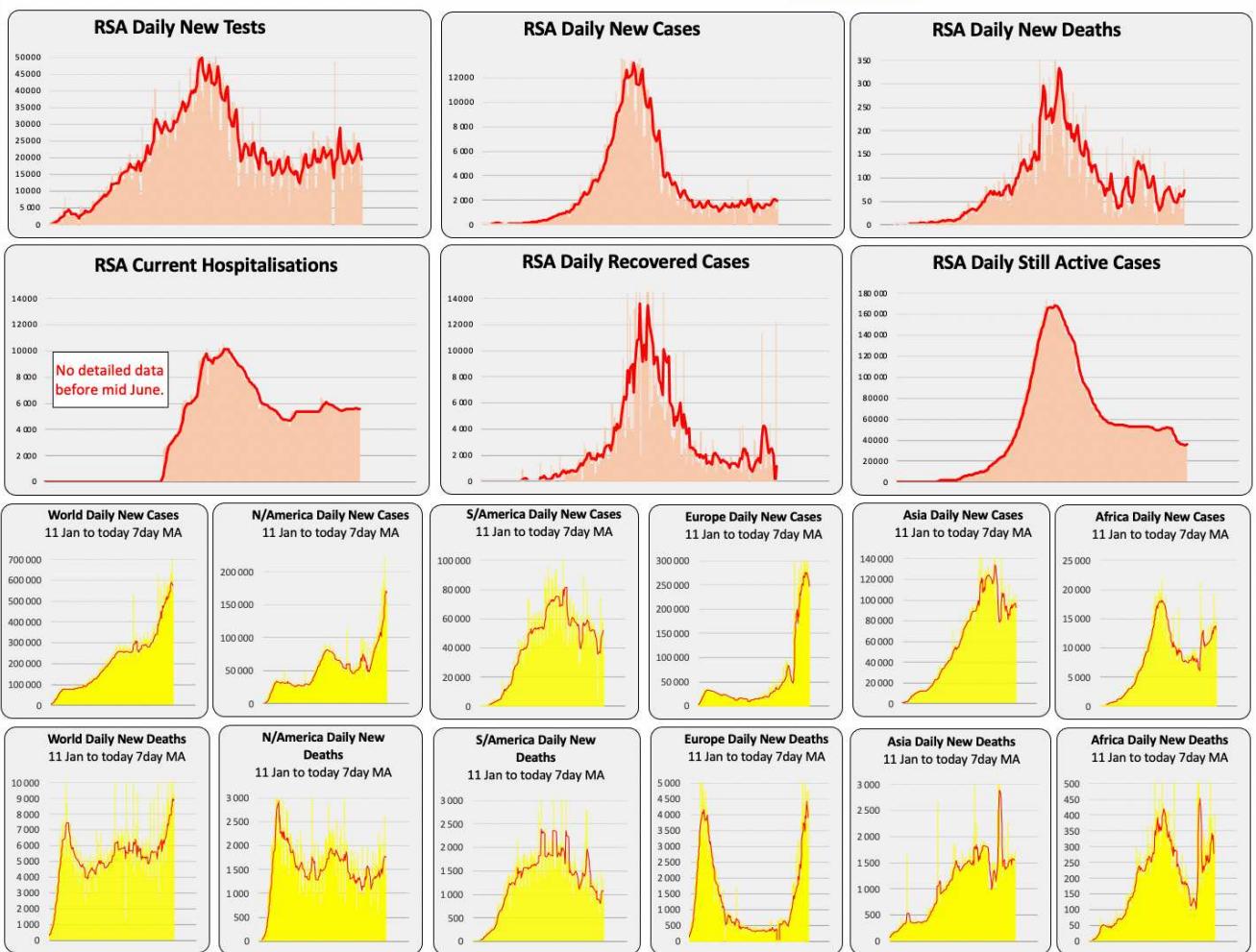
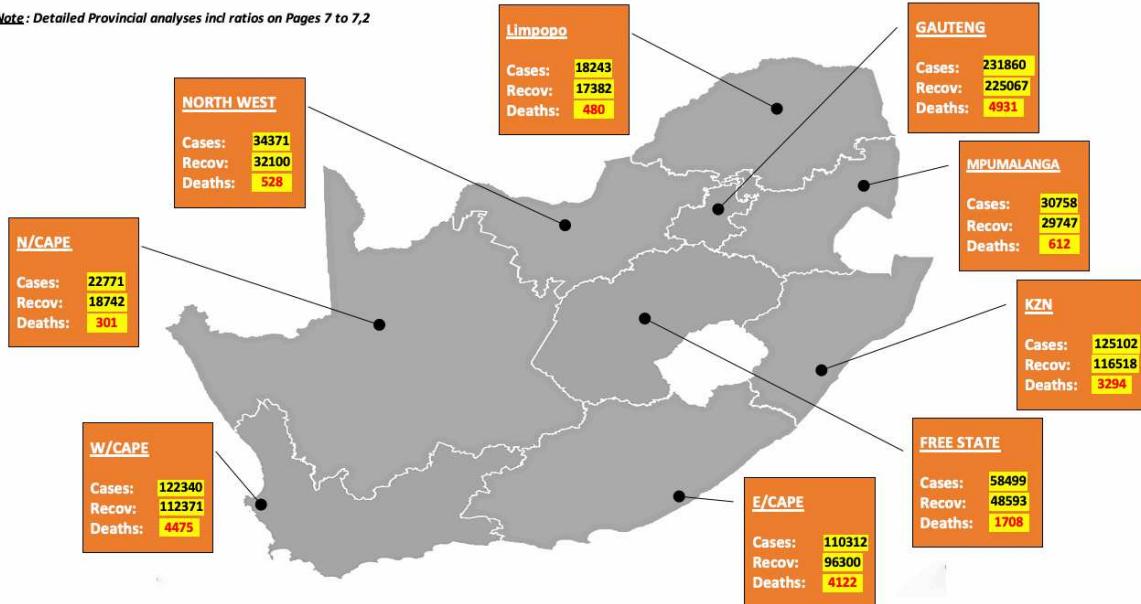
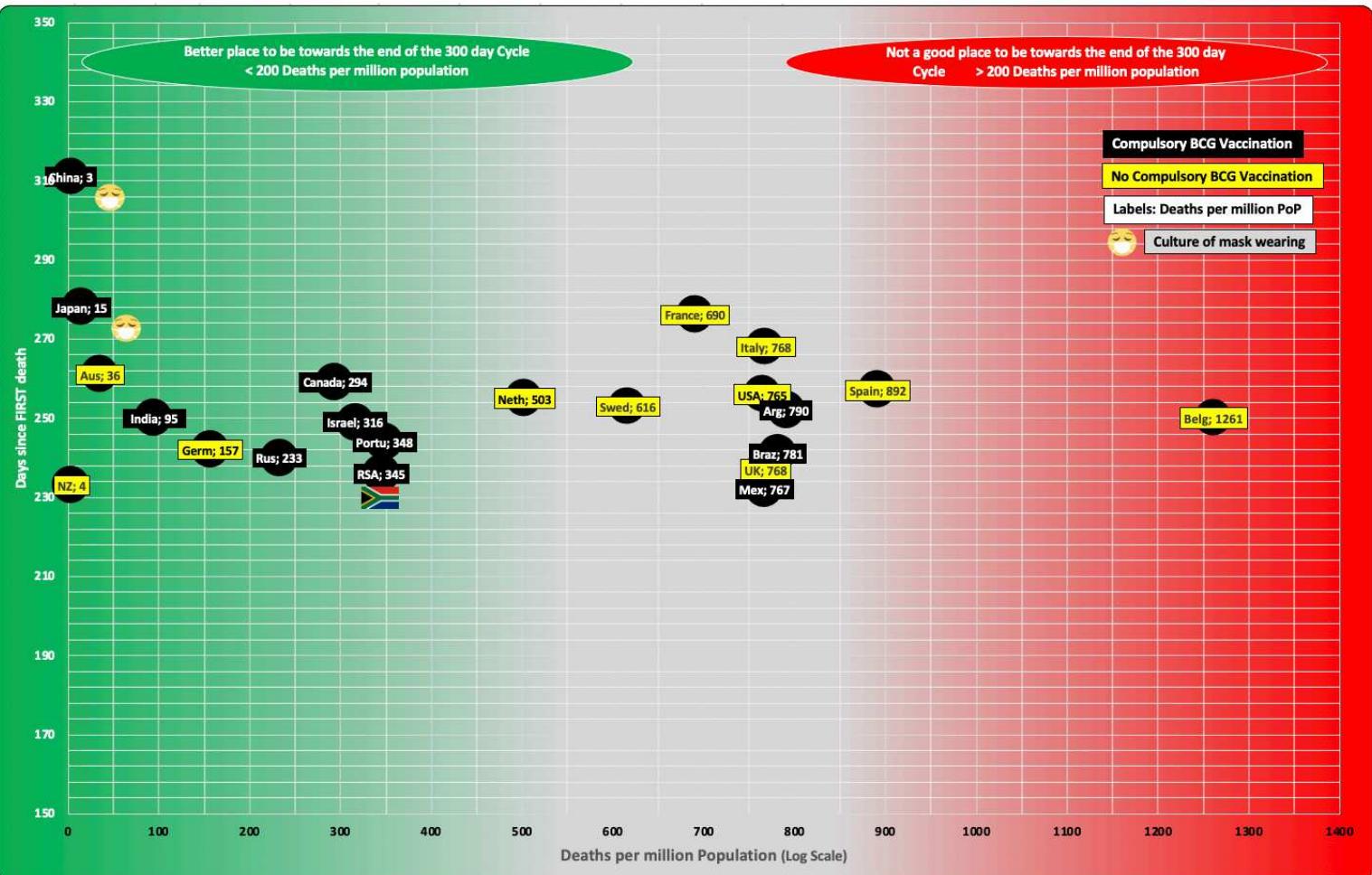


Note: Detailed Provincial analyses incl ratios on Pages 7 to 7,2



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

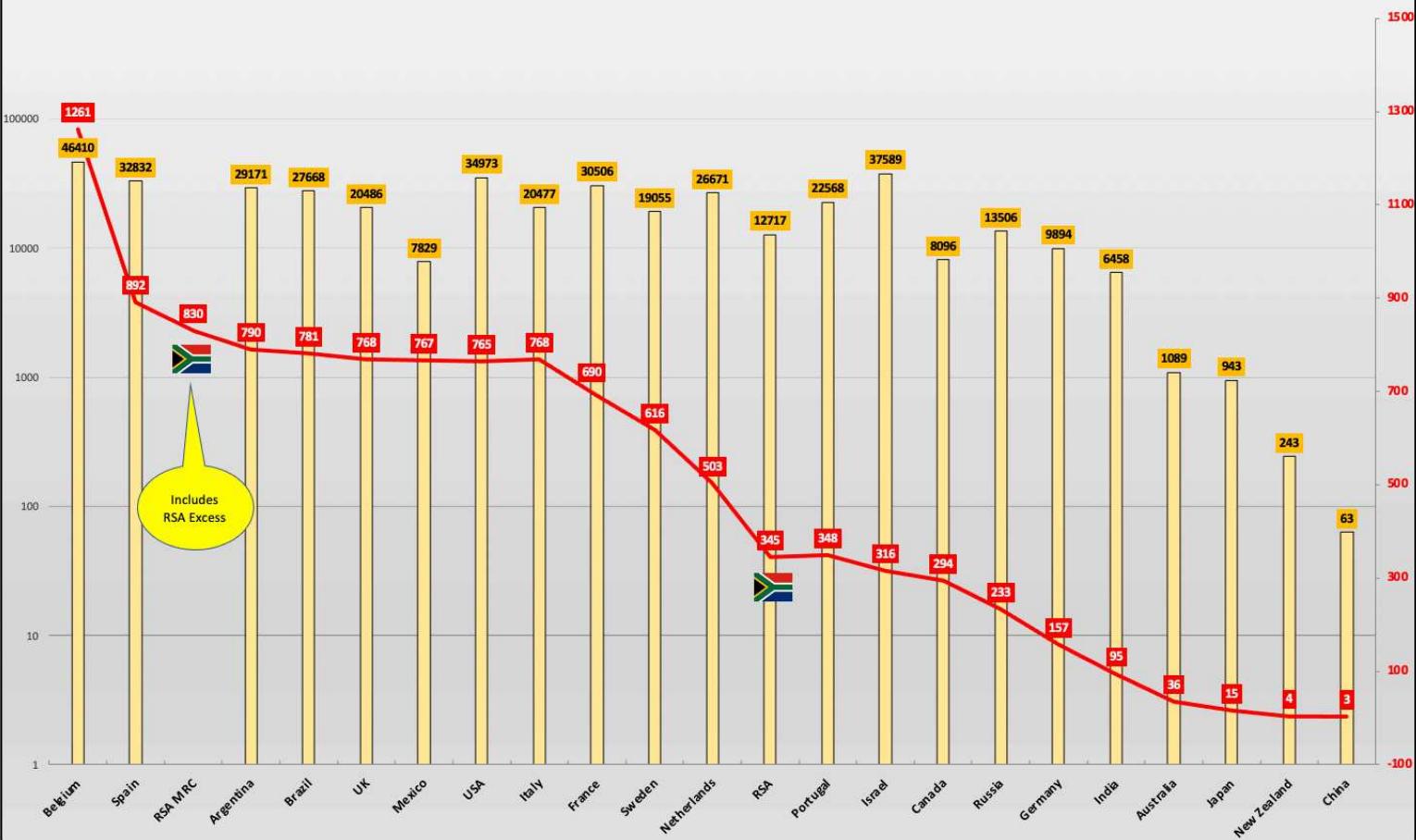
Page 2



Current Cum Cases & Cum Deaths per million PoP

(Two axes primary Y Log 2nd Y Linear)

Cases per million PoP Deaths per million PoP

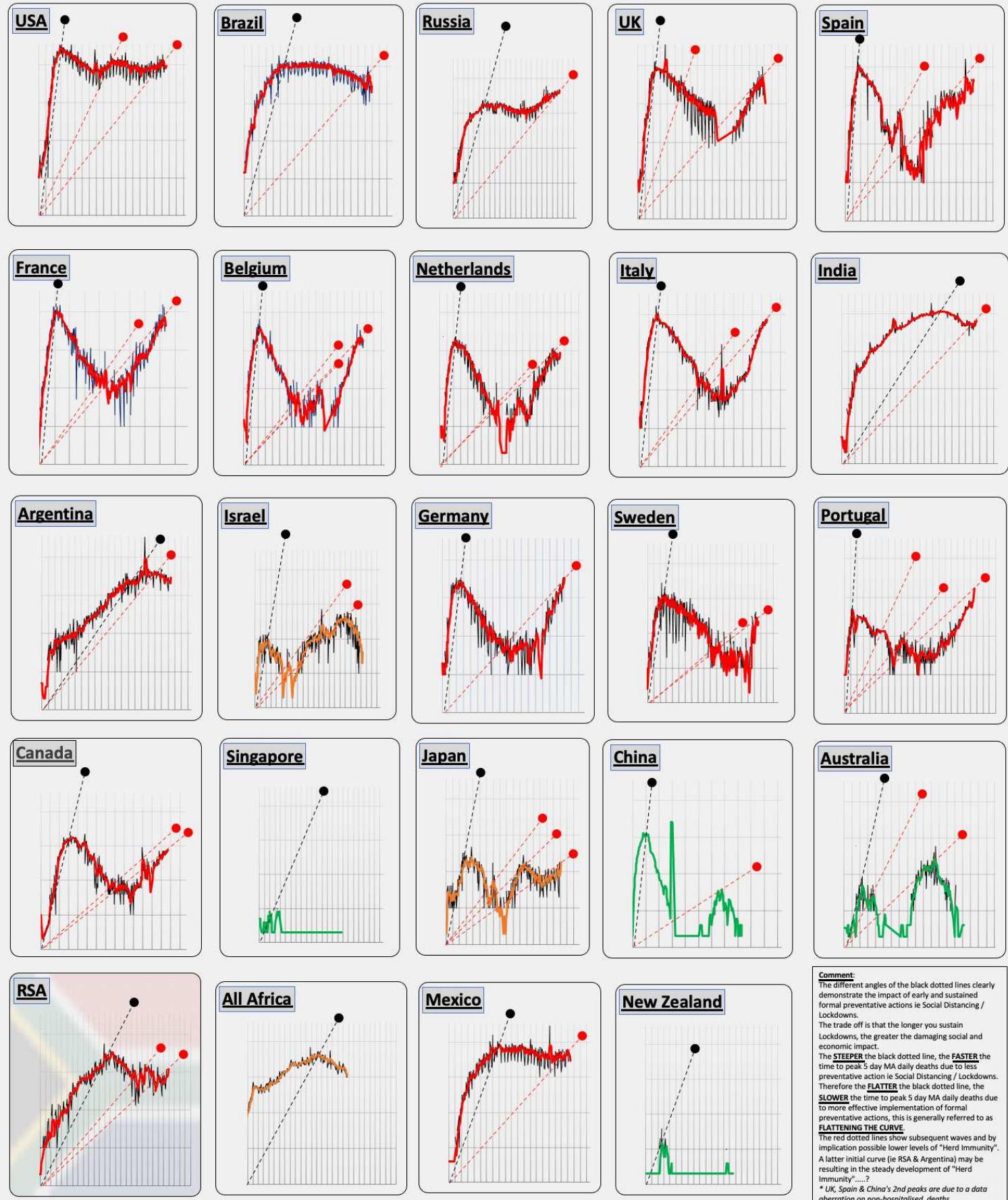


Daily Deaths Curves & Rate of Onset and next Wave "Inclinometers"

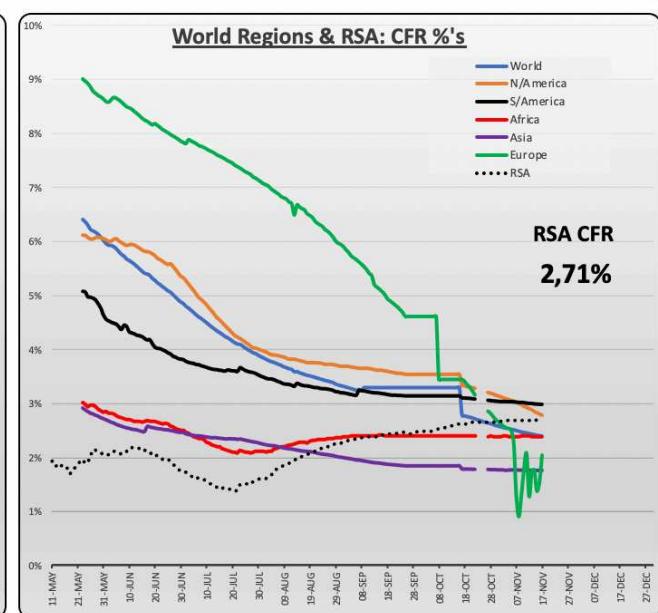
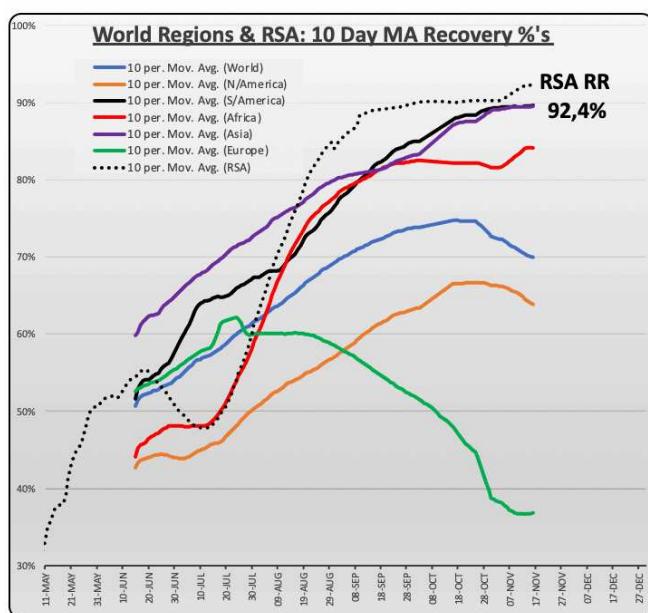
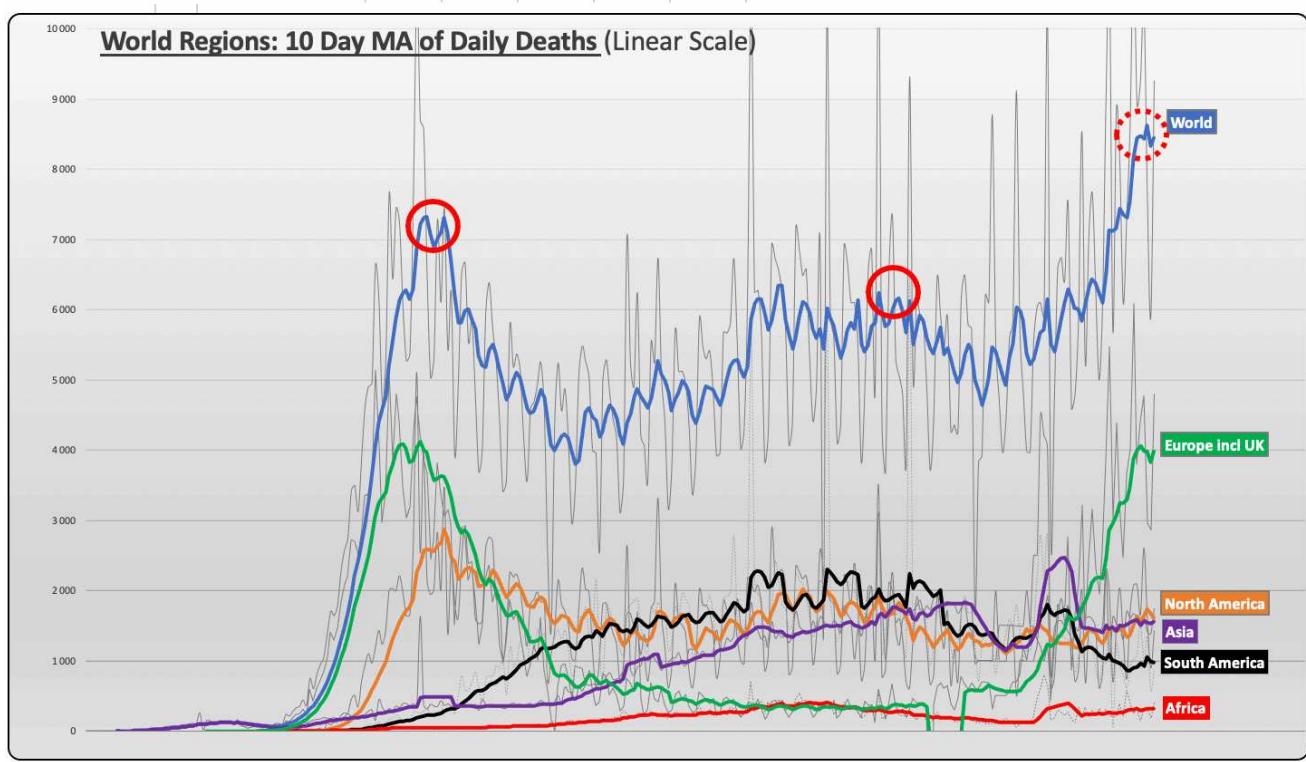
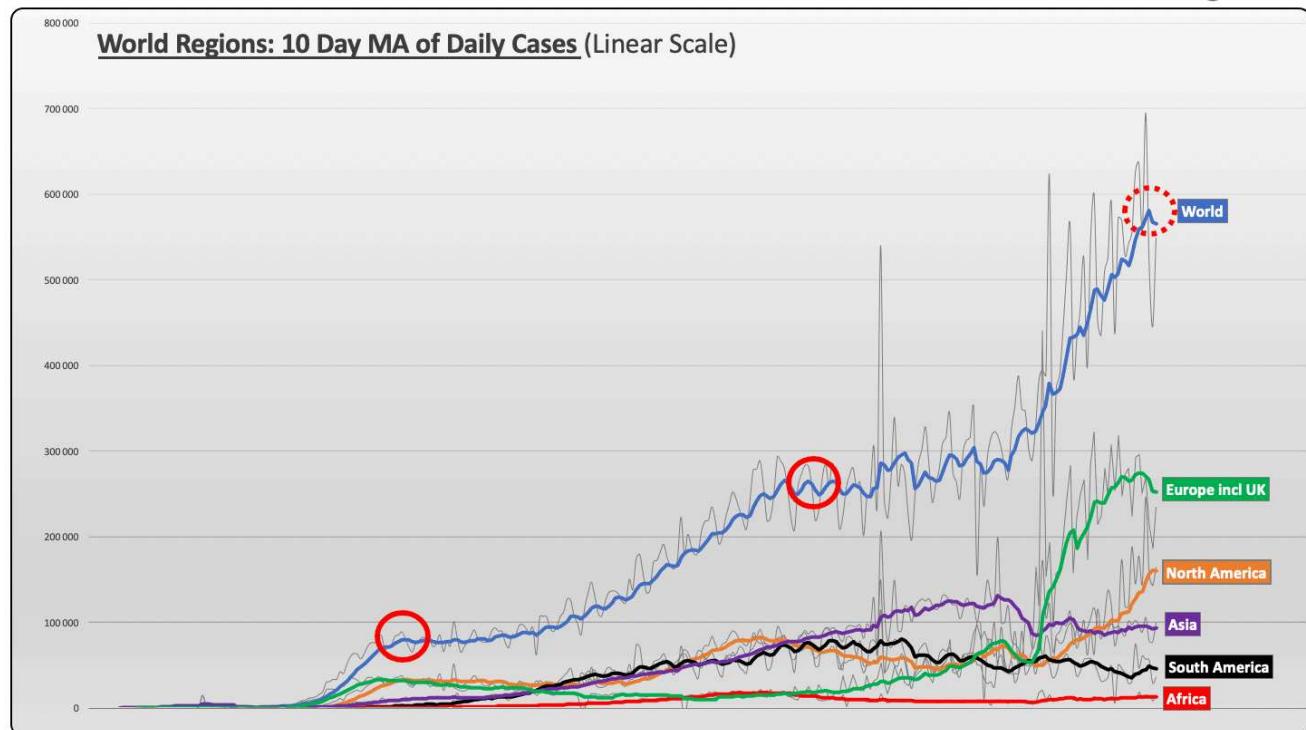
5 day MA Trendline from date of 1st death (all on Log Scale)

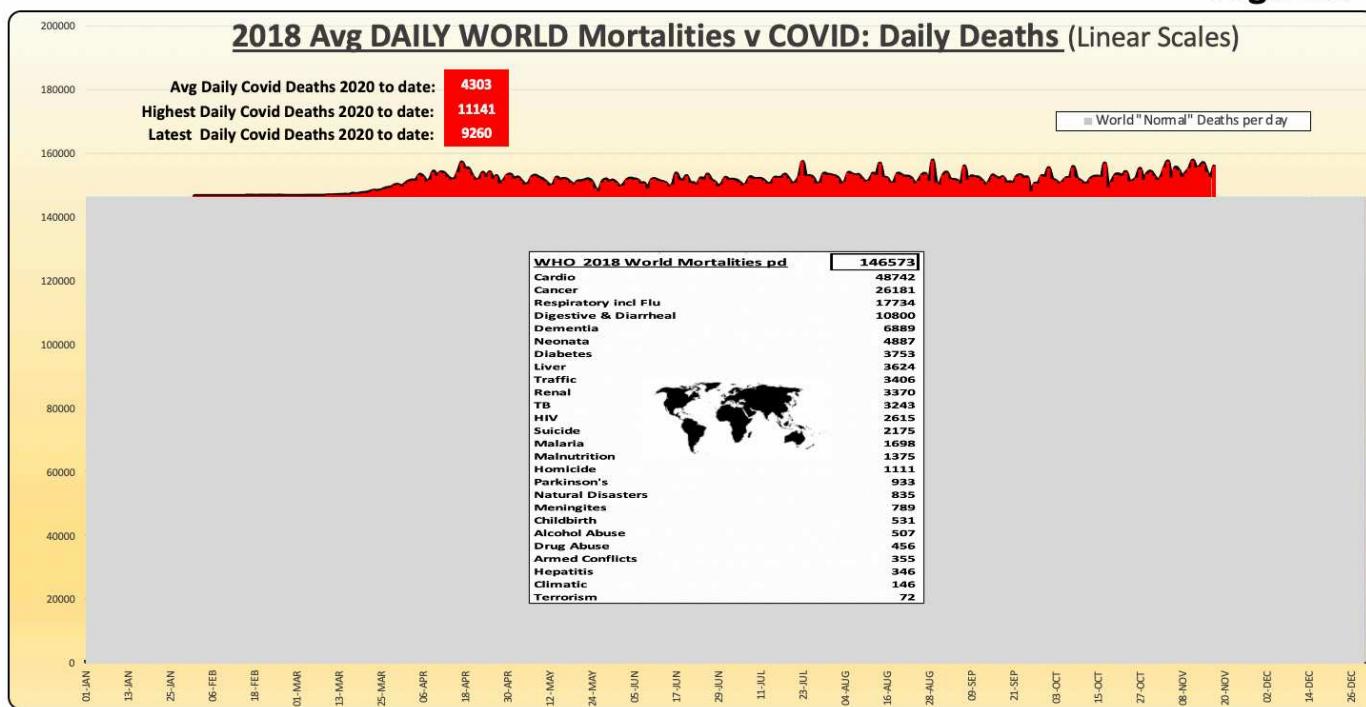
Peaked but spiking again
Passed peak but could rebound OR 2nd wave
Well past peak, unlikely to rebound

- Onset/1st wave
- 2nd & 3rd waves



Comment:
The different angles of the black dotted lines clearly demonstrate the impact of early and sustained formal preventative actions ie Social Distancing / Lockdowns.
The trade off is that the longer you sustain Lockdowns, the greater the damaging social and economic impact.
The STEEPER the black dotted line, the FASTER the time to peak 5 day MA daily deaths due to less preventative action ie Social Distancing / Lockdowns. Therefore the FLATTER the black dotted line, the SLOWER the time to peak 5 day MA daily deaths due to more effective implementation of formal preventative actions, this is generally referred to as FLATTENING THE CURVE.
The red dotted lines show subsequent waves and by implication possible lower levels of "Herd Immunity". A latter initial curve (ie RSA & Argentina) may be resulting in the steady development of "Herd Immunity".....?
* UK, Spain & China's 2nd peaks are due to a data aberration on non-hospitalised deaths.



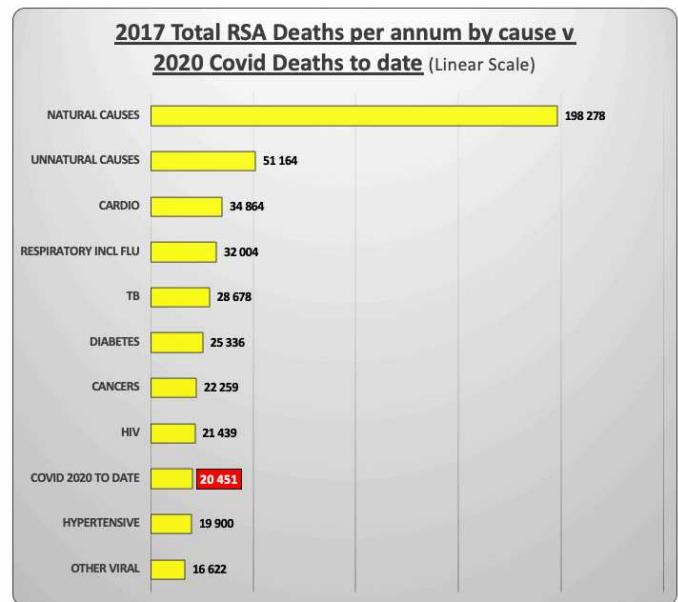
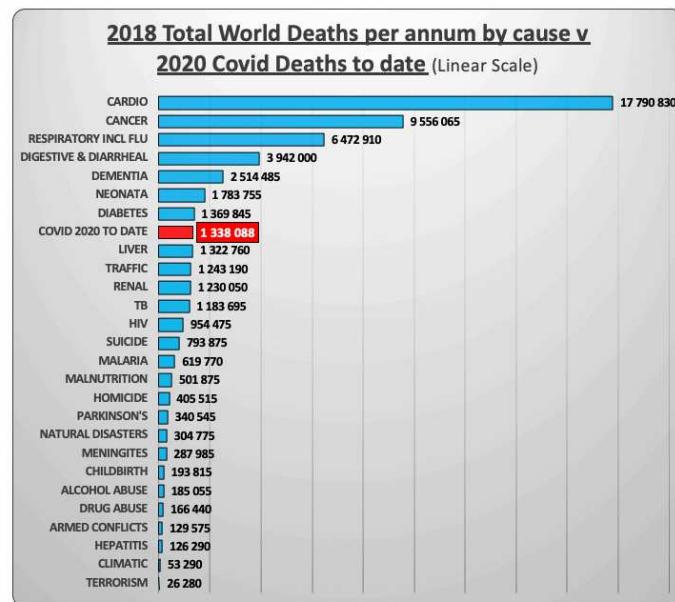
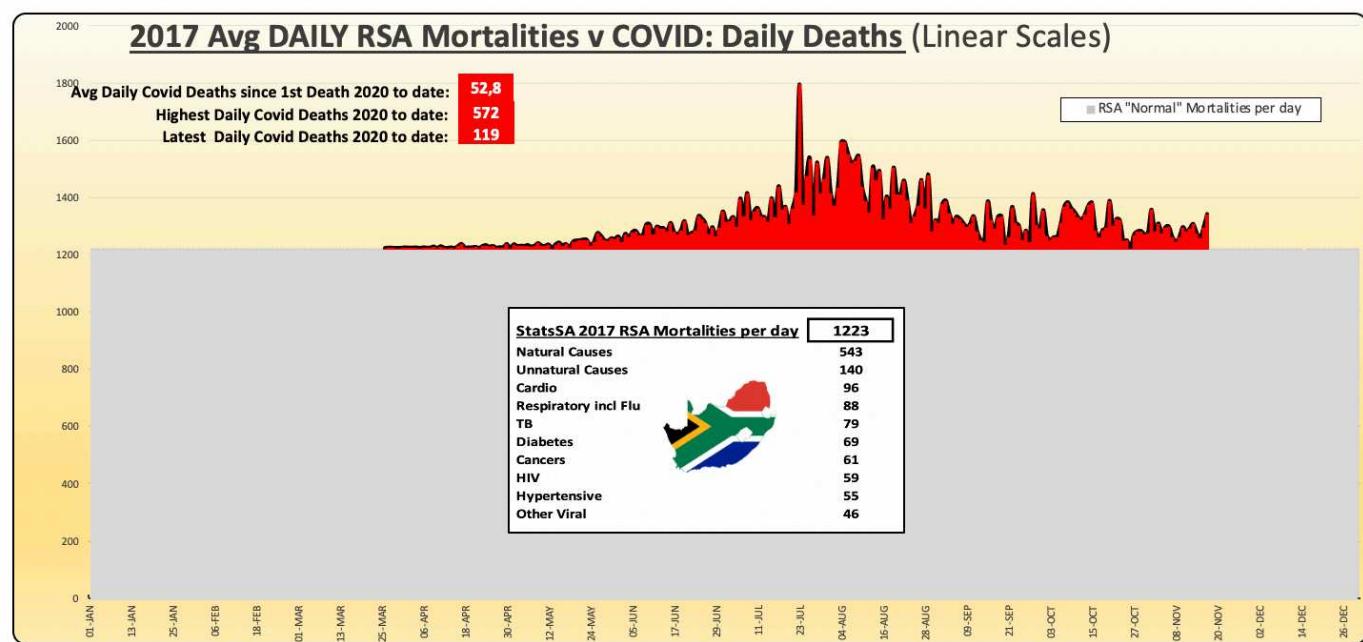


The two graphs WORLD (above) and RSA (below) attempt to put the number of Covid Deaths into some sort of perspective graphically.

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)

16 Scenarios and 3 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.

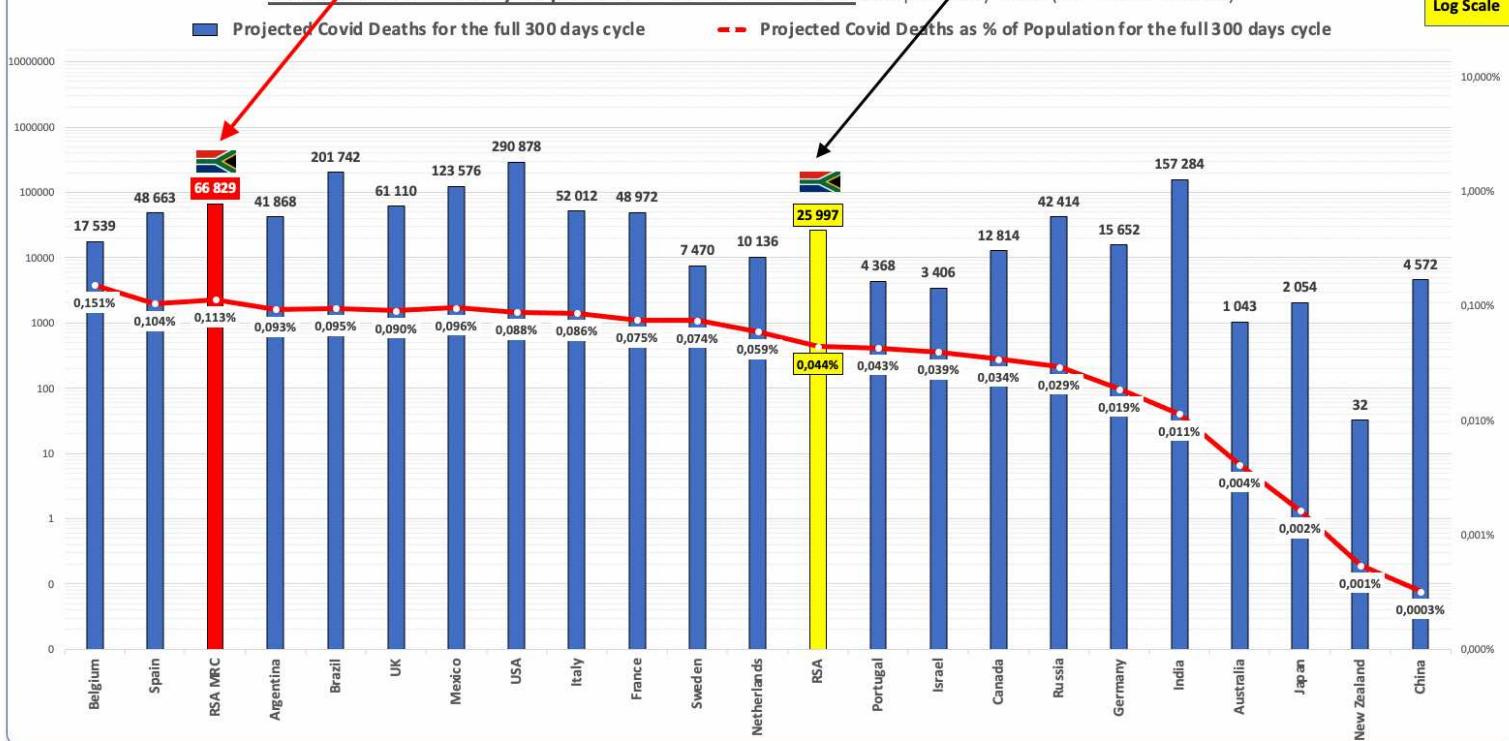
This projection uses the SA Medical Research Council data on "Excess Deaths". The assumption is that 90% of their reported Excess Deaths are probably due to Covid. The ratios are updated bi-weekly by the MRC but I apply these ratios to the official stats on a daily basis for this projection.

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)

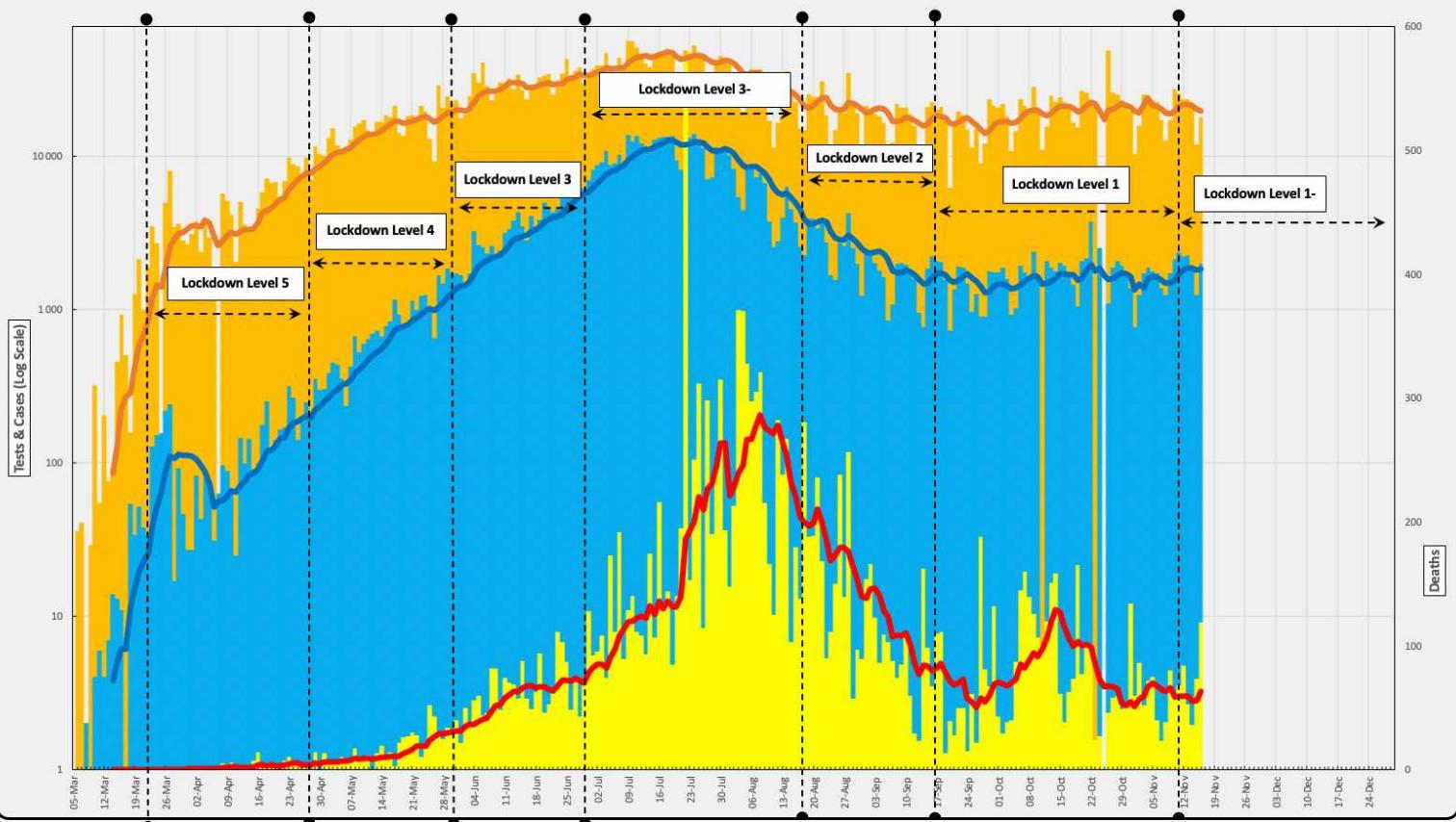
Log Scale



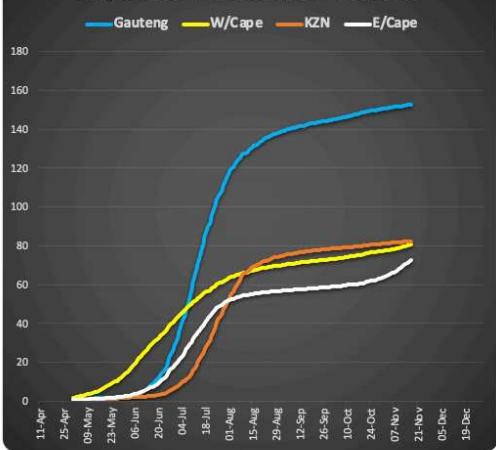
Note: Above Mortality %'s are overall projected mortality of the populations (PMR), NOT deaths of only those infected (CFR).

RSA Daily Testing v Daily Cases (Log Scale y-axis) v Daily Deaths (Non Log 2nd Y-axis)

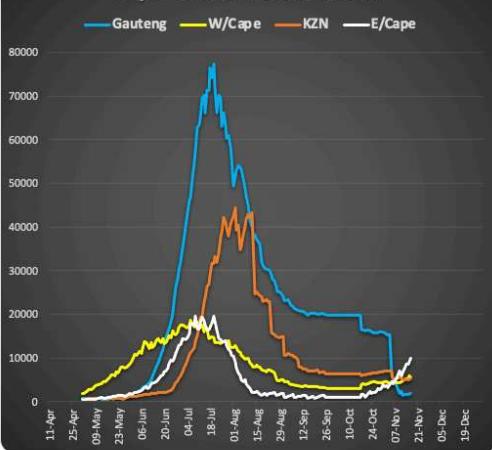
■ Daily Tests ■ Daily Cases ■ Daily Deaths ■ 10 per. Mov. Avg. (Daily Tests) ■ 10 per. Mov. Avg. (Daily Cases) ■ 10 per. Mov. Avg. (Daily Deaths)



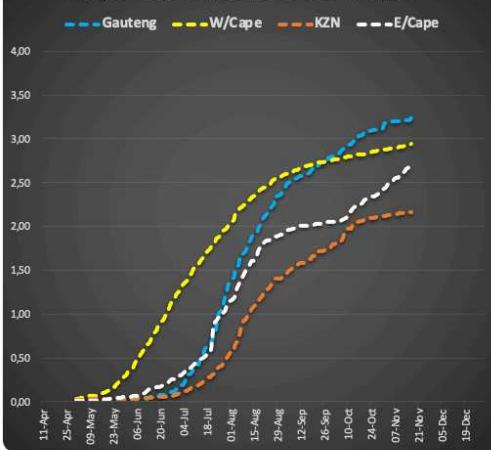
Major Prov Cum Cases per 100k PoP



Major Prov Still Active Cases



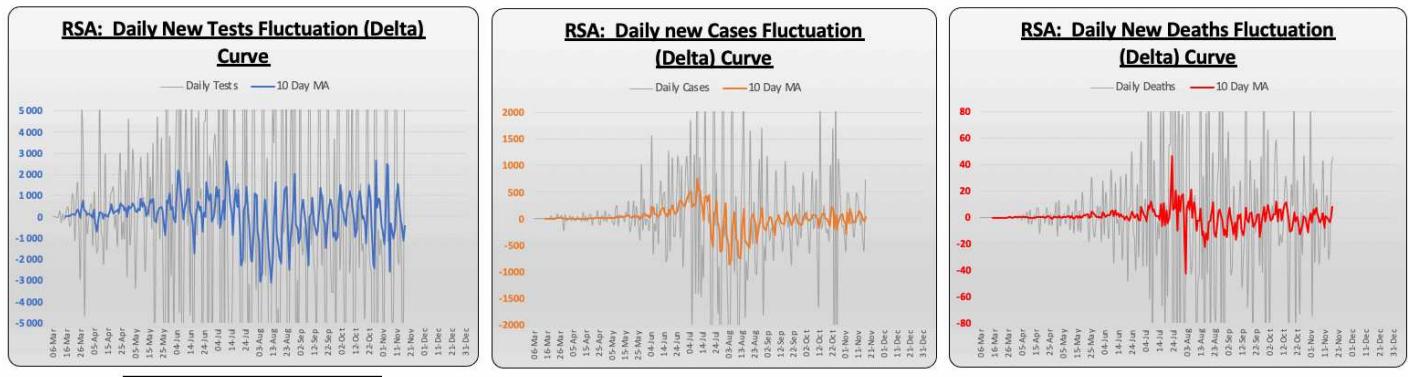
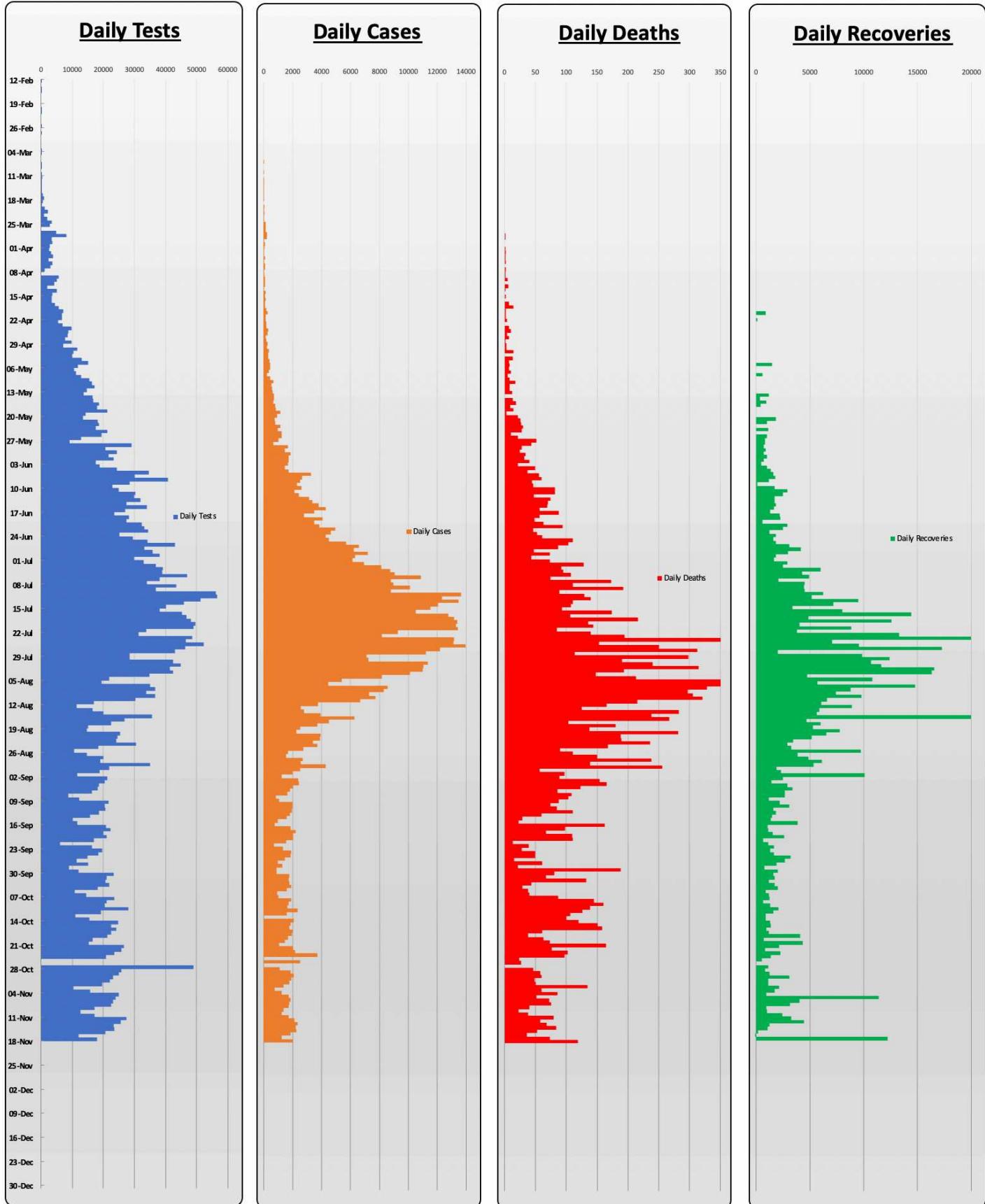
Major Prov Cum Deaths per 100k PoP



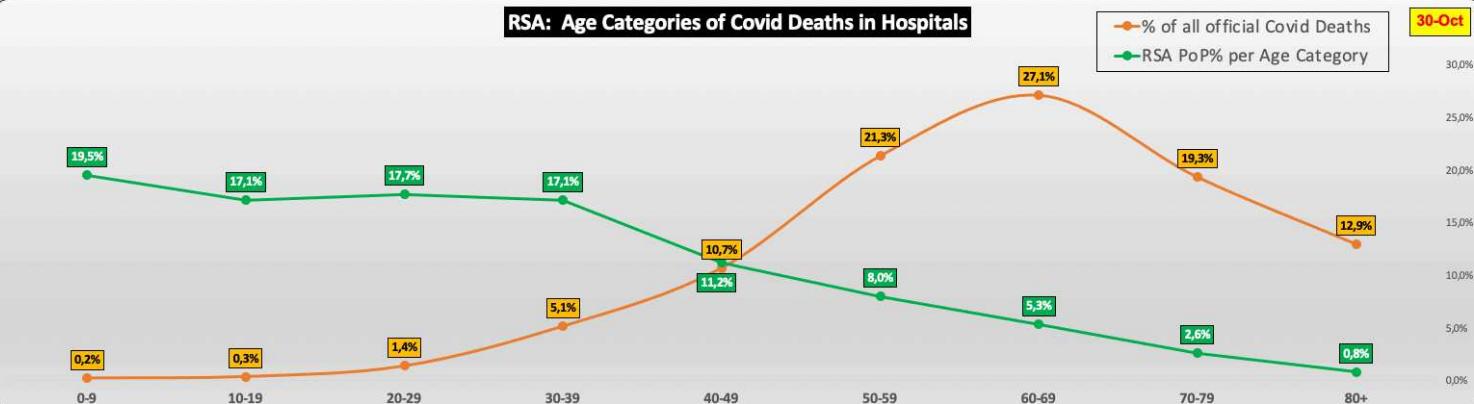
Data as at: 17 November 2020

Unless otherwise indicated

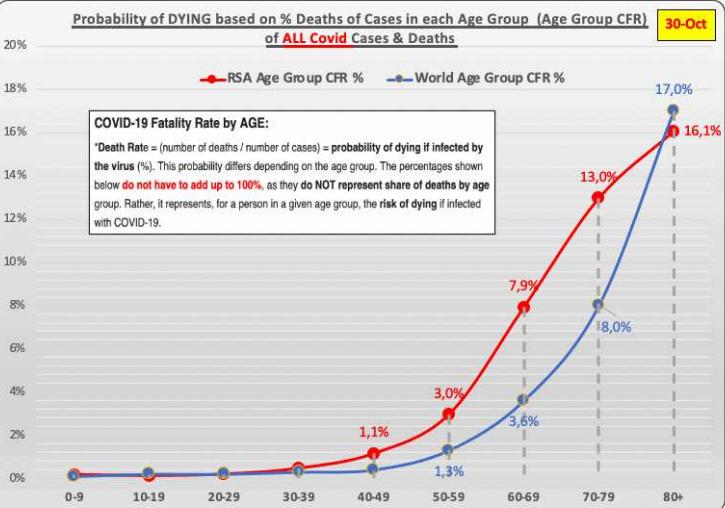
hdg 17 November 2020



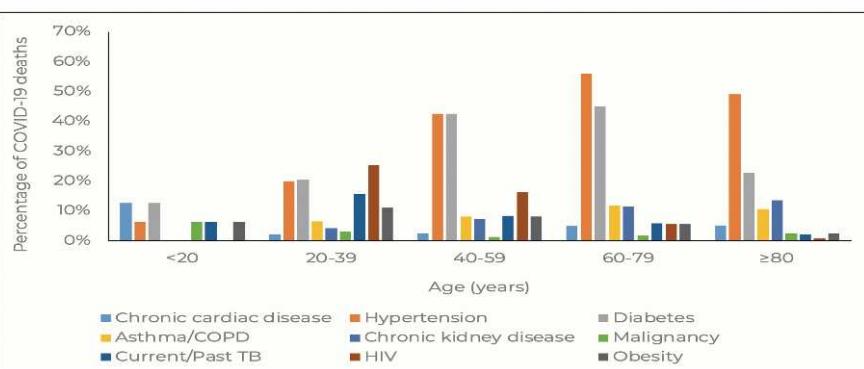
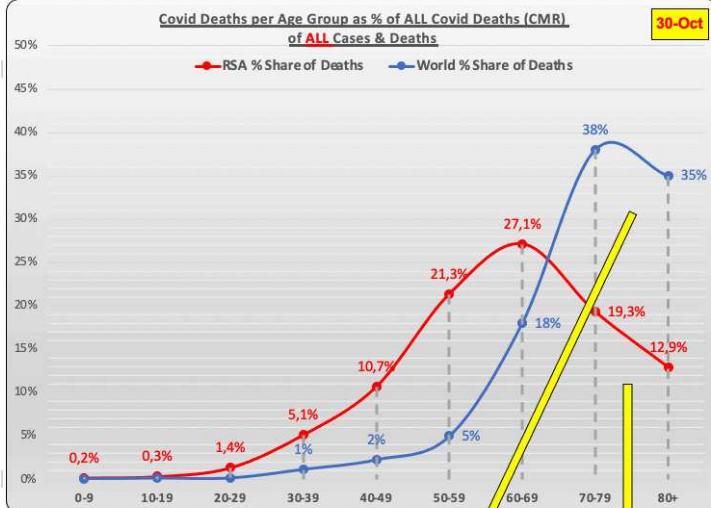
RSA: Age Categories of Covid Deaths in Hospitals



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

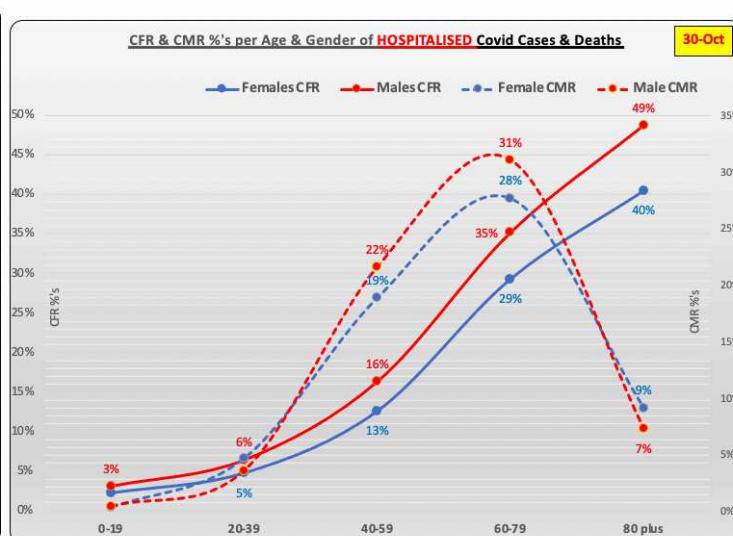
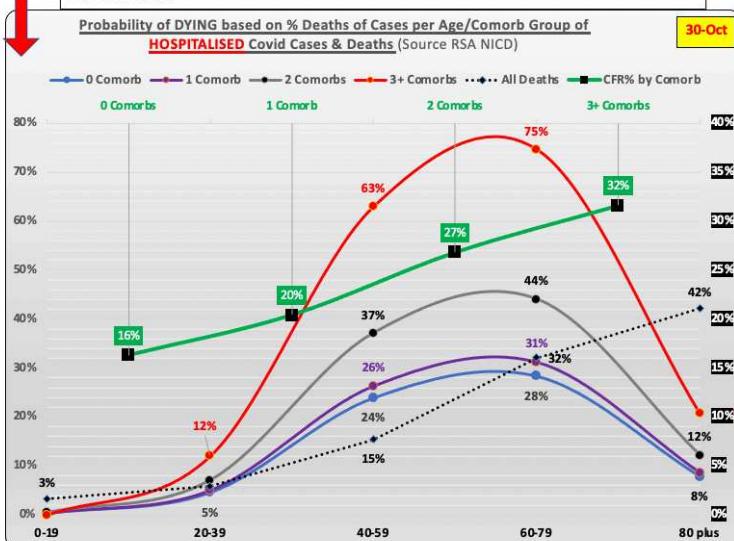
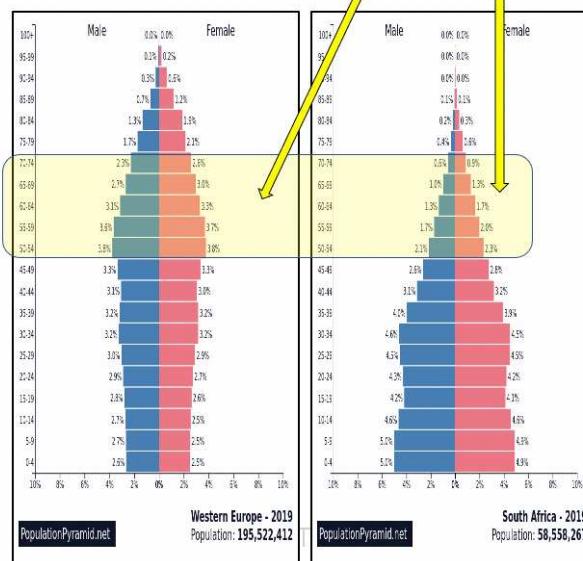


Covid Deaths per Age Group as % of ALL Covid Deaths (CMR) of ALL Cases & Deaths



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.

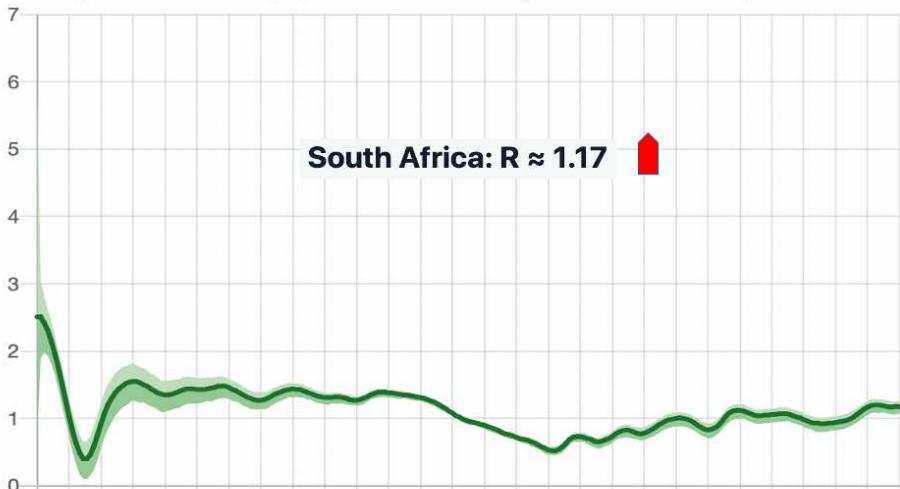


Covid REPRODUCTIVE NUMBER (Rt) in RSA & Provinces

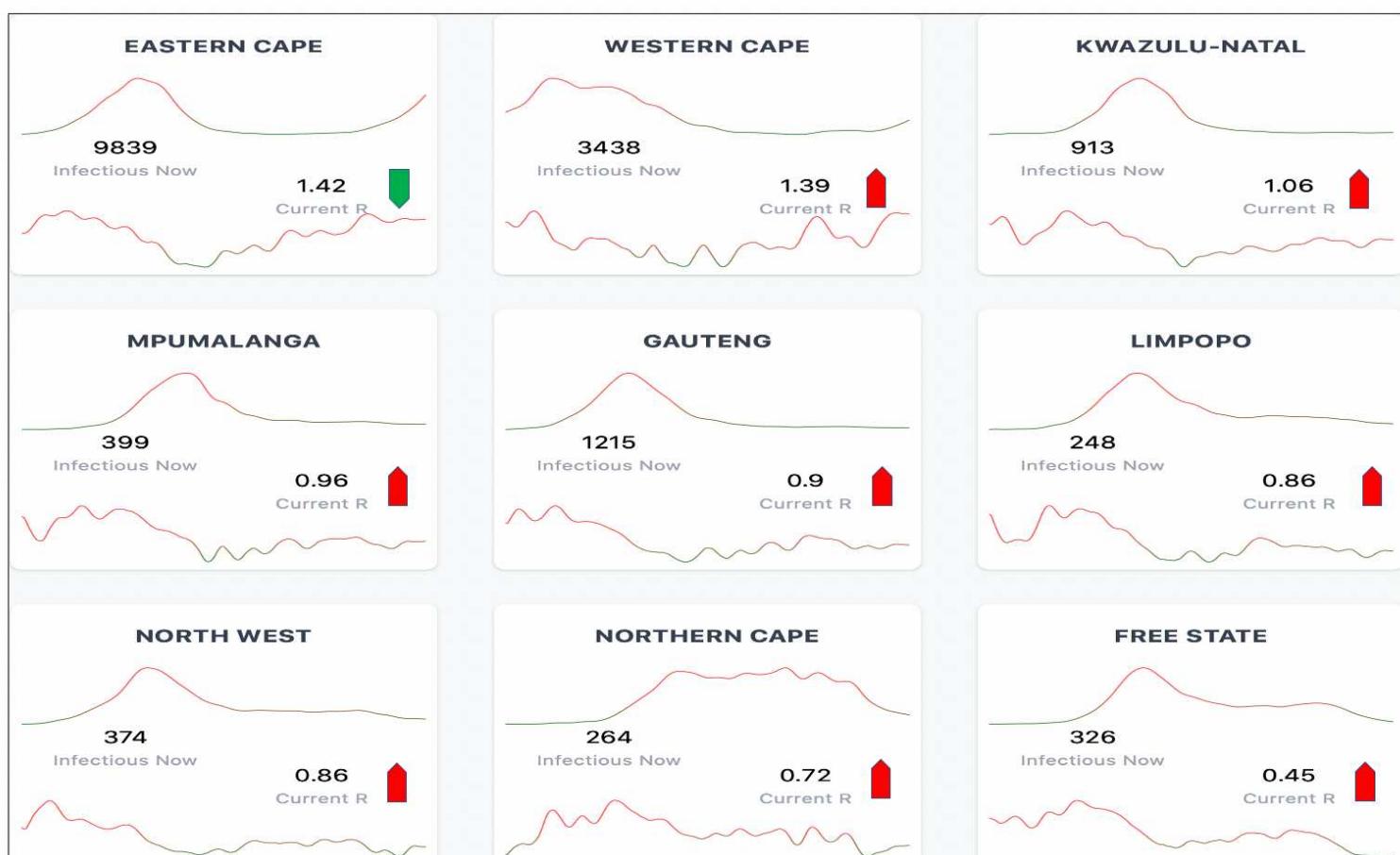
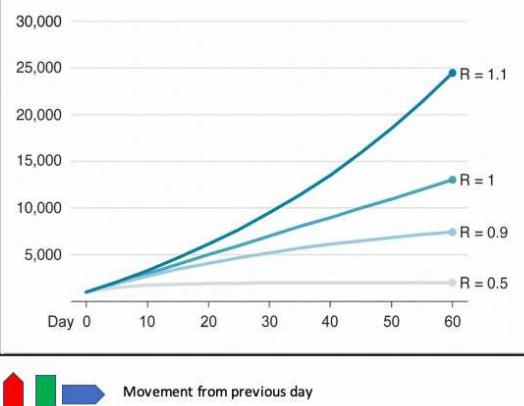
Data as at: 17 November 2020

Page 5.3

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

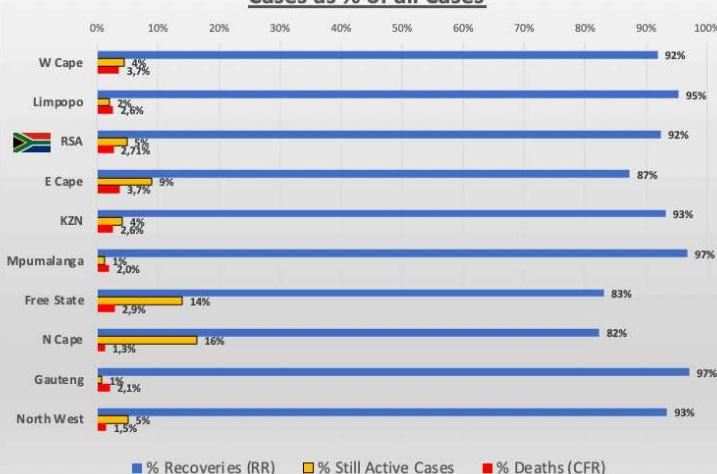


How 1,000 cases would increase under different infection rates

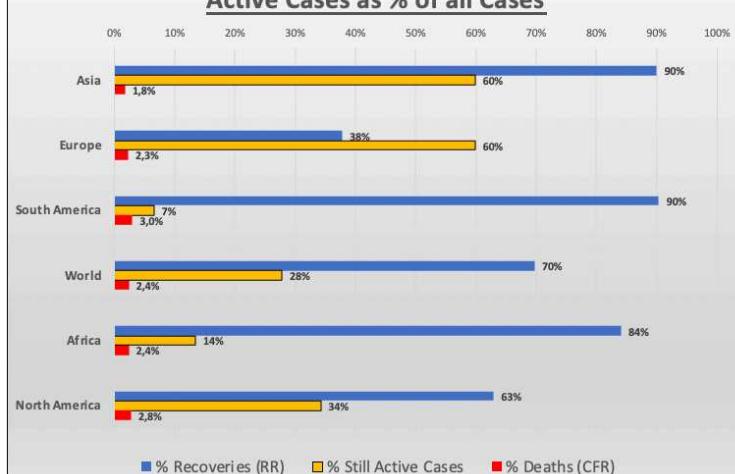


Rt graphs from: <https://reproduction.live/world/ZA>

RSA Deaths (CFR), Recoveries (RR) and still-Active Cases as % of all Cases



World Deaths (CFR), Recoveries (RR) and still-Active Cases as % of all Cases

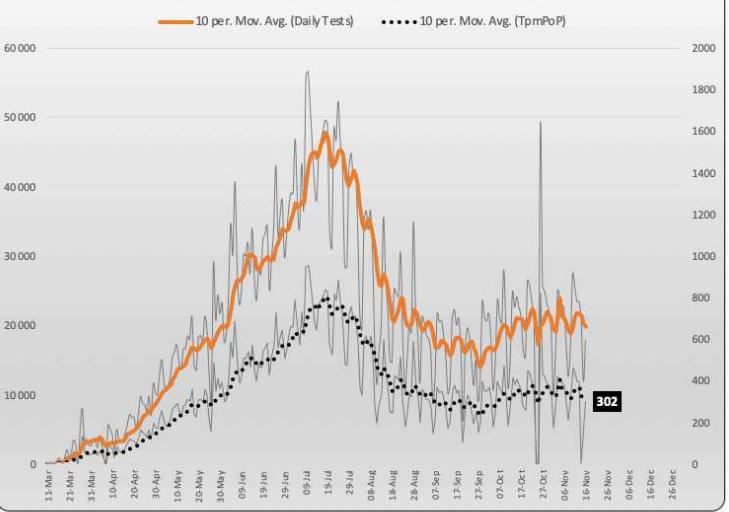


Data as at: 17 November 2020

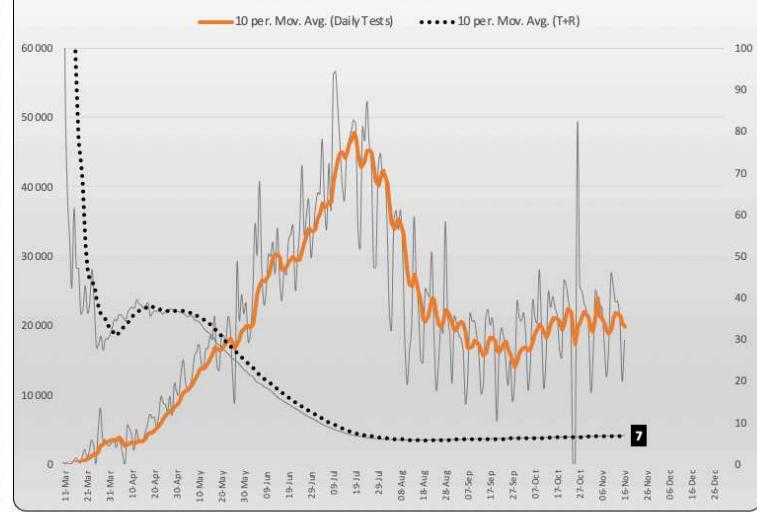
Unless otherwise indicated

hdg 17 November 2020

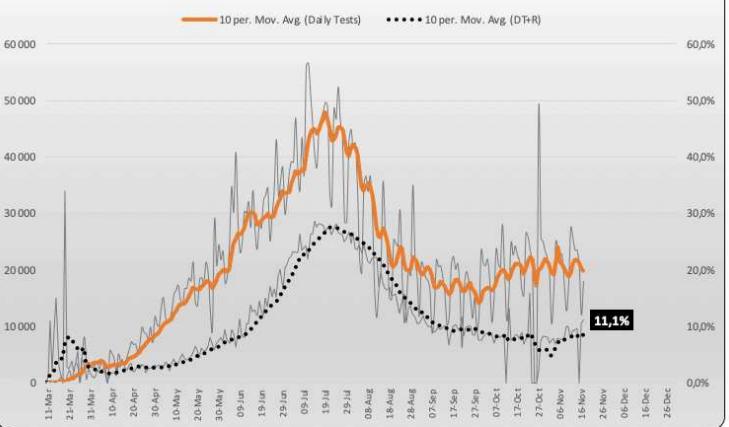
RSA: Daily Tests conducted per million PoP



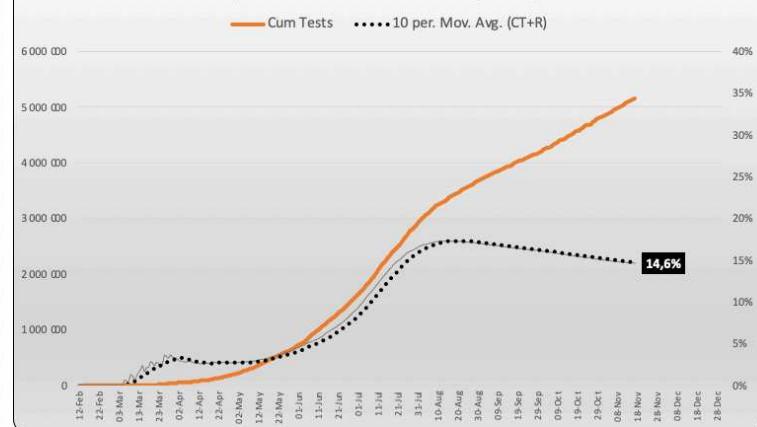
RSA: Daily Tests per +Case



RSA: Daily Tests Positivity %

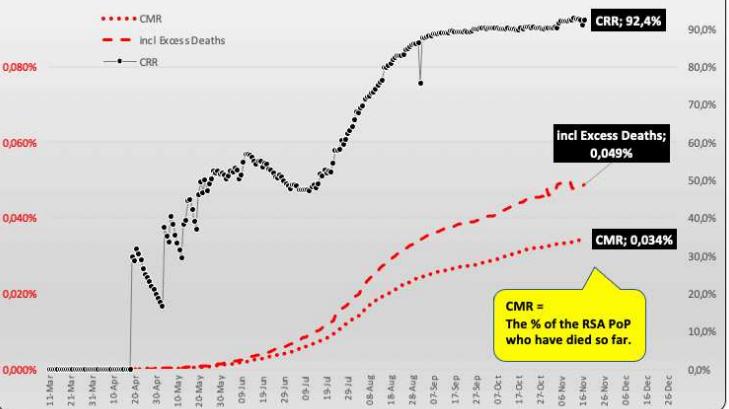


RSA: Cum Tests Positivity Rate

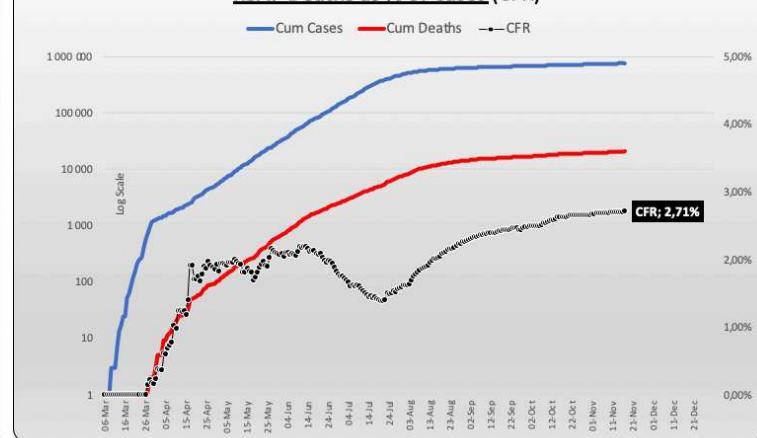


RSA: Case Recovery Rate (CRR) & Case Mortality Rate (CMR)

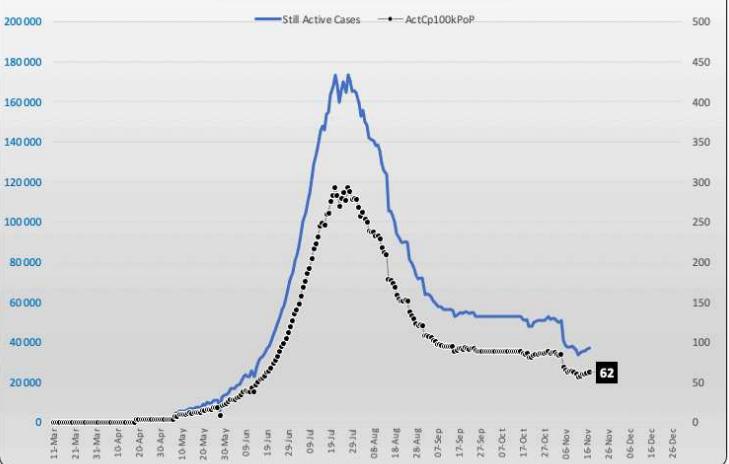
& CMR incl Excess Deaths



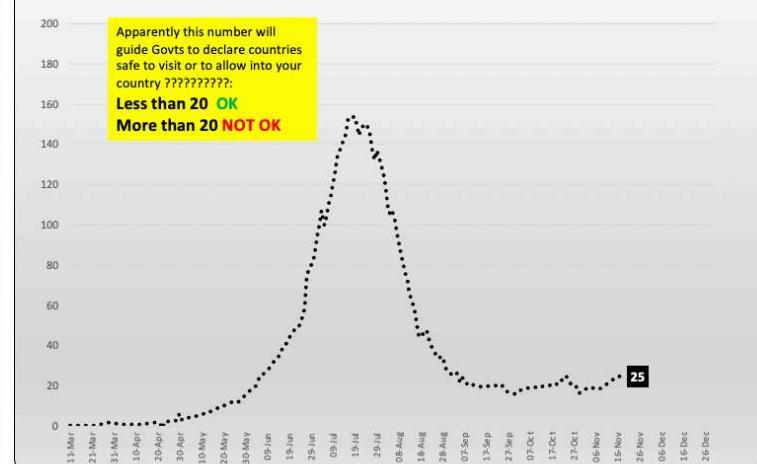
RSA: Deaths as % of Cases (CFR)



RSA: Active Cases per 100k PoP

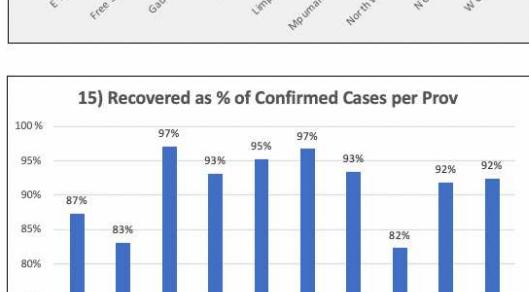
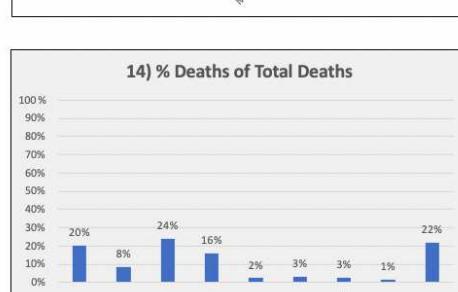
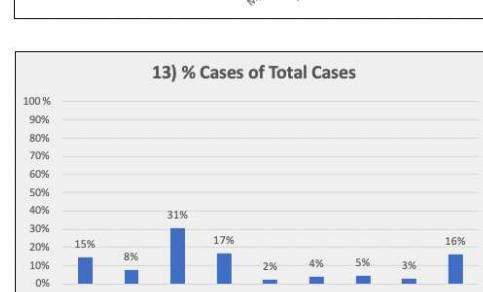
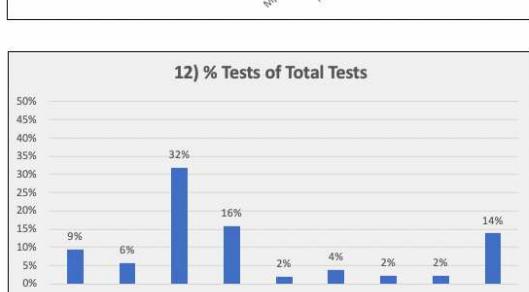
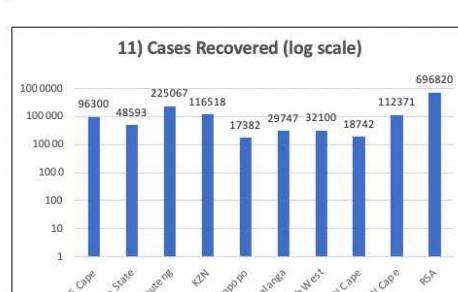
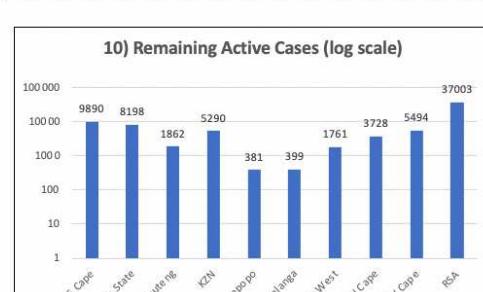
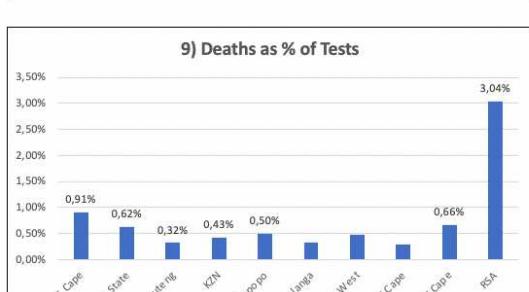
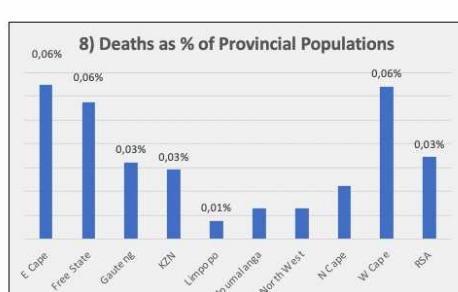
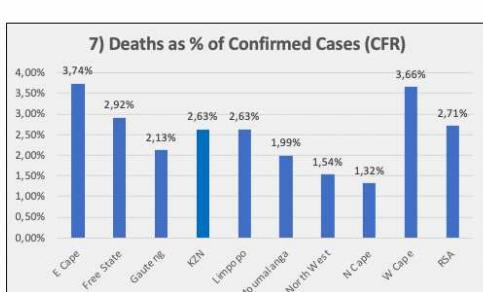
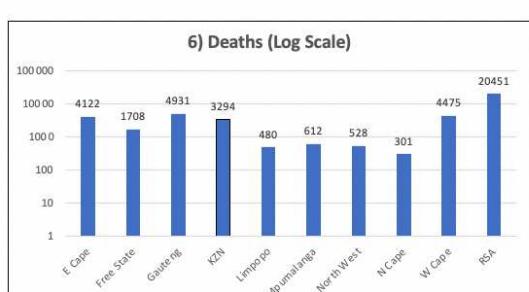
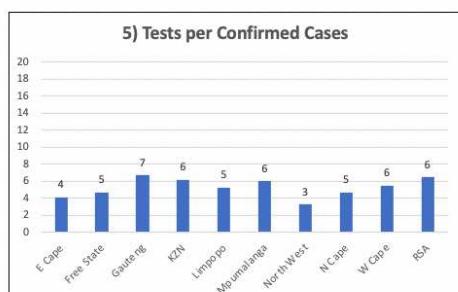
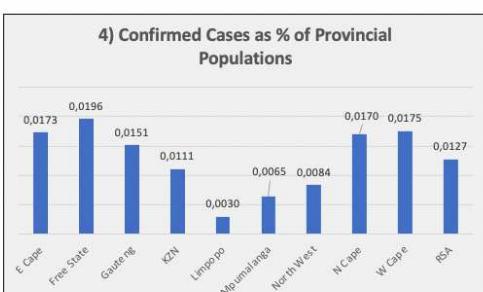
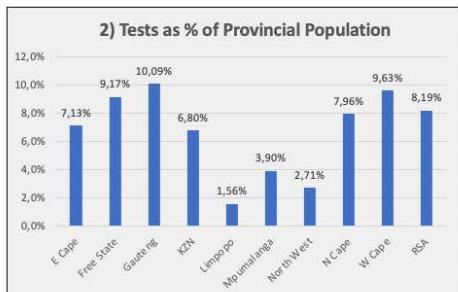
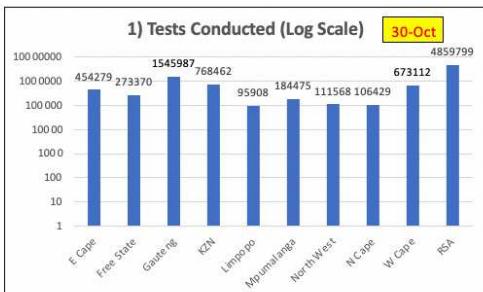
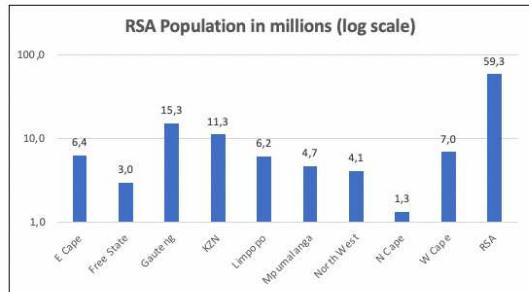


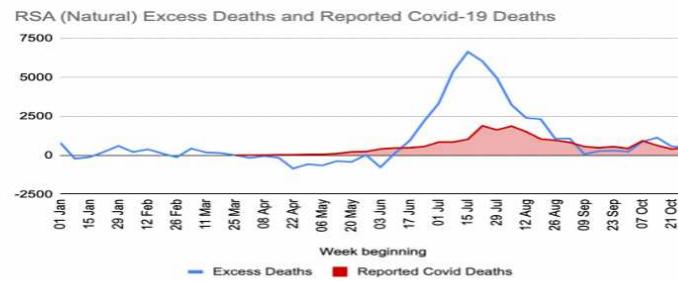
RSA: Avg New Cases per week per 100k PoP



RSA Covid Stats: National & Provincial Analysis

Page 6





Provinces

