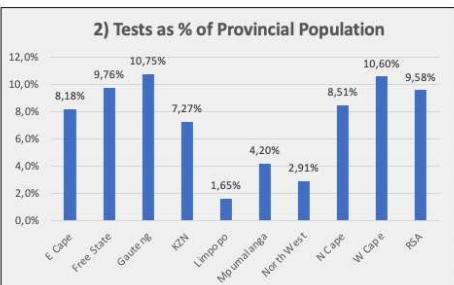
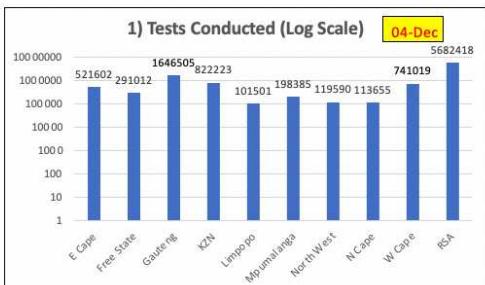
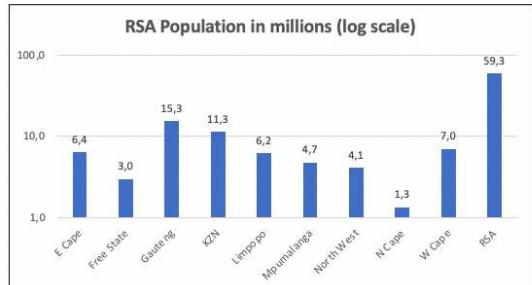


What are these graphs telling us ? (Ignore the numbers, look purely at the inclines and amplitudes).

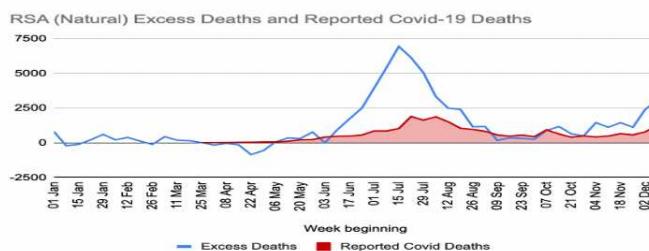
- 1) The Cases and Deaths curves are almost identical, except for the approx 2 week delay in Deaths occurring.
- 2) There is possibly a problem with the ECape Case reporting. Their Deaths Curve is way ahead of their Cases Curve. Could be due to full hospitals and patients being referred to WC & KZN, but Deaths still attributed to ECape ? If the ECape Cases numbers are correct then the CFR (Fatality Rate) for the 2nd Wave is extremely high !! This is not borne out by the WCape and/or KZN data.
- 3) The WCape & KZN and even the Gauteng curves are exactly as one would expect, unfortunately their relative amplitudes does not bode well for Gauteng and the rest of the country.

RSA Covid Stats: National & Provincial Analysis

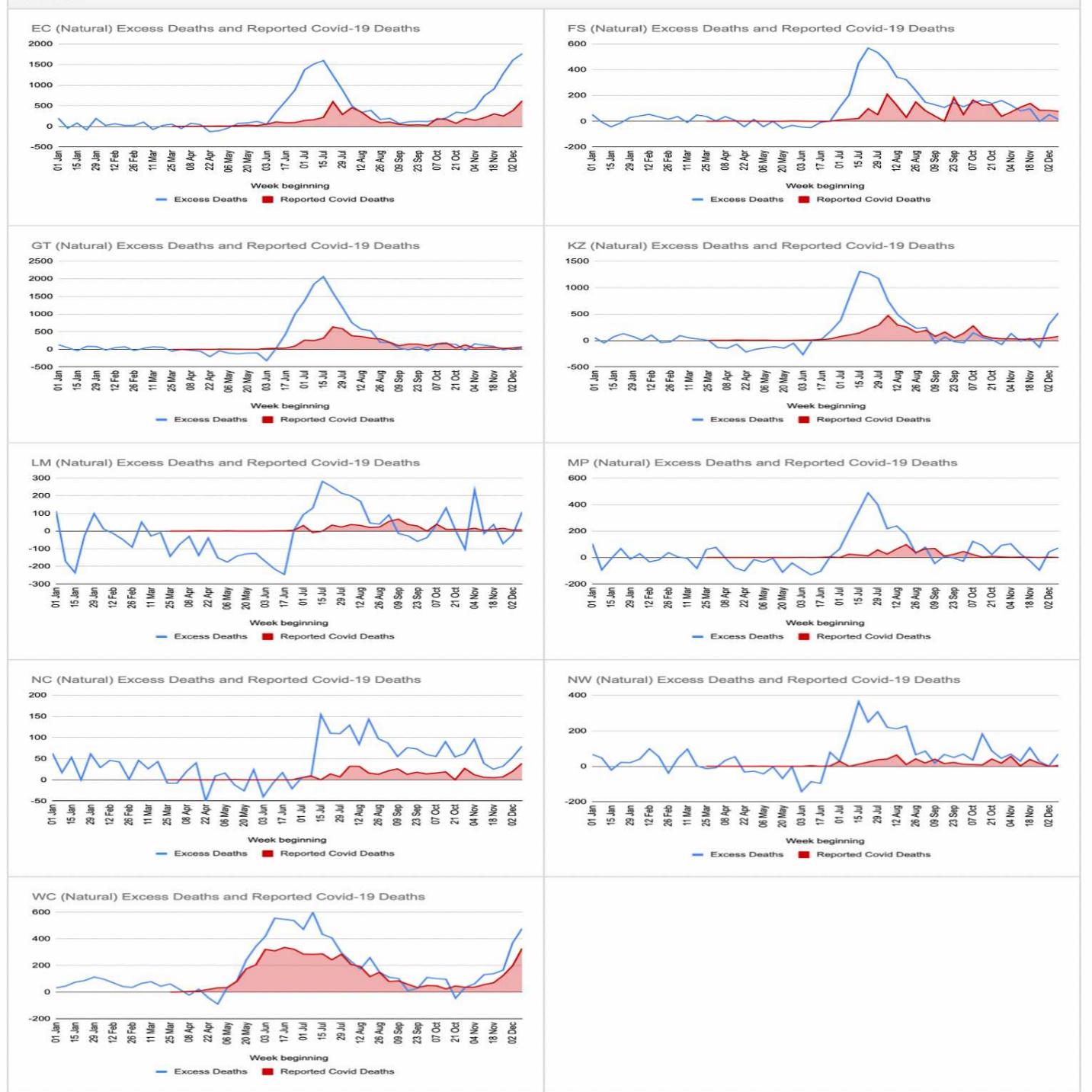
Page 6

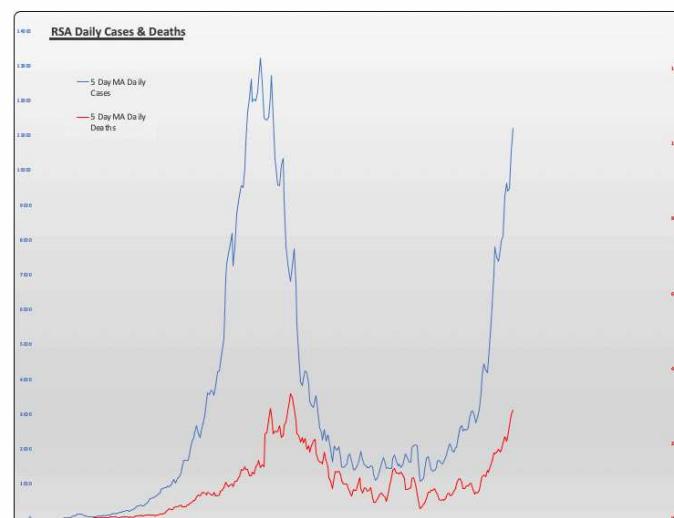
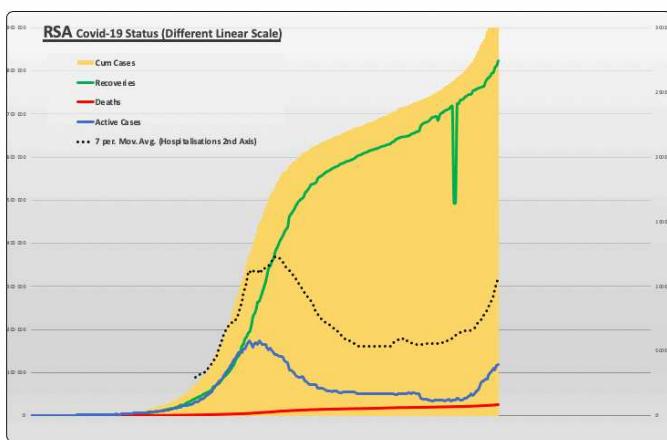
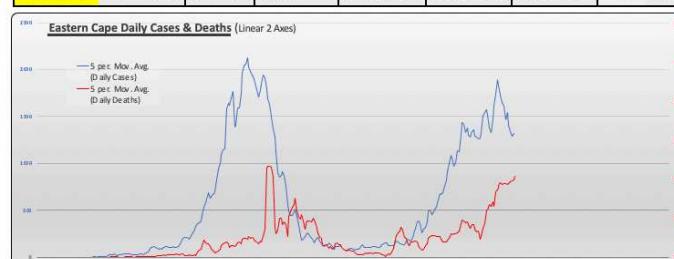
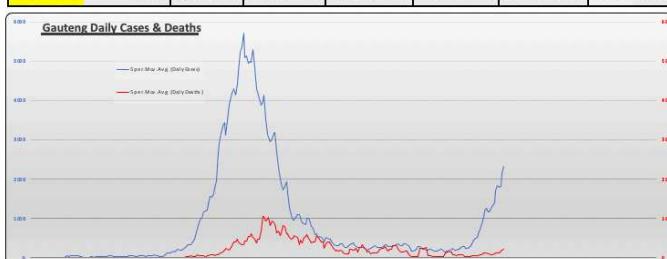
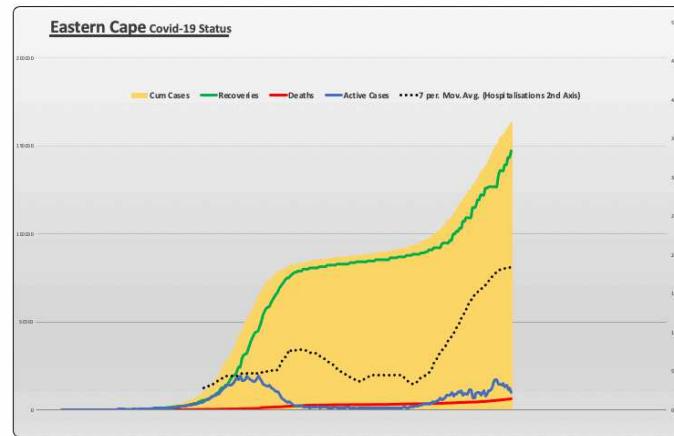
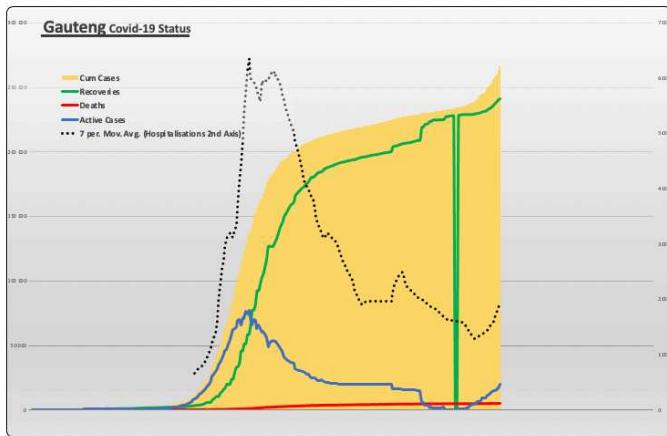
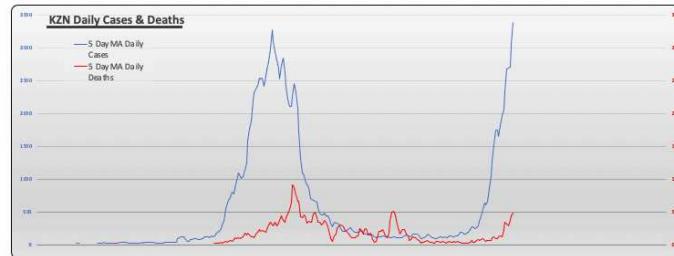
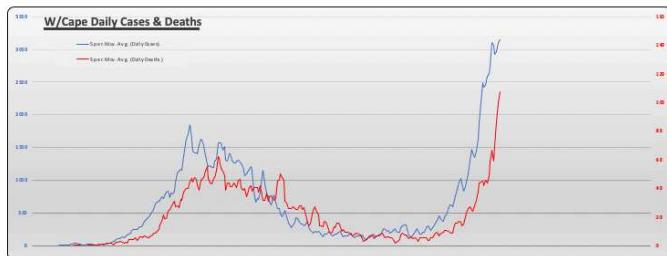
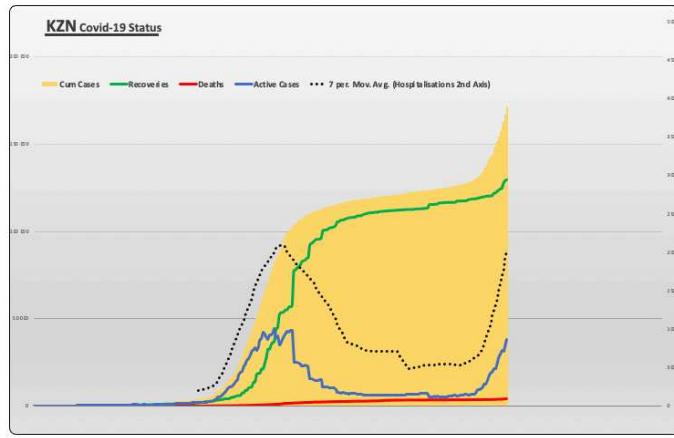
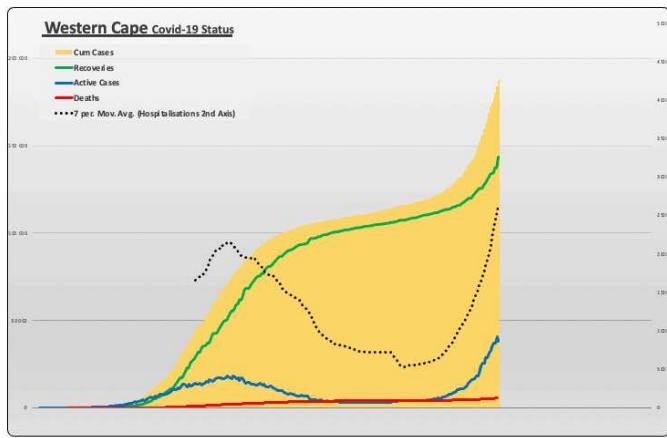


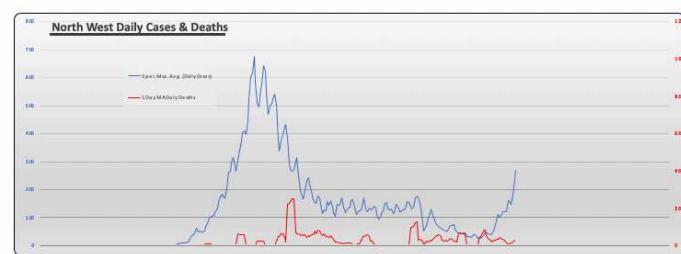
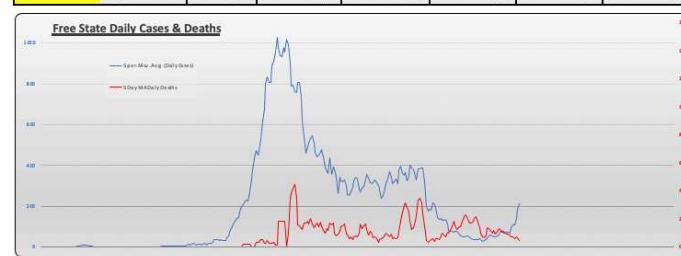
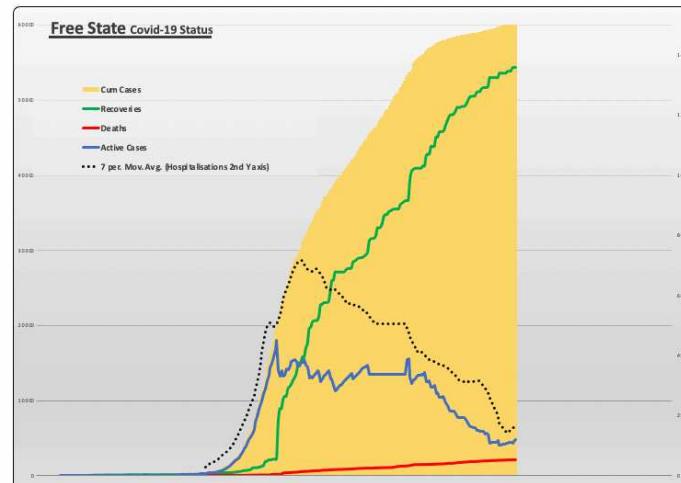
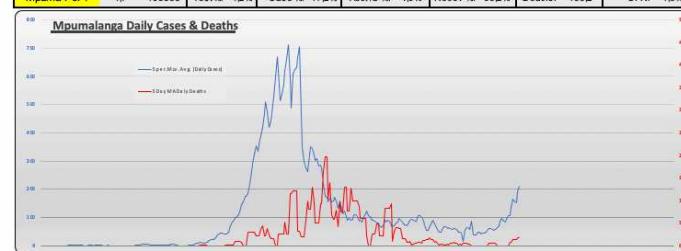
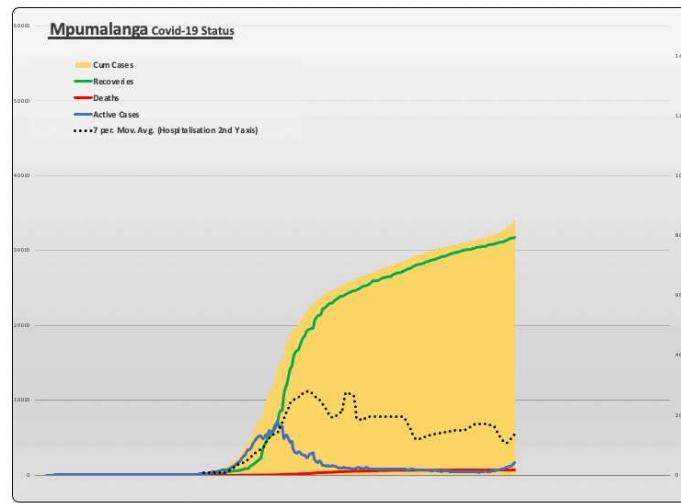
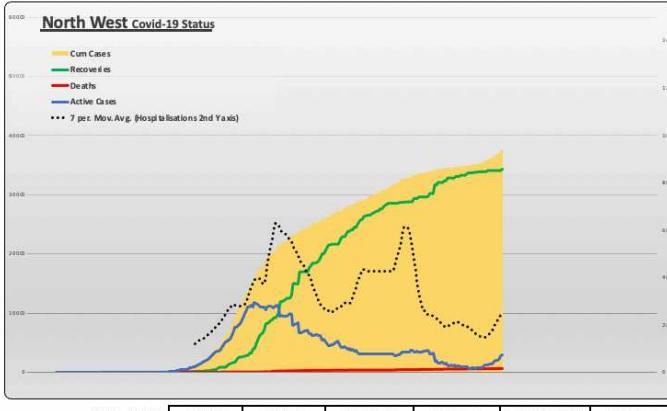
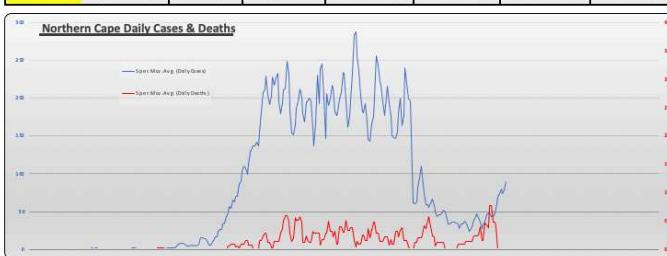
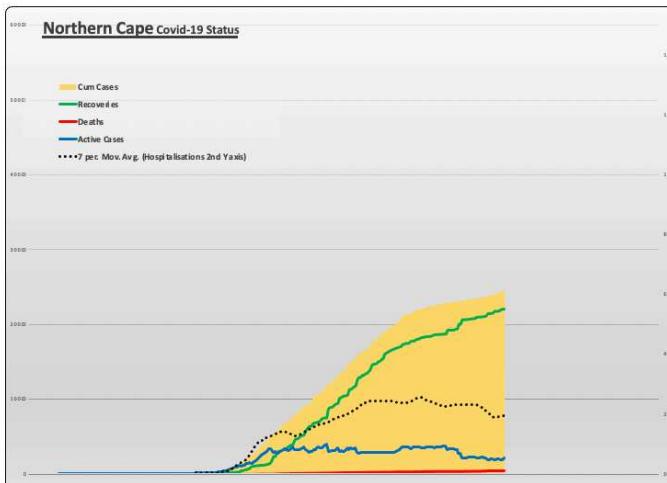
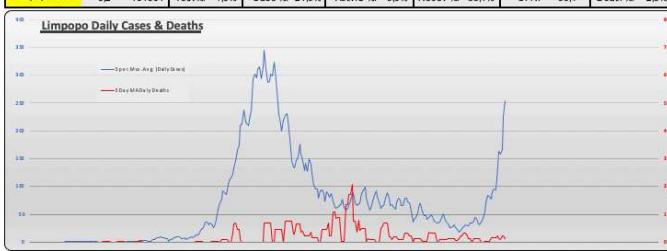
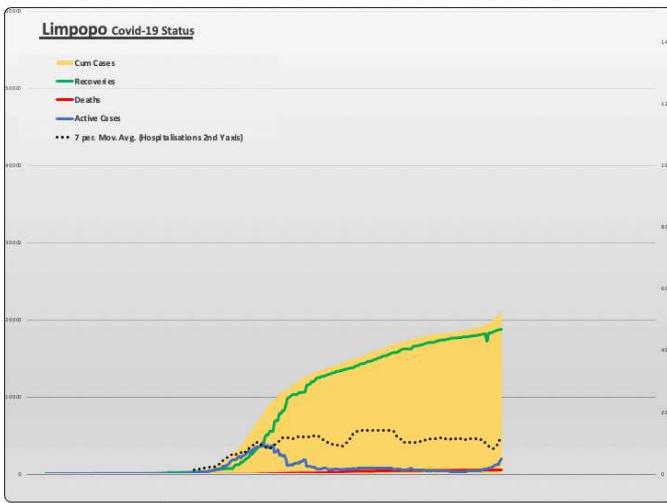
One approach to aid understanding of the emerging COVID-19 mortality is to compare the estimated weekly excess deaths with the number of COVID-19 deaths reported by the Minister of Health as shown in the figure below. This comparison is hampered to some degree by the fact that the excess deaths are classified by week in which the death occurred; the reported COVID-19 deaths are classified by date the numbers are reported to the Department. If all excess natural deaths were due to COVID-19, and all COVID-19 deaths were perfectly identified and reported, the two series would be identical. The number of estimated excess deaths has begun to decrease, consistent with the trend in the number of confirmed COVID-19 deaths. Although more data are needed on the underlying causes of death, this observation is strongly supportive that a significant proportion of the current excess mortality being observed in South Africa is likely to be attributable to COVID-19.



Provinces







Food for Thought....

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