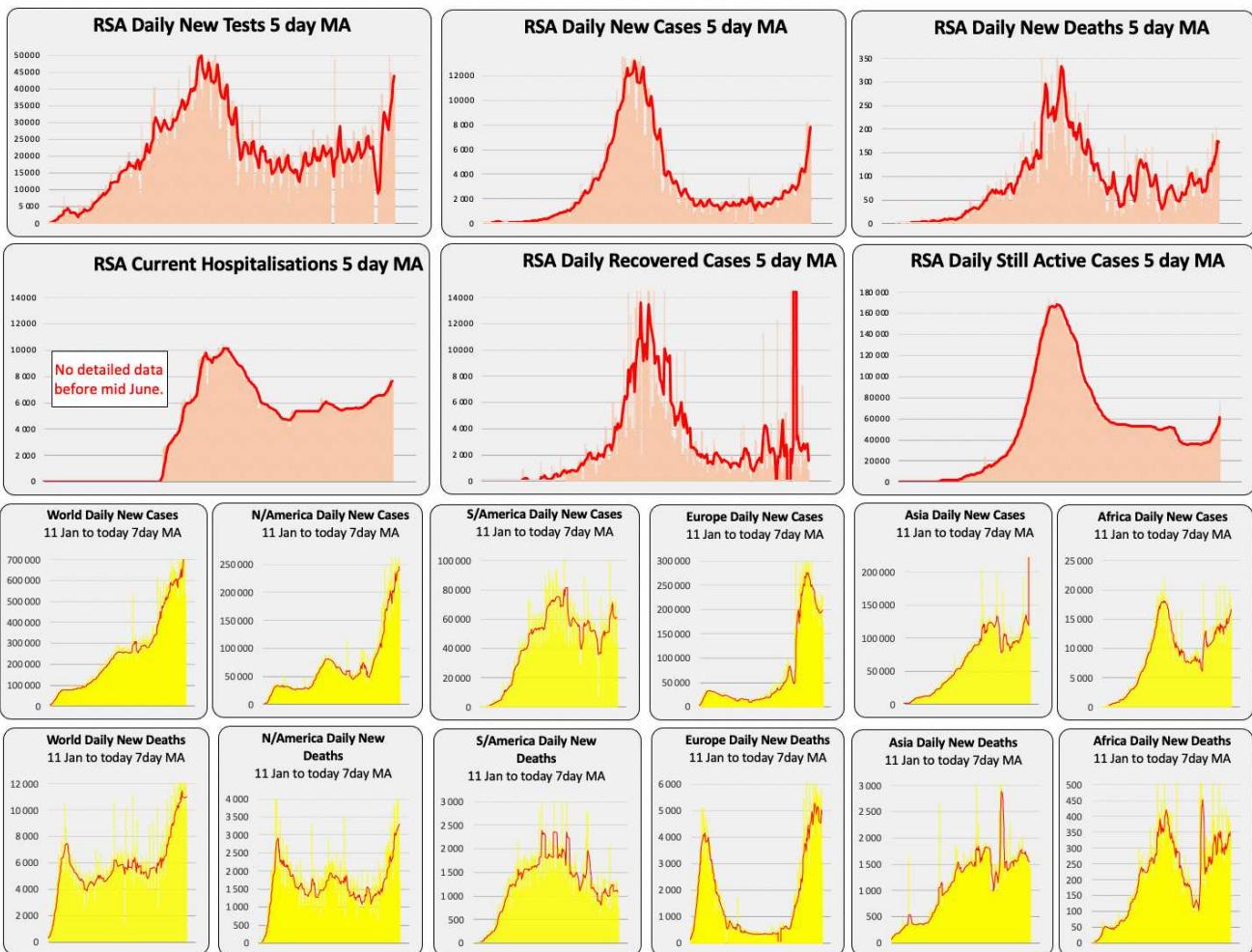
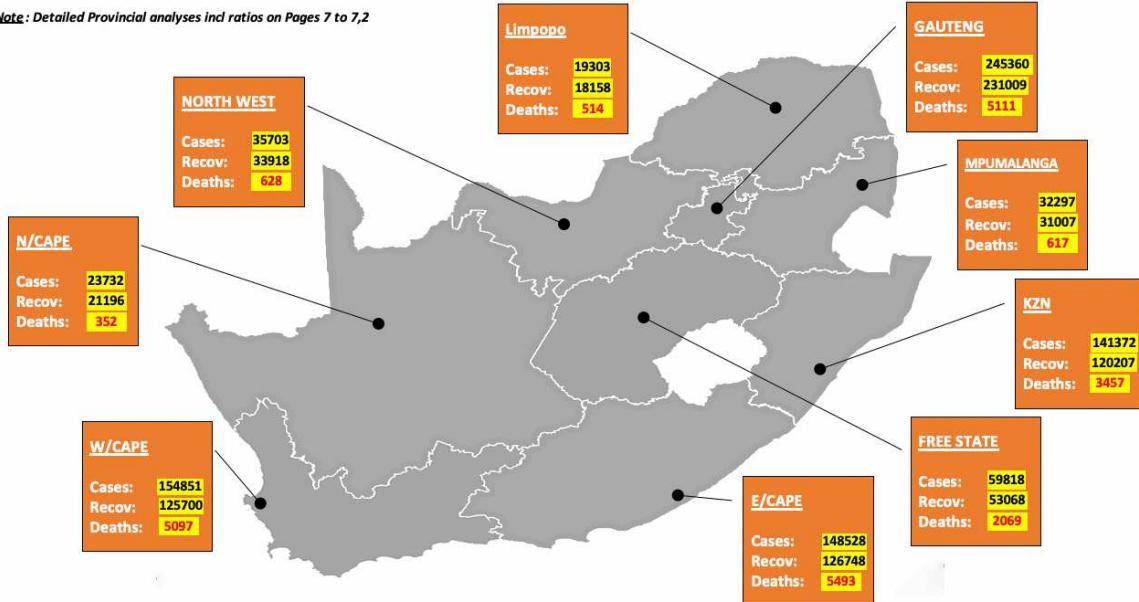


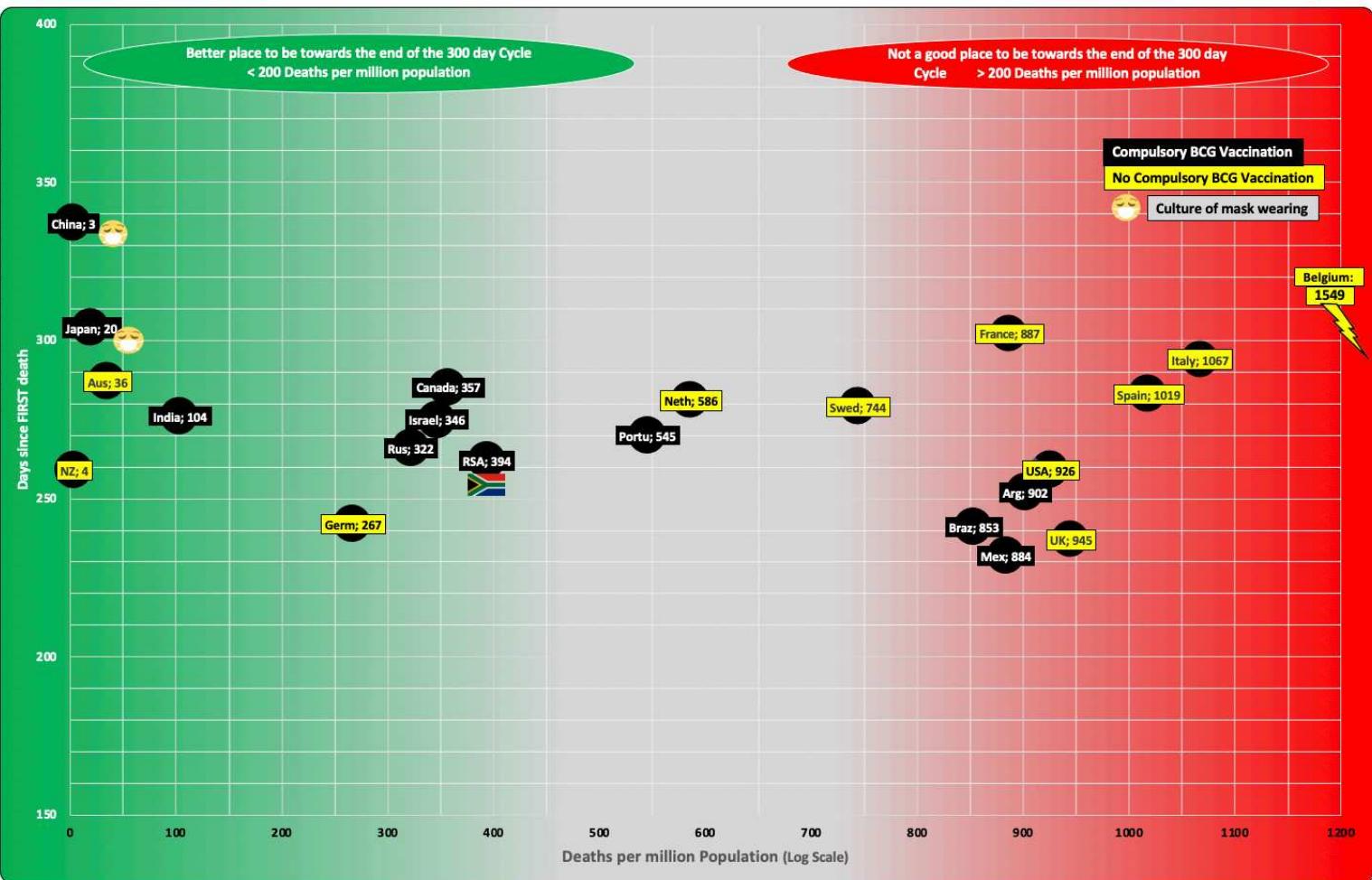
Cum +Cases	Daily Change	RSA COVID-19 DASHBOARD			% +Cases who Died (CFR)	Cum Recoveries
860 964	7 999	14 December 2020			2,71%	761 011
Active +Cases	+Cases per mill PoP	Cum Deaths			% of RSA PoP who Died (CMR)	
76 677	14 517	↑			0,0394%	
Deaths Avg Age	Deaths Min Age	23 338			Deaths Median Age	
61,7	0,2	178			63,2	
Female :	58,2%	Cases	Deaths			
Male :	41,8%		50,5%			
				30-Nov		

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



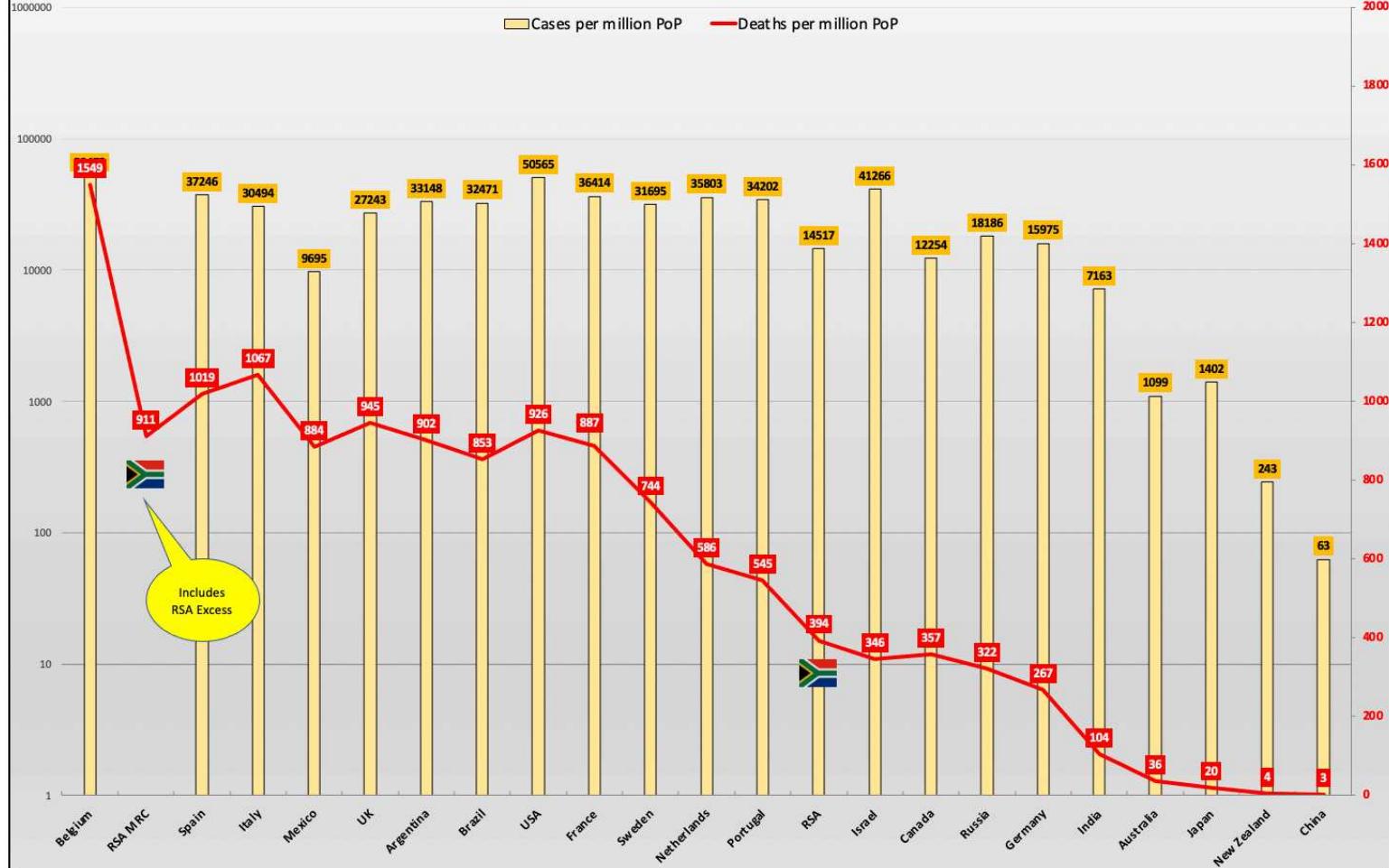
## Covid Reported Deaths per million Population & Days since 1st Covid Death

Page 2



## **Current Cum Cases & Cum Deaths per million PoP**

(Two axes primary Y Log 2nd Y Linear)



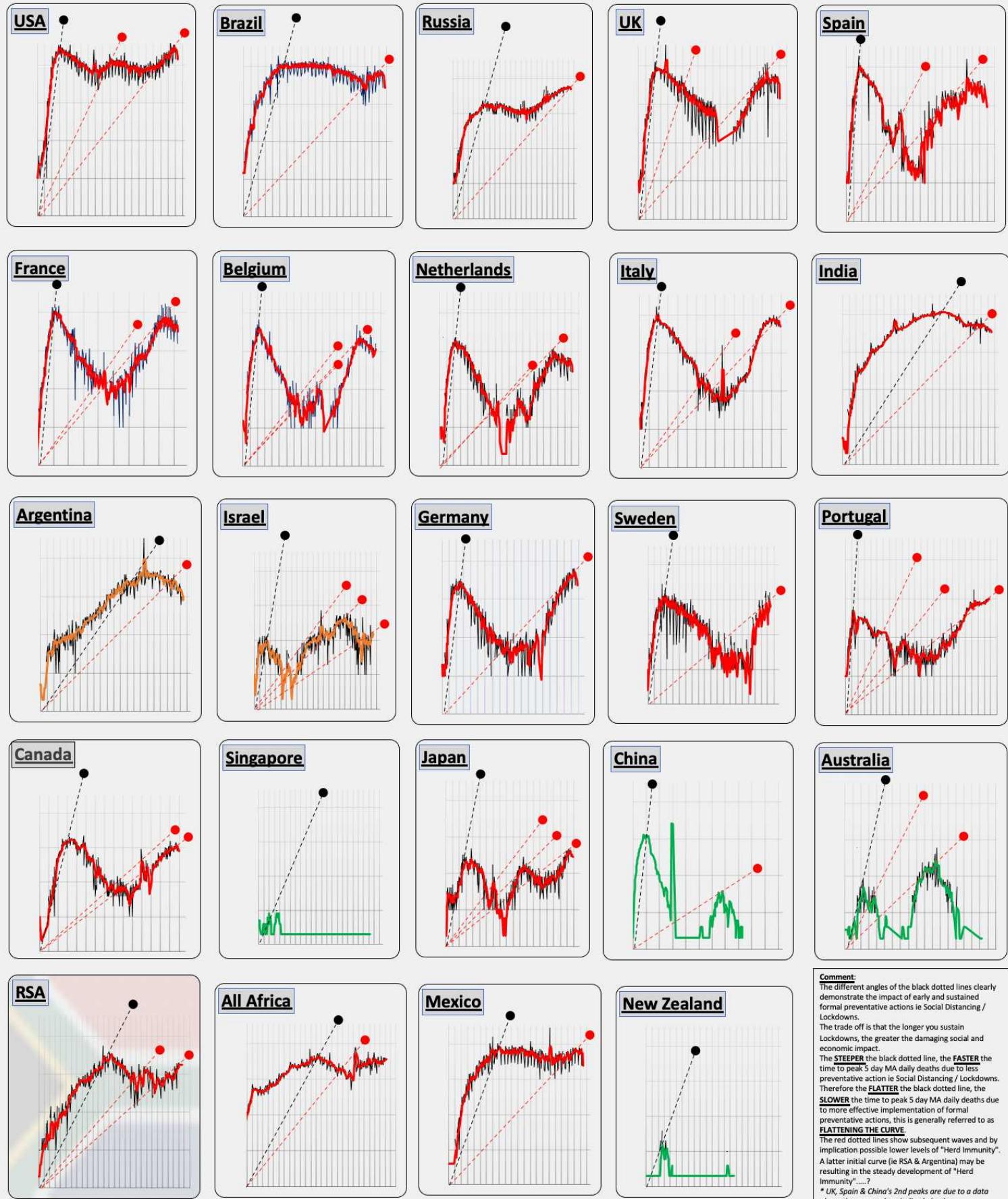
## Daily Deaths Curves & Rate of Onset and next Wave "Inclinometers"

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

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

●	Onset/1st wave
●	2nd & 3rd waves

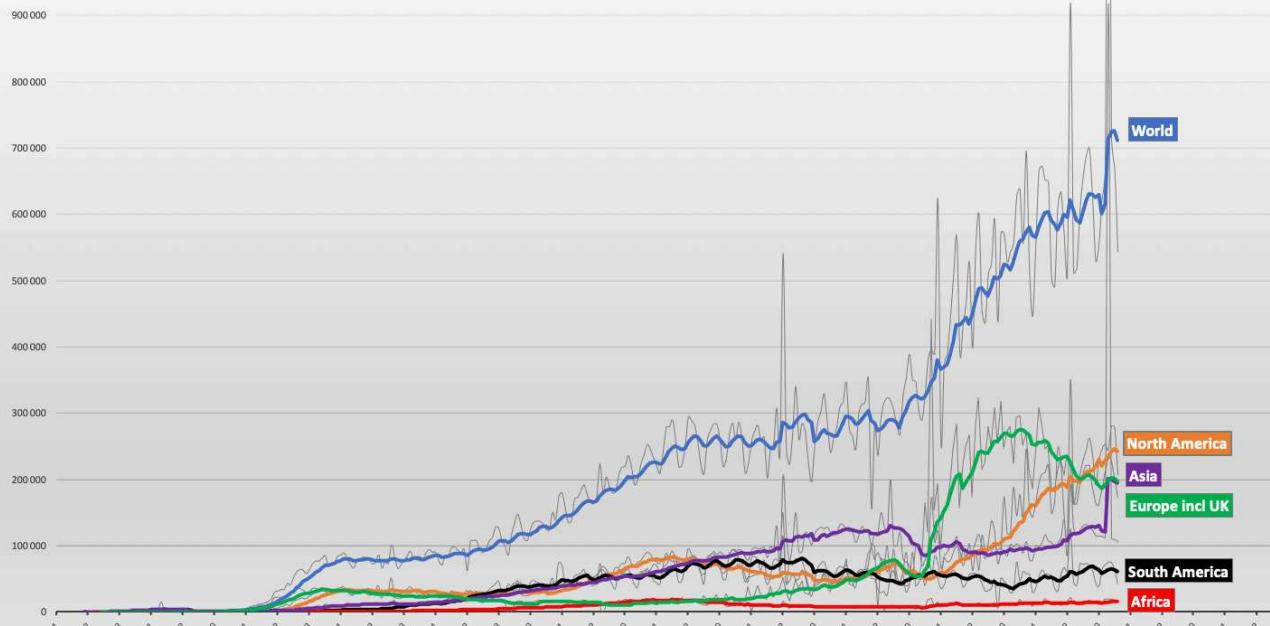
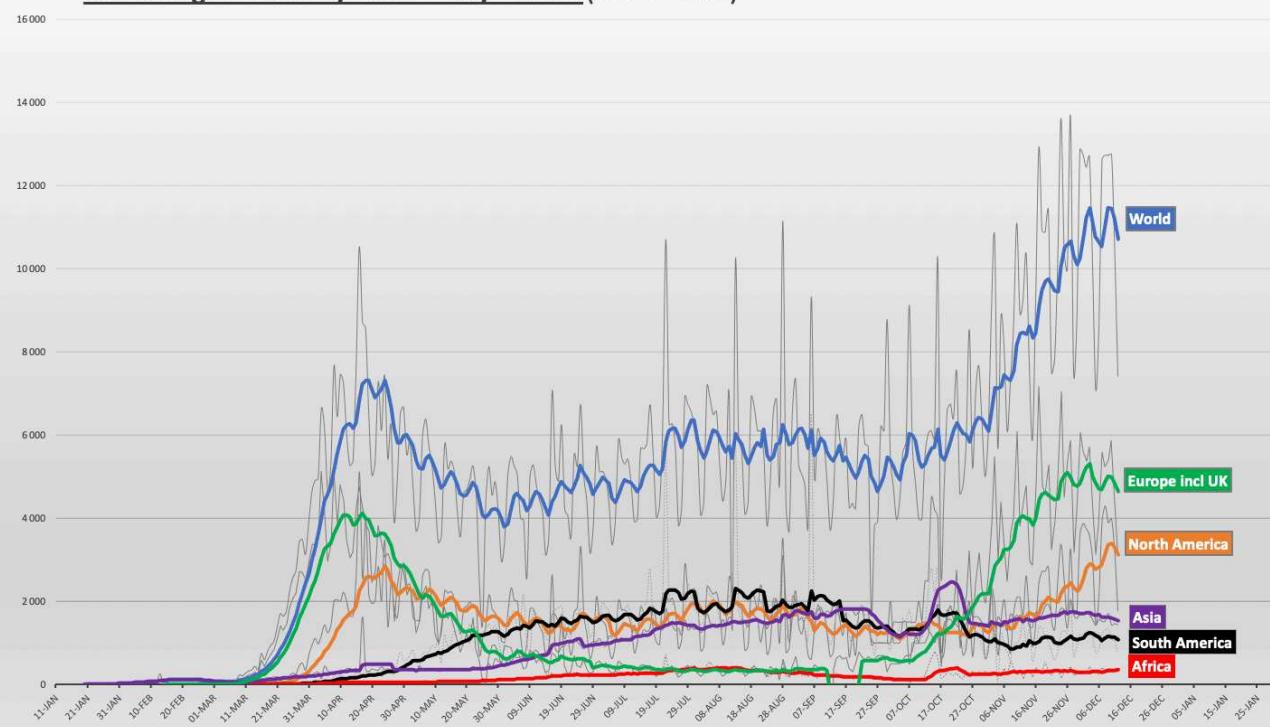
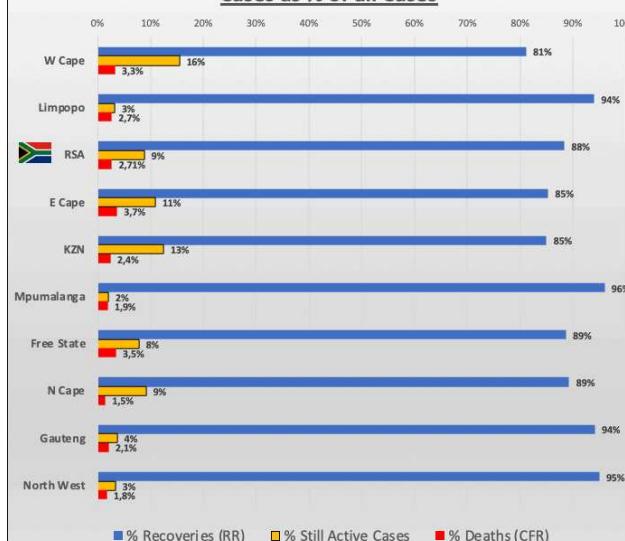
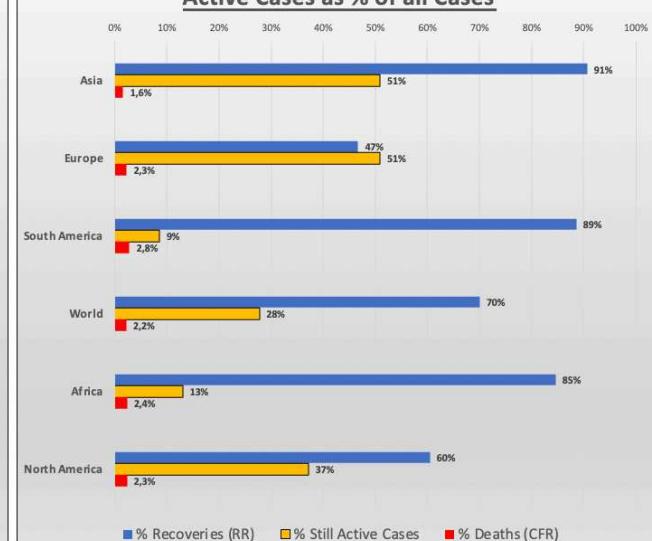


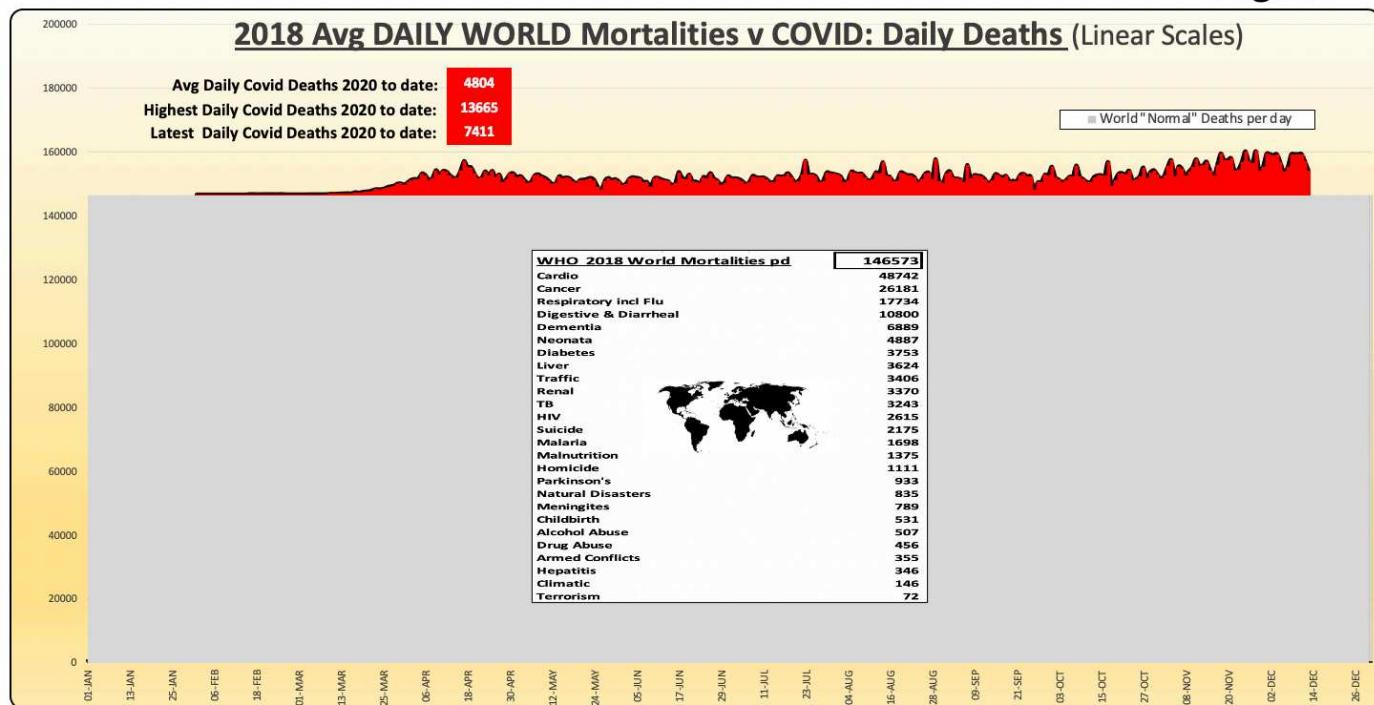
**Comment:**  
The different angles of the black dotted lines clearly demonstrate the impact of early and sustained formal preventative actions ie Social Distancing / Lockdowns.

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.

\* UK, Spain & China's 2nd peaks are due to a data aberration on non-hospitalised deaths.

1 000 000

World Regions: 10 Day MA of Daily Cases (Linear Scale)World Regions: 10 Day MA of Daily Deaths (Linear Scale)RSA Deaths (CFR), Recoveries (RR) and still-Active Cases as % of all CasesWorld Deaths (CFR), Recoveries (RR) and still-Active Cases as % of all Cases

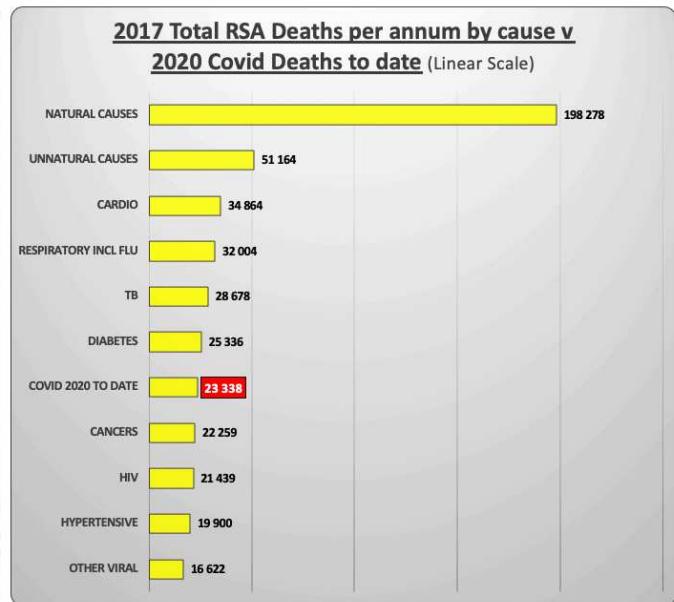
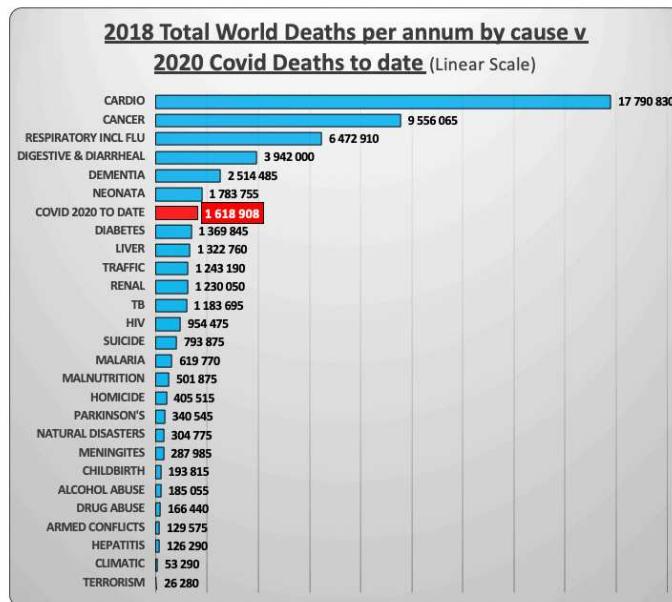
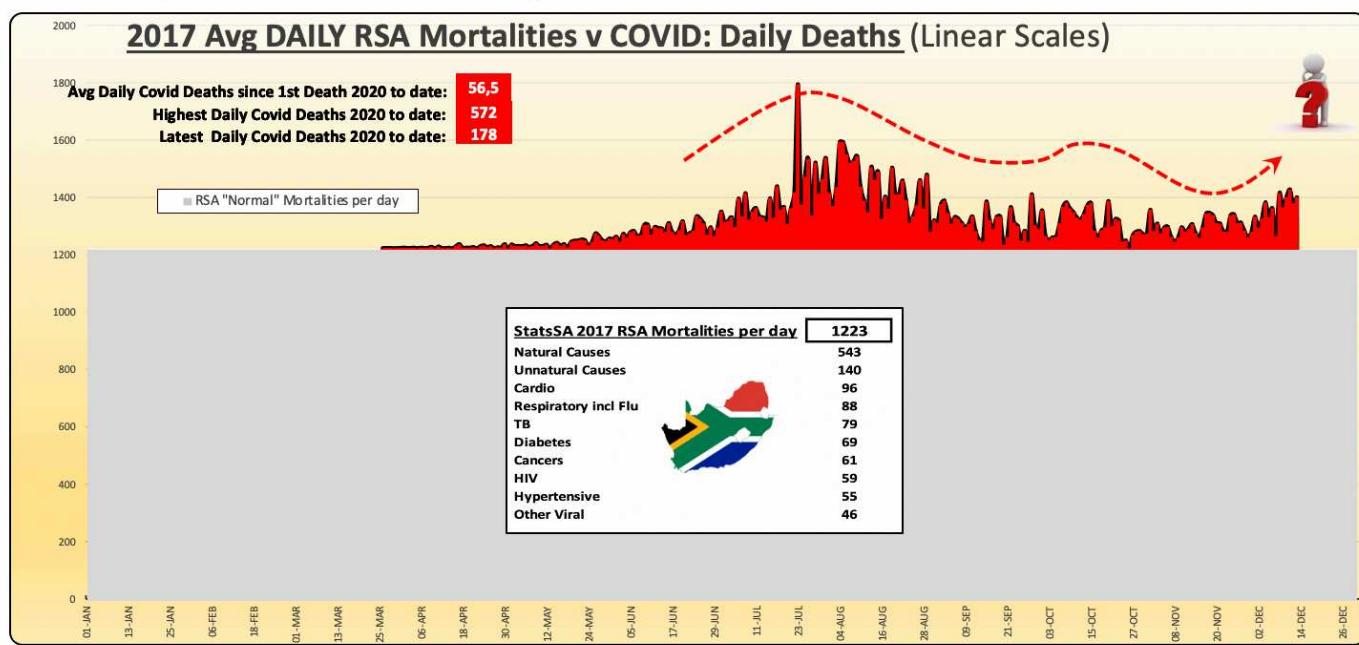


The two graphs WORLD (above) and RSA (below) attempt to put the number of Covid Deaths into some sort of perspective graphically.

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.

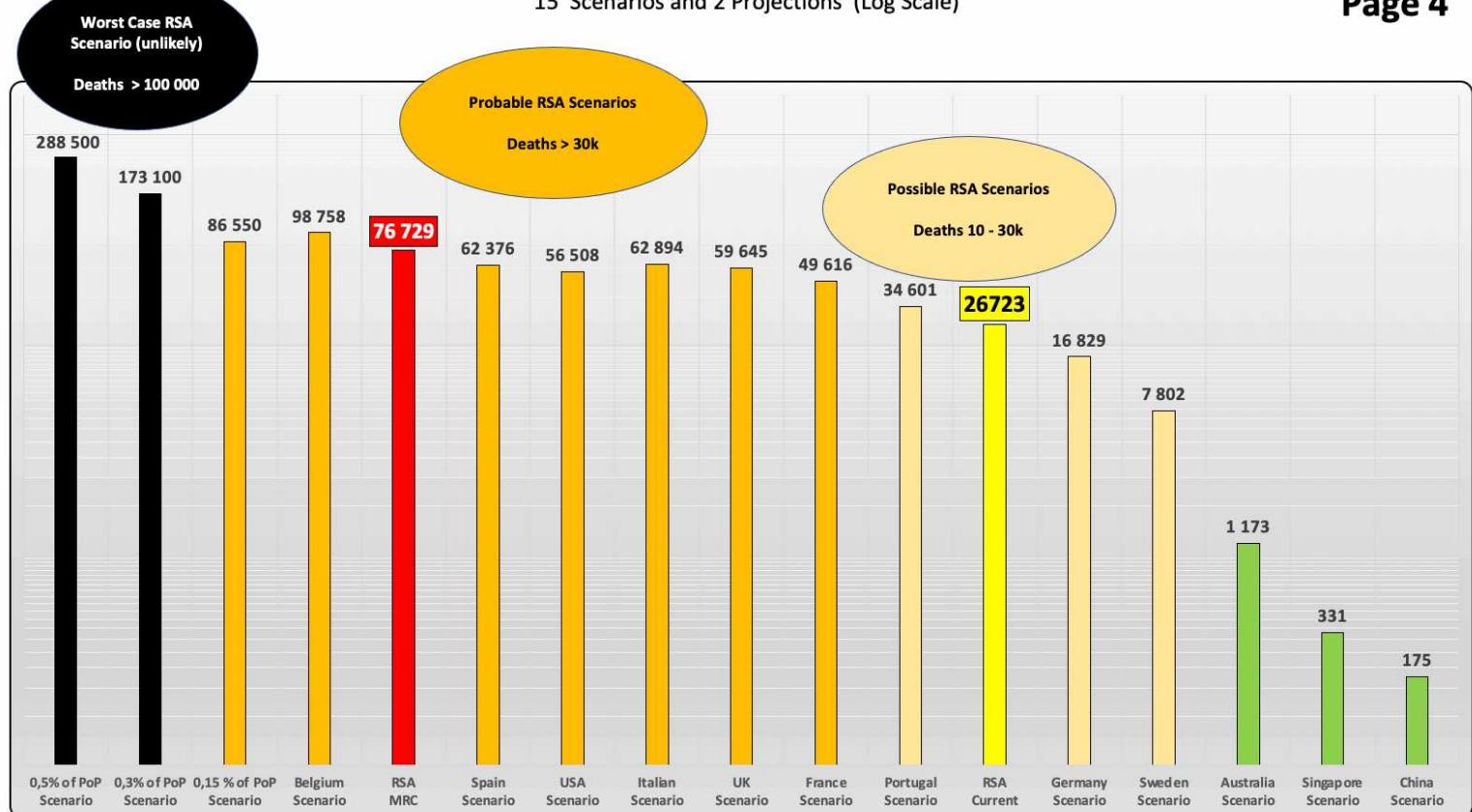
Obviously some of the Covid Deaths will "overlap" with the "normal" Deaths due to comorbidities.



# 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.

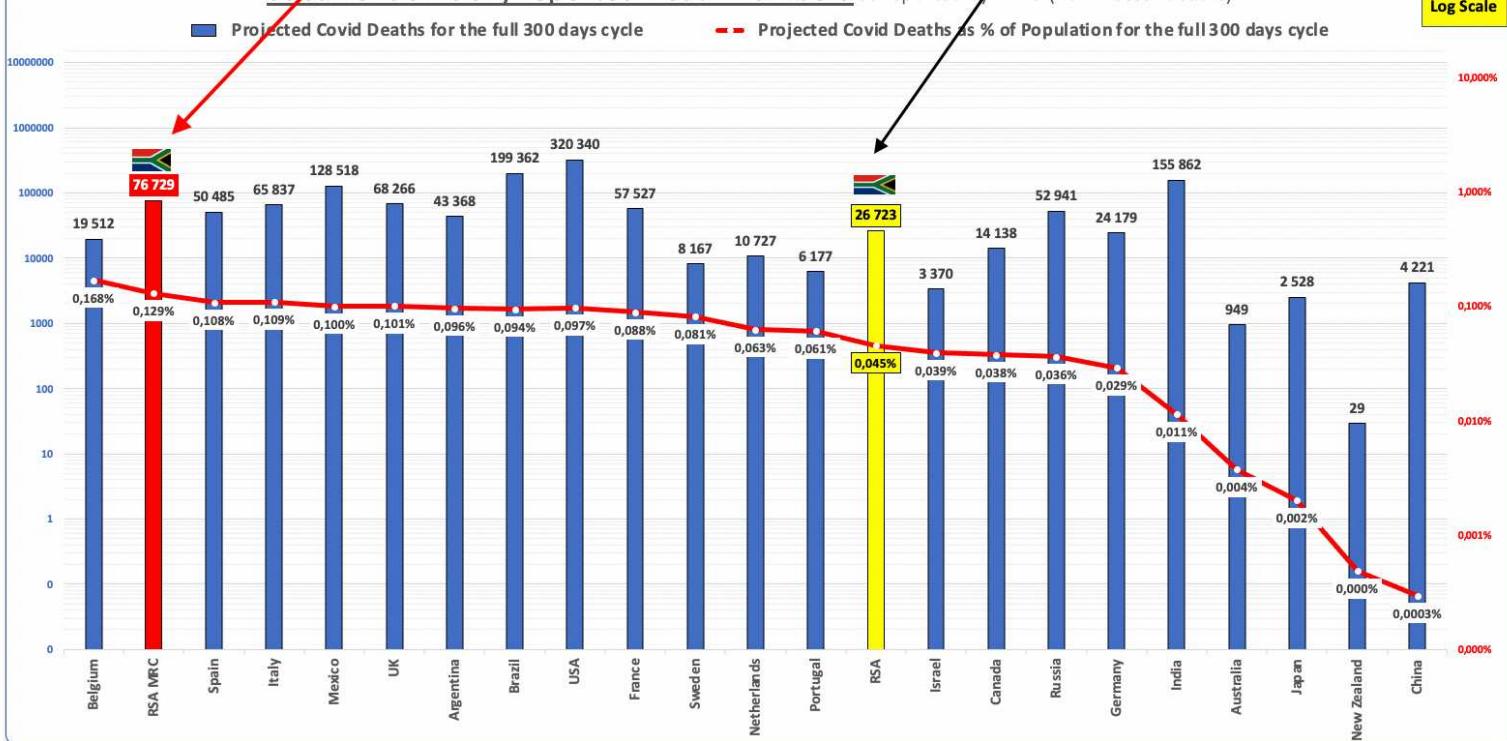
This projection uses the SA Medical Research Council data on "Excess Deaths". The assumption is that 90% of their reported Excess Deaths are probably due to Covid. The ratios are updated bi-weekly by the MRC but I apply these ratios to the official stats on a daily basis for this projection.

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)

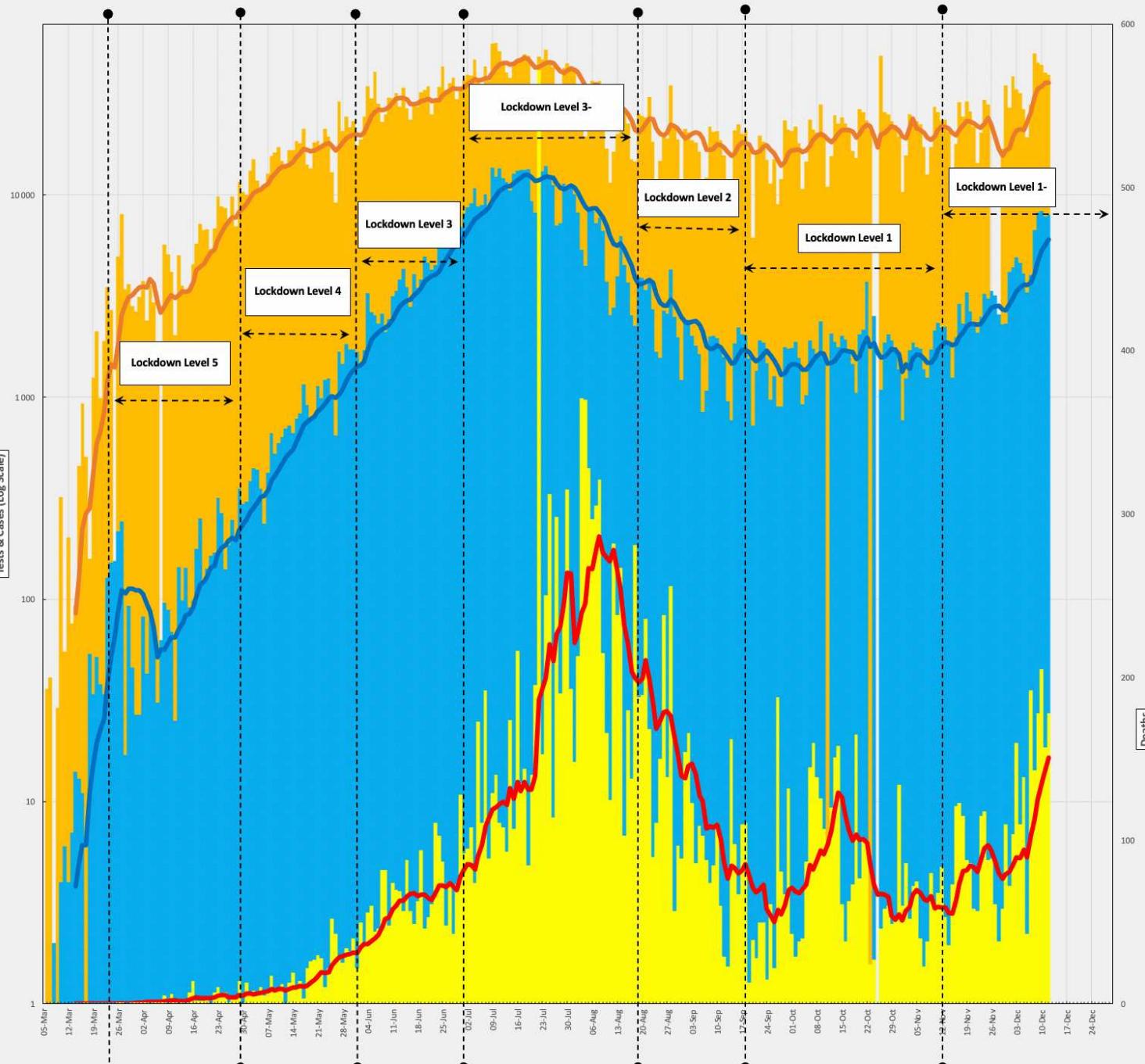
Log Scale



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 (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)



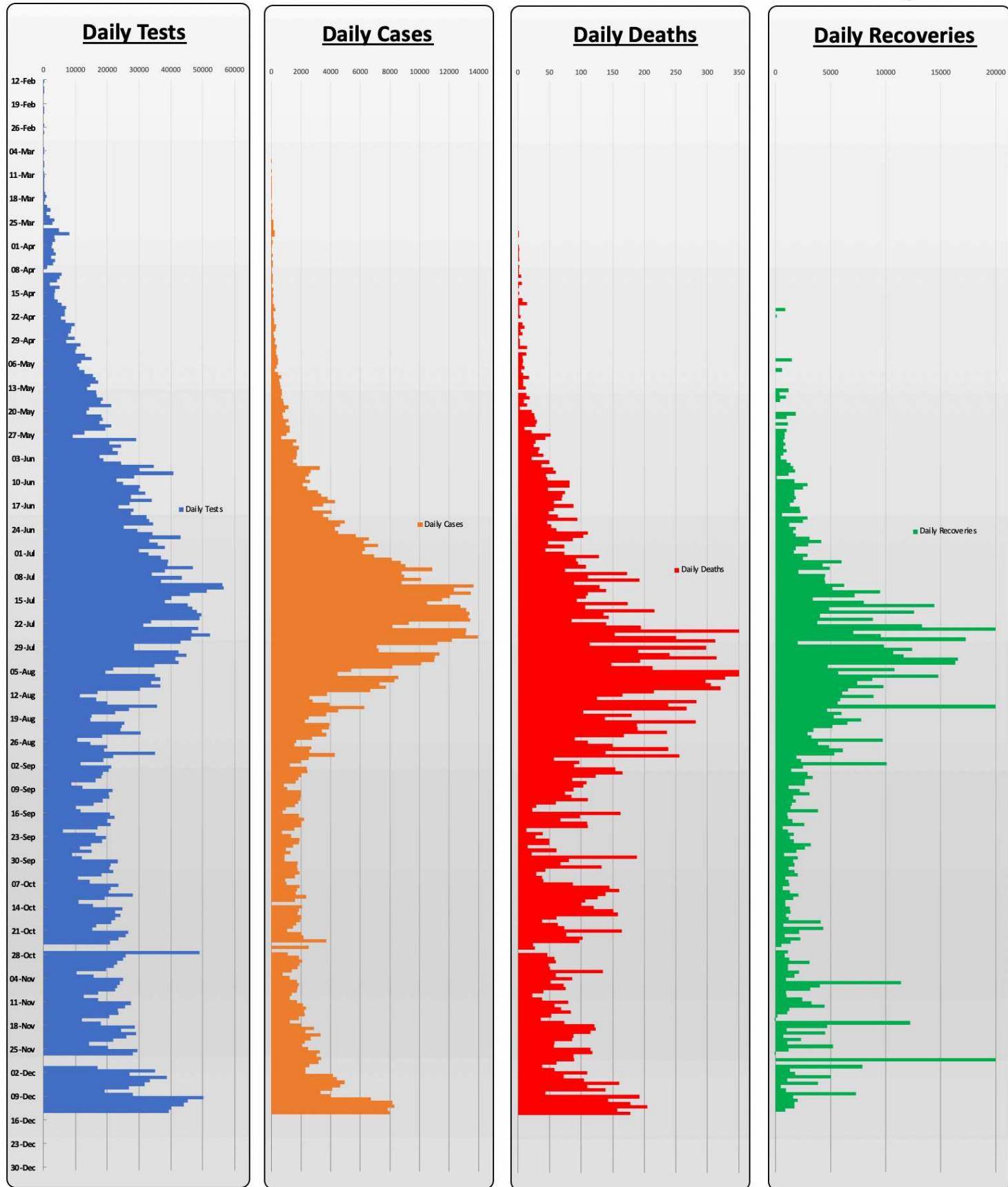
Data as at: 13 December 2020

Unless otherwise indicated

hdg 14 December 2020

# RSA Daily Raw Data Trackers

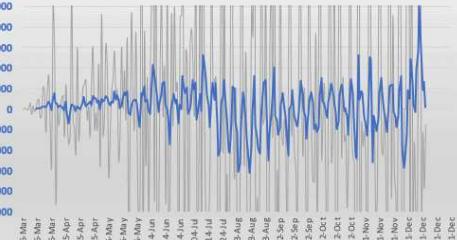
Page 5.1



**RSA: Daily New Tests Fluctuation (Delta)**

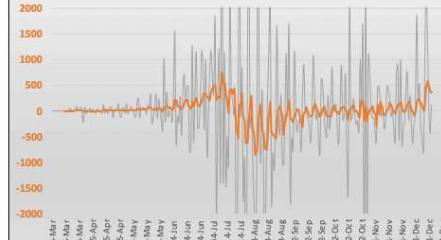
### Curve

— Daily Tests   — 10 Day MA



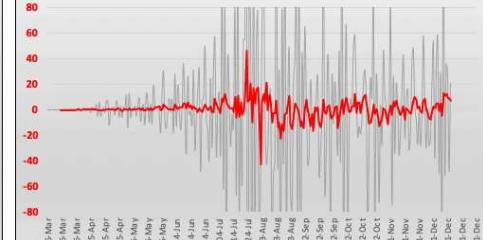
**RSA: Daily new Cases Fluctuation (Delta) Curve**

— Daily Cases   — 10 Day MA



**RSA: Daily New Deaths Fluctuation (Delta) Curve**

— Daily Deaths   — 10 Day MA

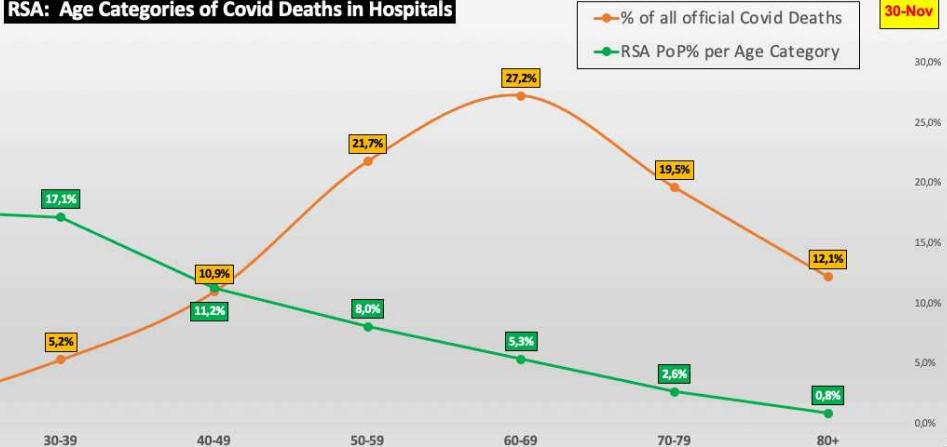


Data as at: 13 December 2020

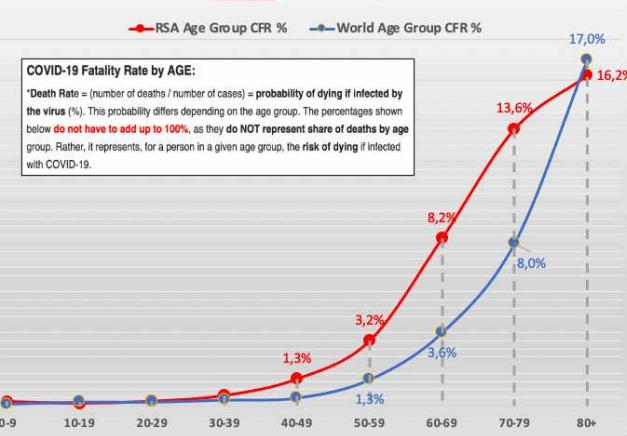
Unless otherwise indicated

hdg 14 December 2020

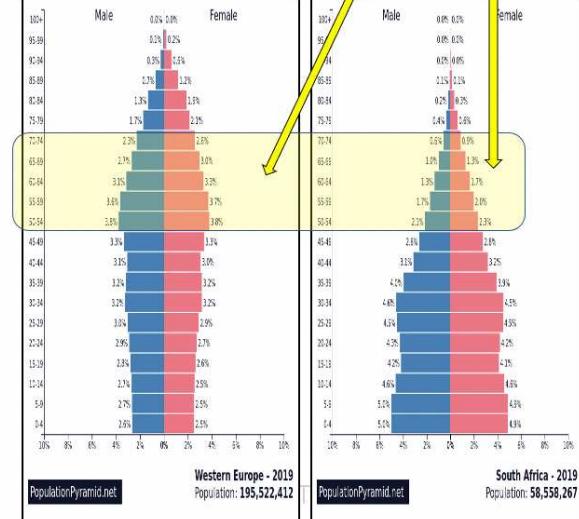
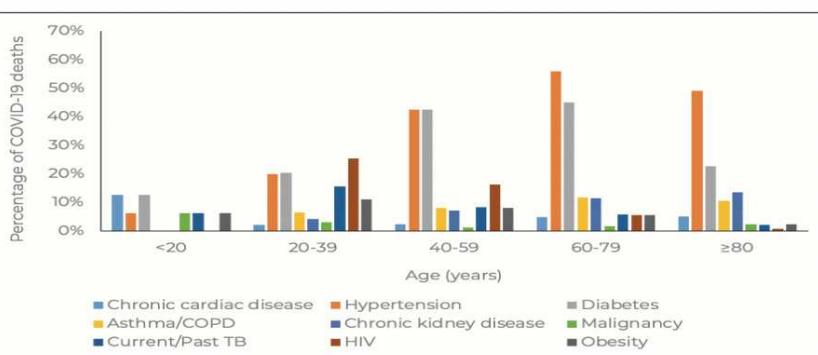
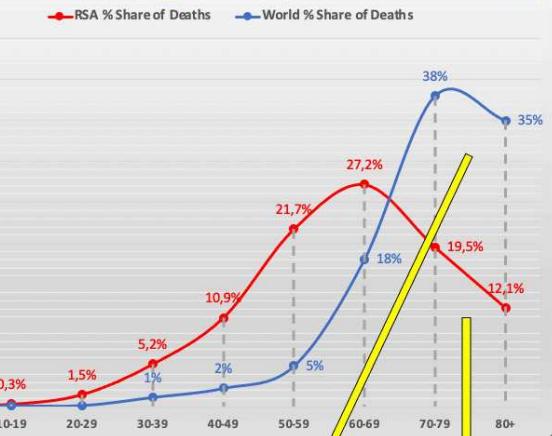
## RSA: Age Categories of Covid Deaths in Hospitals



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



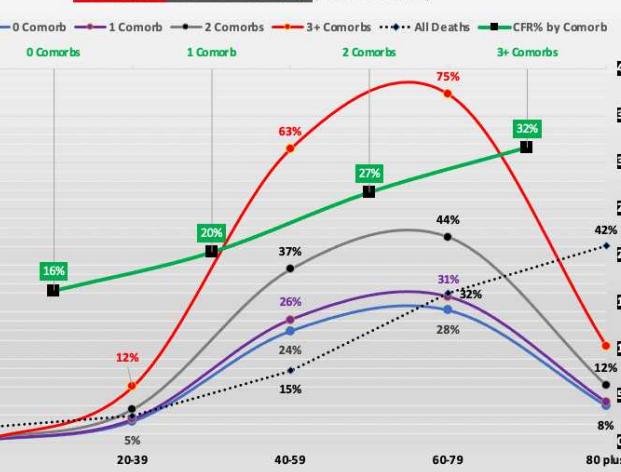
## Covid Deaths per Age Group as % of ALL Covid Deaths (CMR) of ALL Cases &amp; Deaths



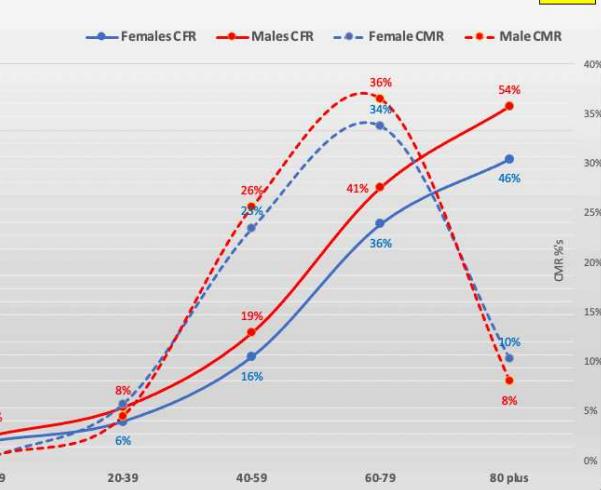
## COVID-19 Fatality Rate by AGE:

\*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.

## Probability of DYING based on % Deaths of Cases per Age/Comorb Group of HOSPITALISED Covid Cases &amp; Deaths (Source RSA NICD)



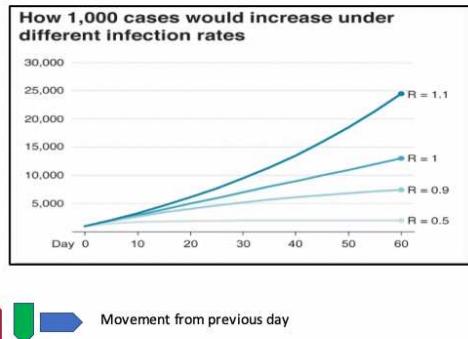
## CFR &amp; CMR %'s per Age &amp; Gender of HOSPITALISED Covid Cases &amp; Deaths



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

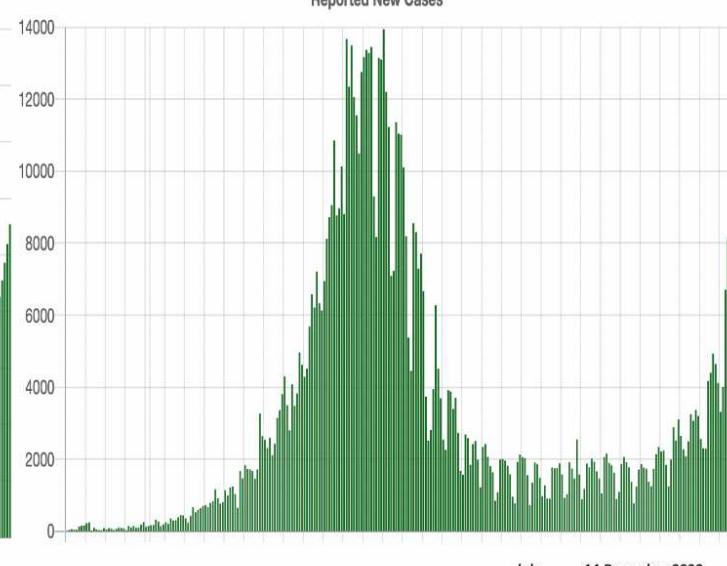
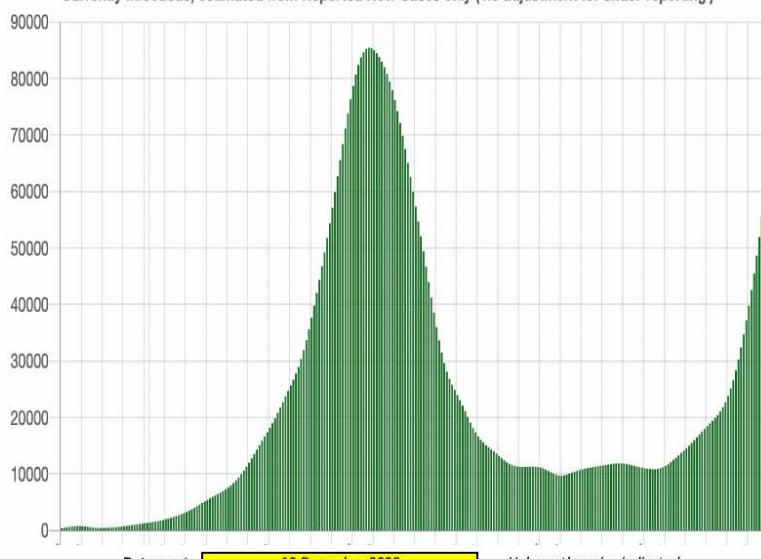


An  $R_0$  below 1 suggests that the number of cases is shrinking, possibly allowing societies to open back up. An  $R_0$  above 1 indicates that the number of cases is growing, perhaps necessitating renewed lockdowns or other measures.



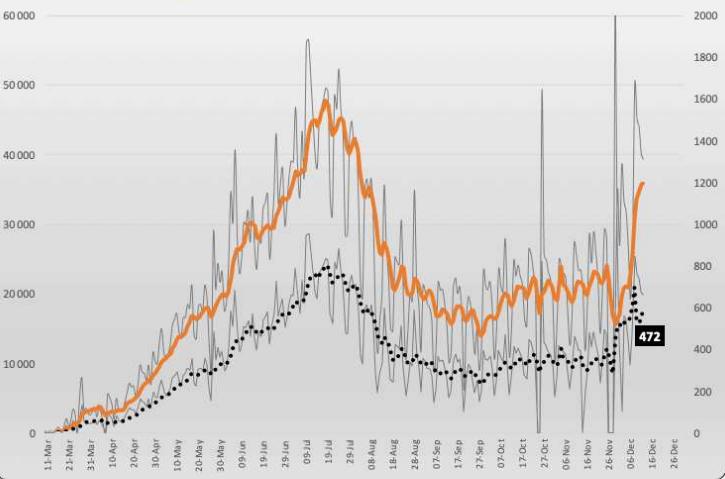
Rt graphs from: <https://reproduction.live/world/ZA>

Currently Infectious, estimated from Reported New Cases only (no adjustment for under-reporting)



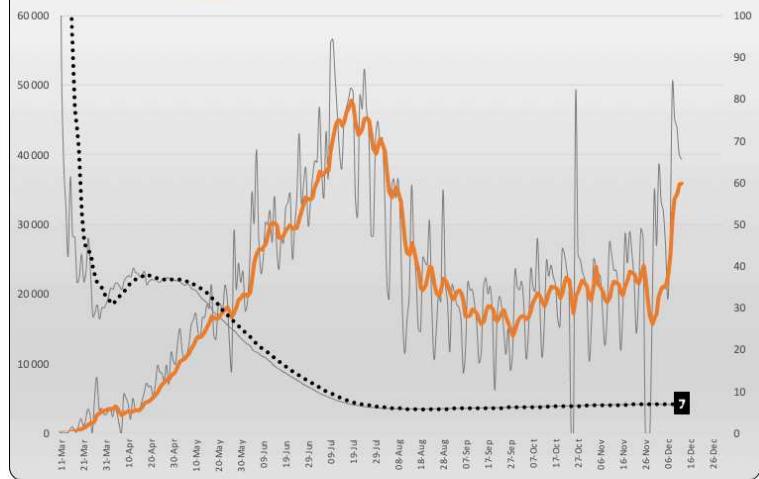
## RSA: Daily Tests conducted per million PoP

— 10 per. Mov. Avg. (Daily Test.s) ••••• 10 per. Mov. Avg. (TpPoP)



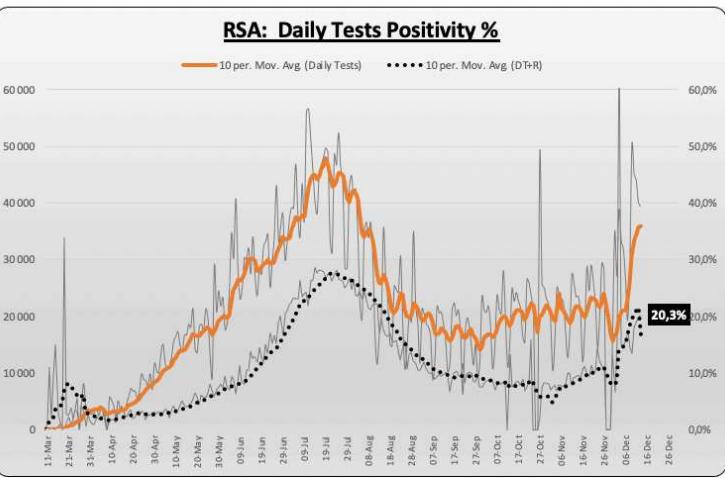
## RSA: Daily Tests per +Case

— 10 per. Mov. Avg. (Daily Test.s) ••••• 10 per. Mov. Avg. (T+R)



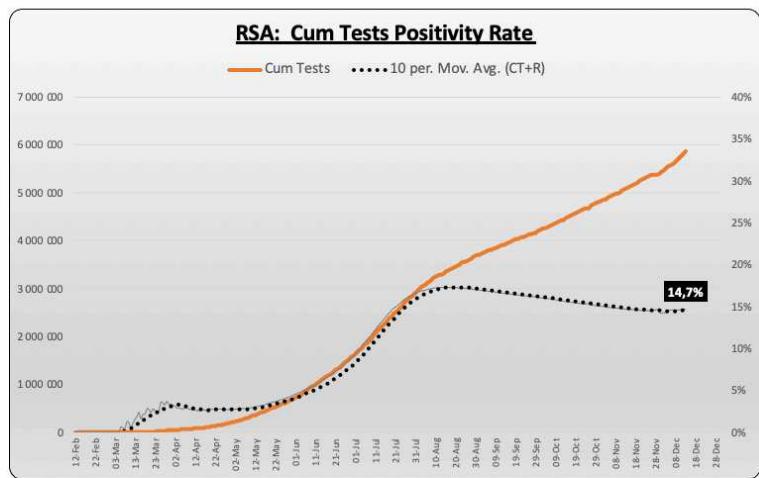
## RSA: Daily Tests Positivity %

— 10 per. Mov. Avg (Daily Test.s) ••••• 10 per. Mov. Avg (Dt+R)

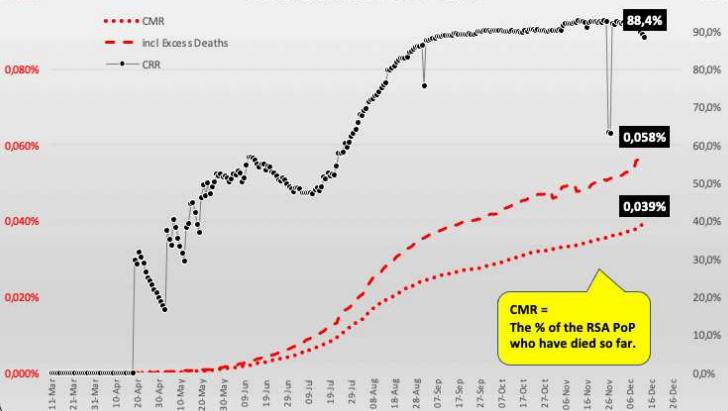


## RSA: Cum Tests Positivity Rate

— Cum Tests ••••• 10 per. Mov. Avg. (CT+R)

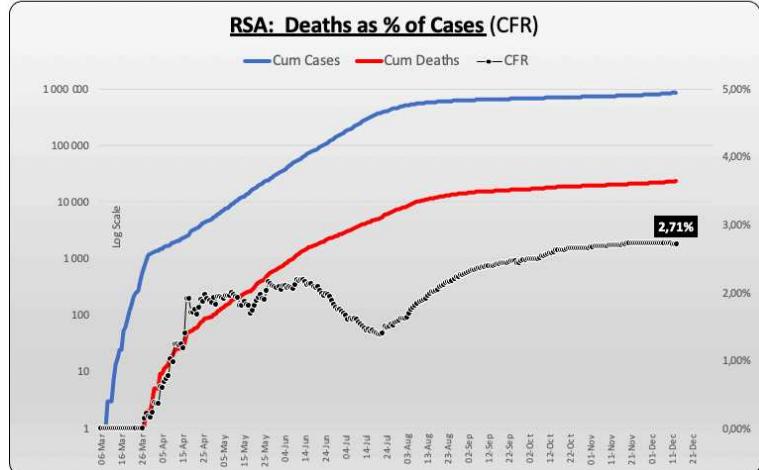


## RSA: Case Recovery Rate (CRR) & Case Mortality Rate (CMR) & CMR incl Excess Deaths



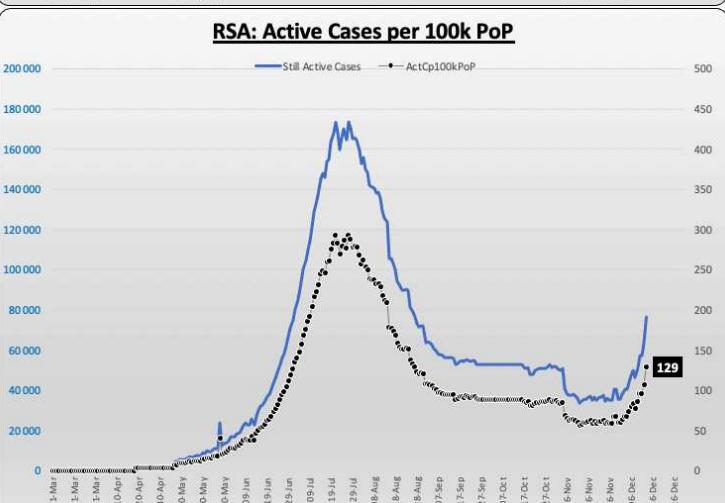
## RSA: Deaths as % of Cases (CFR)

— Cum Cases — Cum Deaths — CFR



## RSA: Active Cases per 100k PoP

— Still Active Cases — ActCp100kPoP

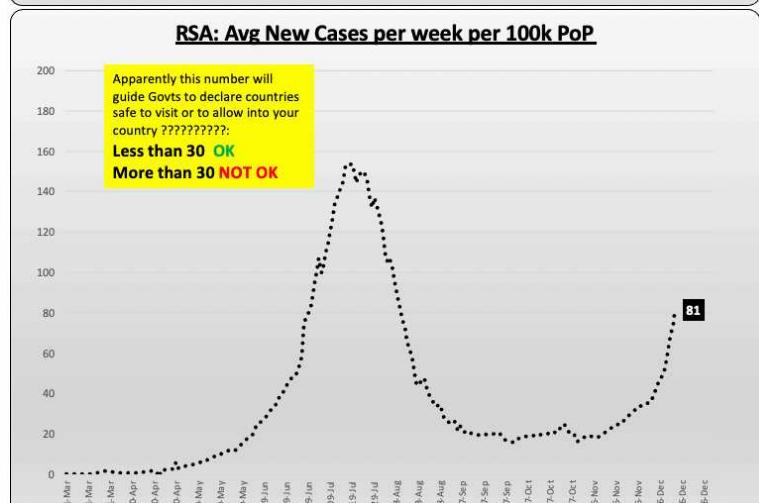


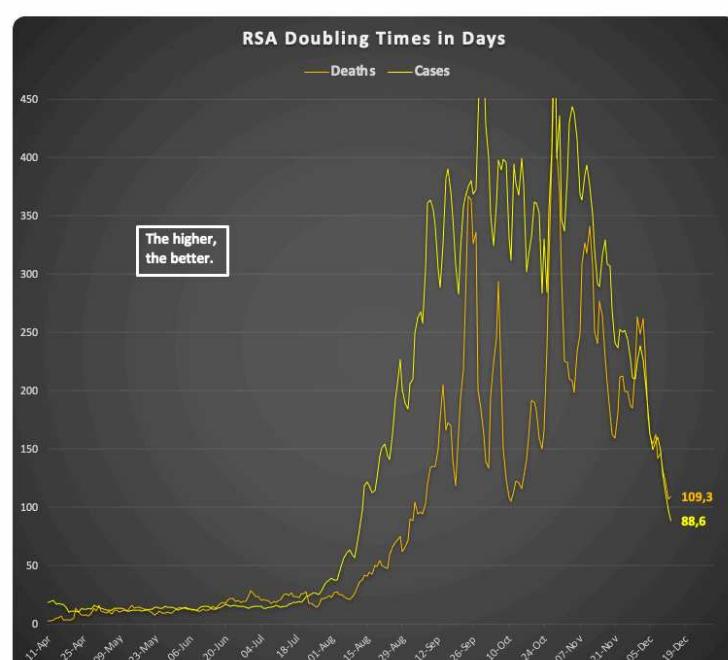
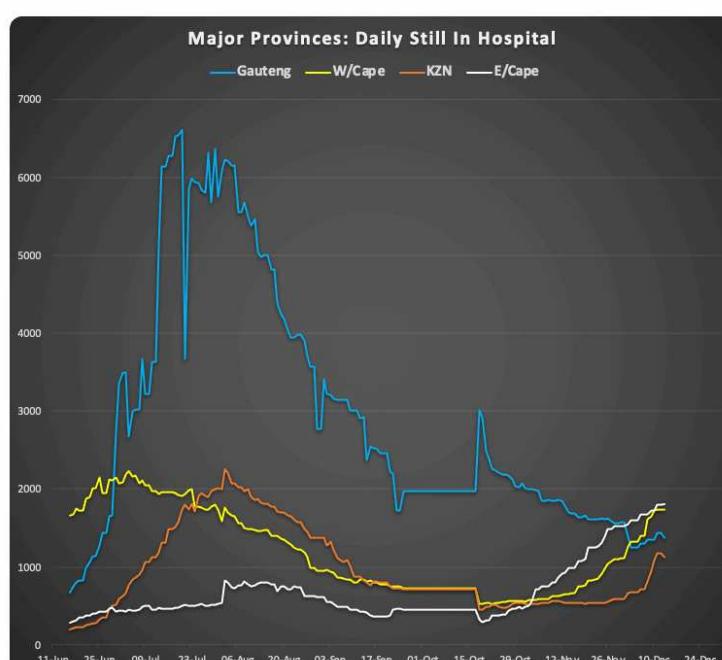
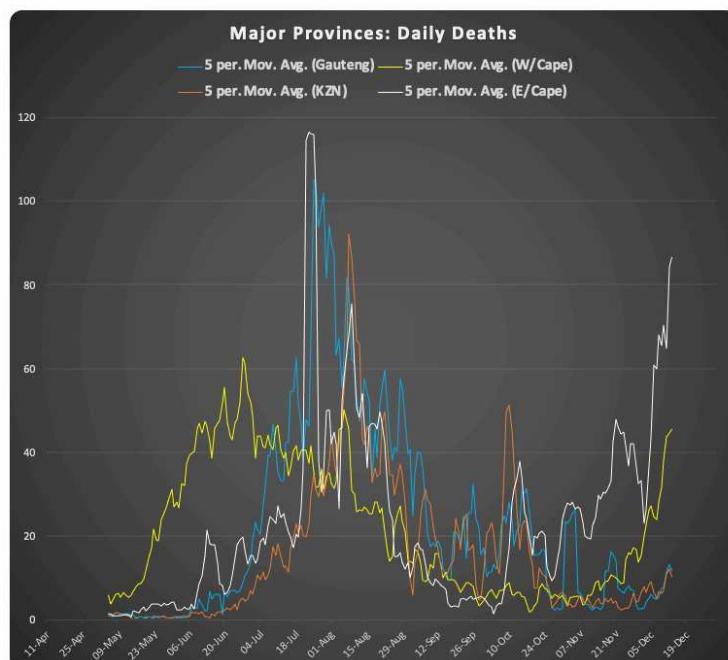
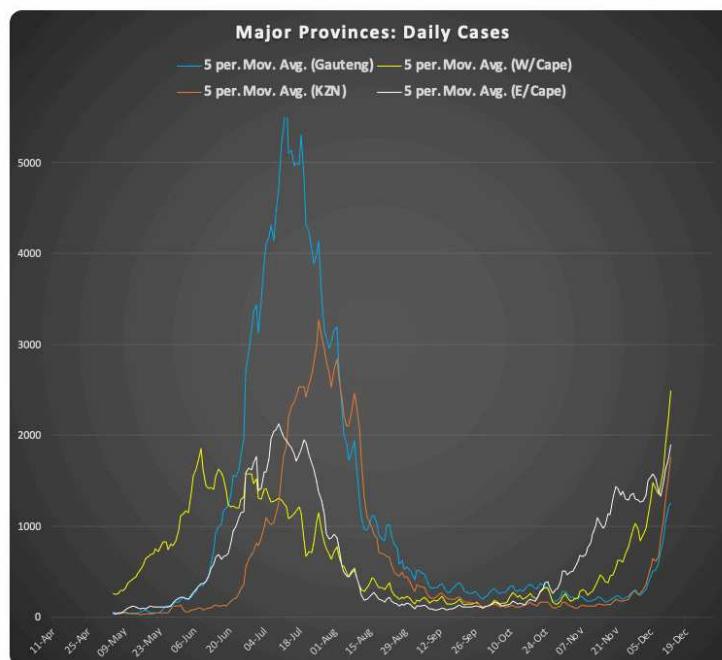
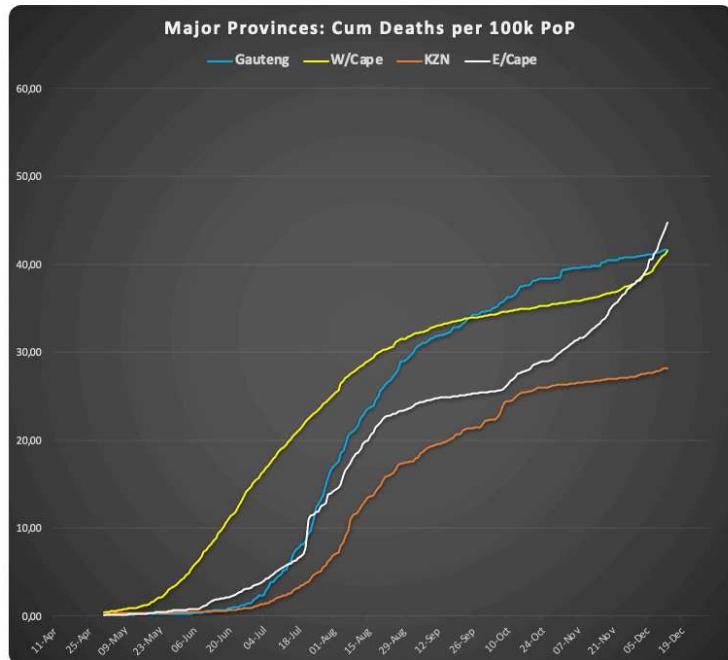
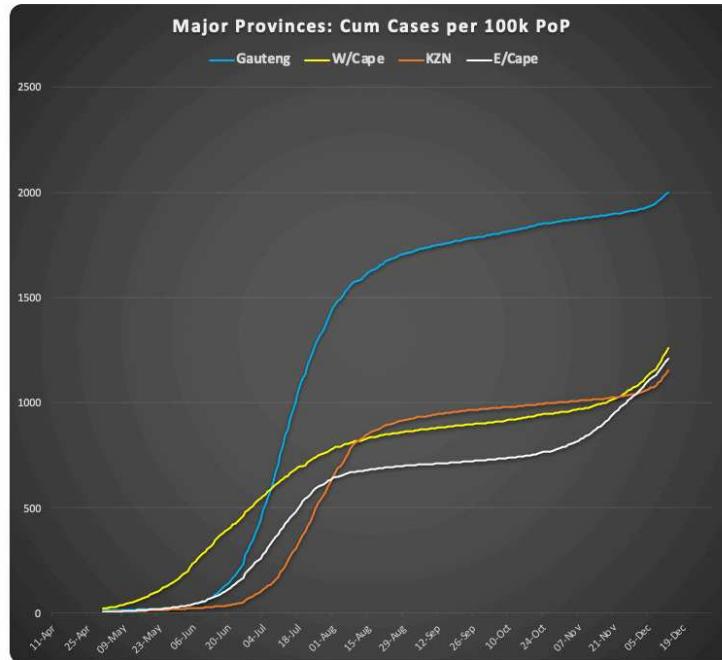
## RSA: Avg New Cases per week per 100k PoP

Apparently this number will guide Govts to declare countries safe to visit or to allow into your country ??????????

**Less than 30 OK**

**More than 30 NOT OK**





# Major Provinces: Cum Cases by District

Page 5.6

Daily Cases - KwaZulu-Natal Districts



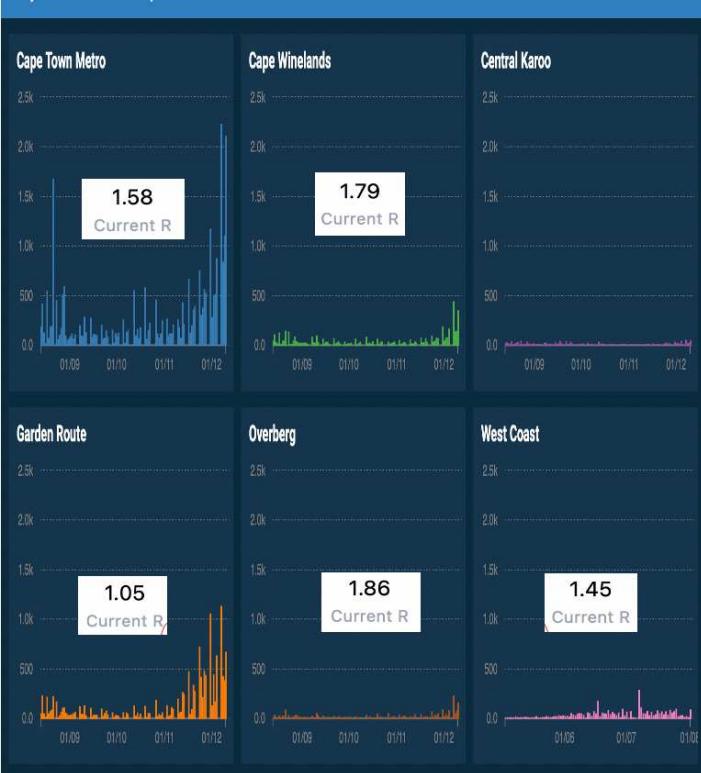
Daily Cases - Eastern Cape Districts



Daily Cases - Gauteng Districts

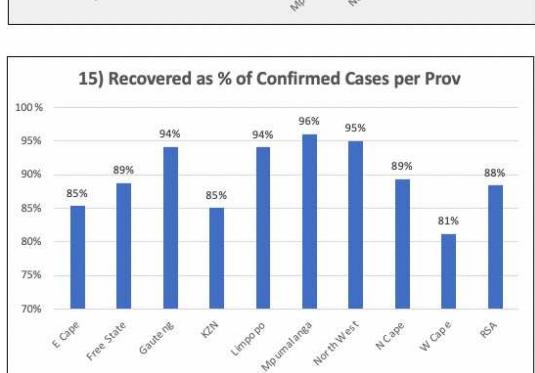
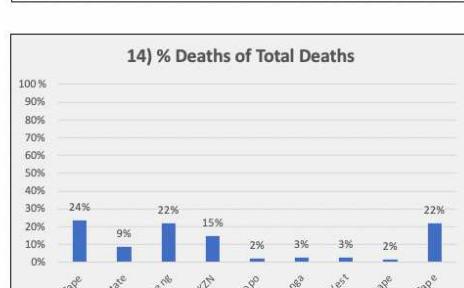
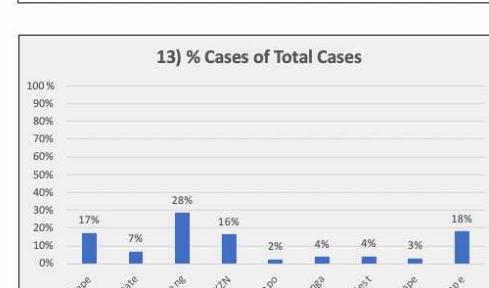
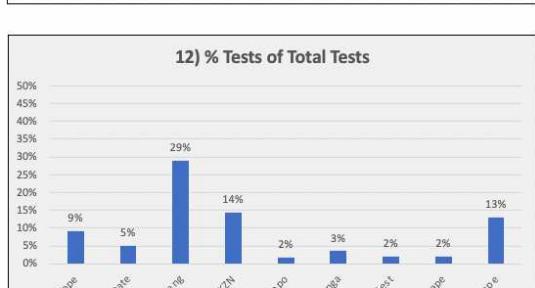
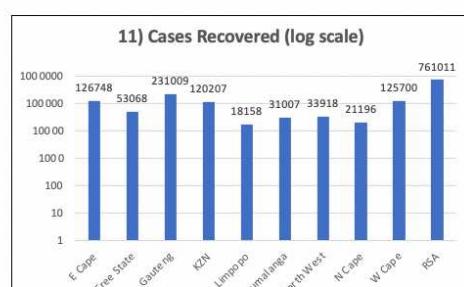
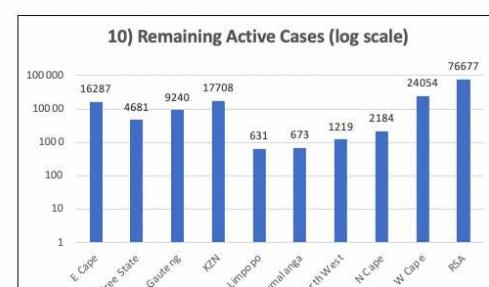
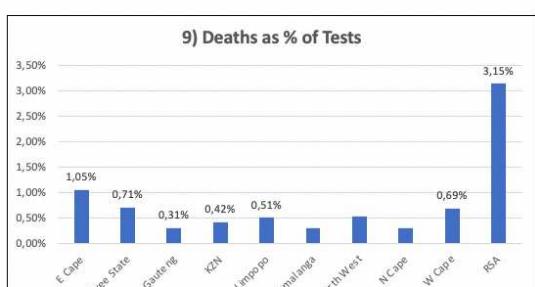
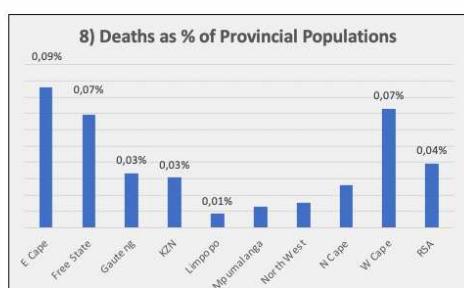
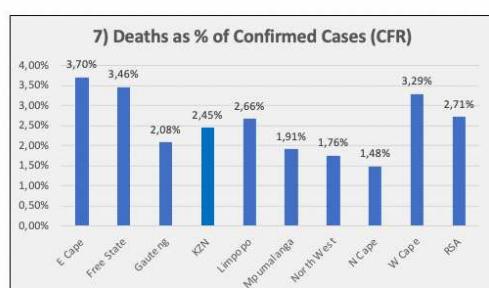
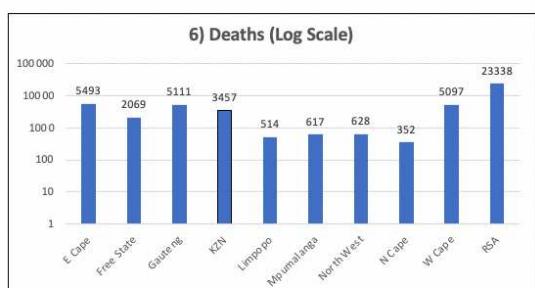
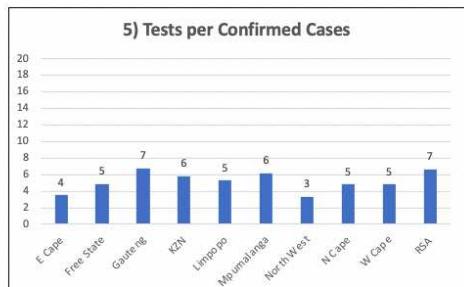
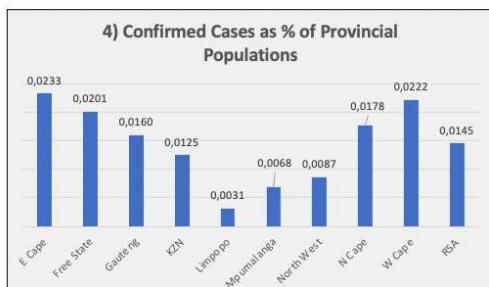
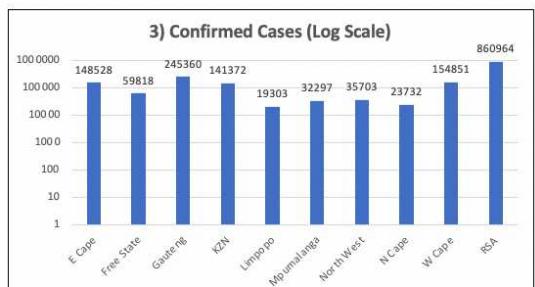
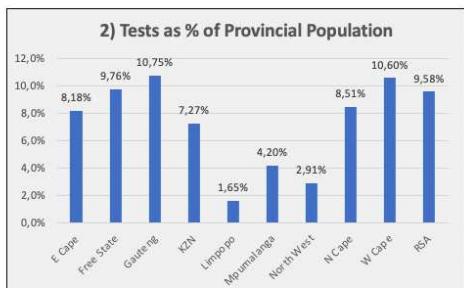
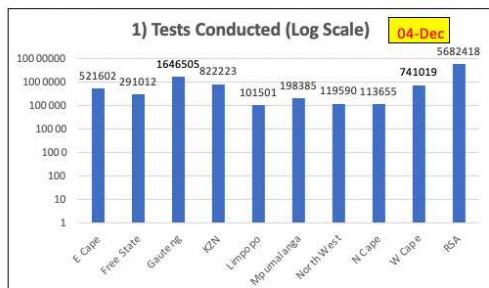
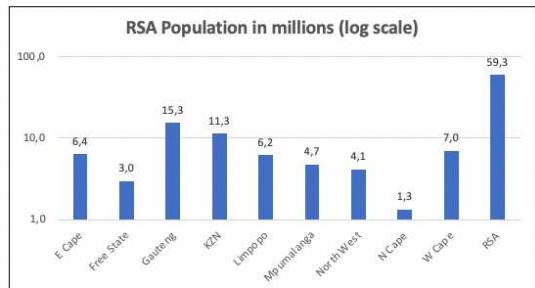


Daily Cases - Western Cape Districts



# RSA Covid Stats: National & Provincial Analysis

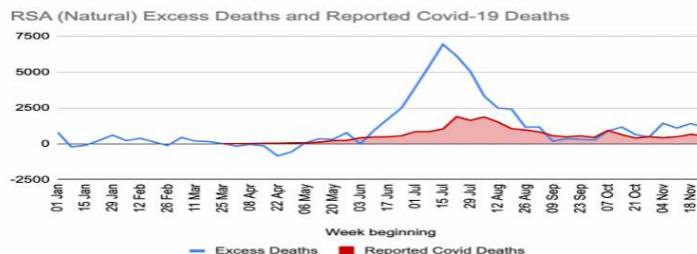
Page 6



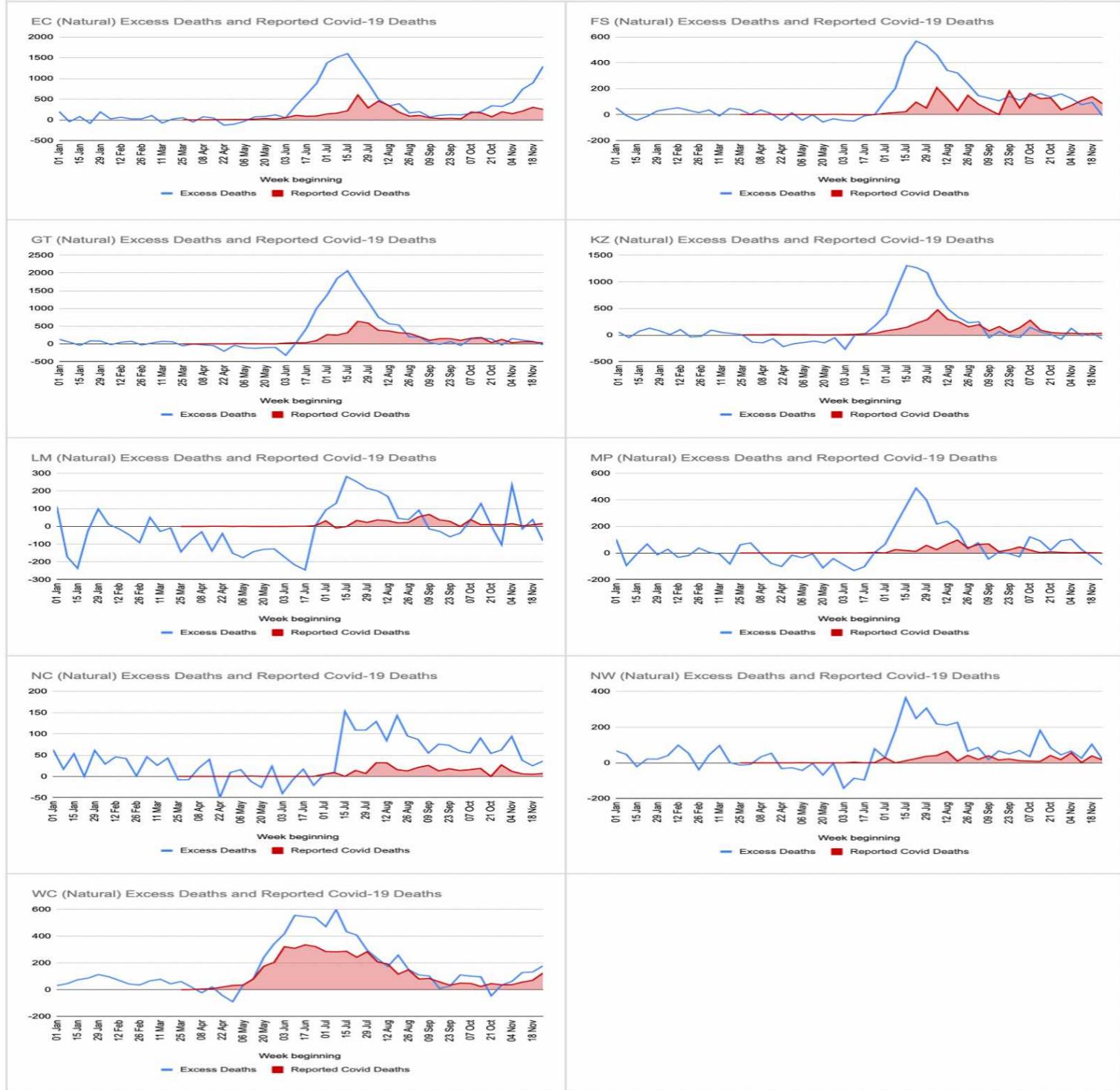
# RSA Excess Deaths as per SA Medical Research Council

Page 6.1

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.



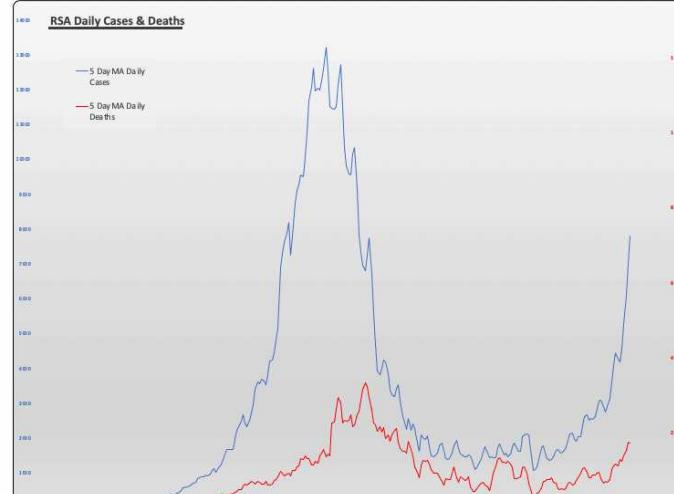
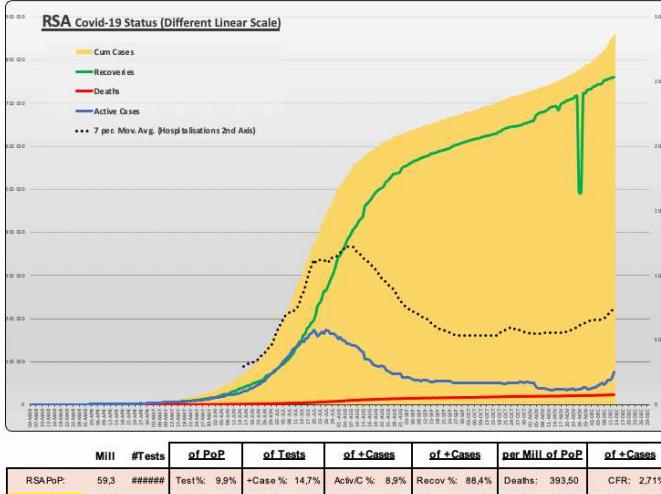
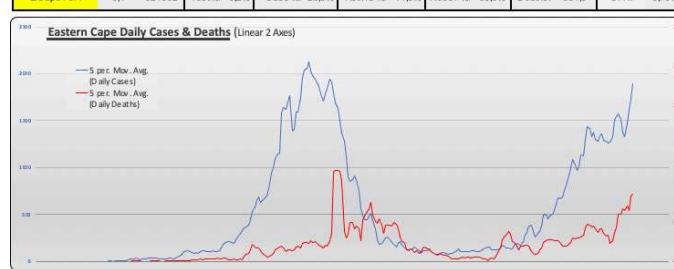
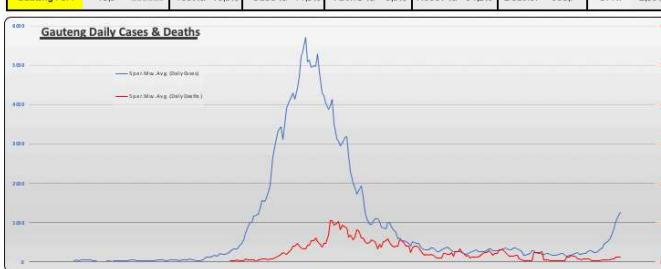
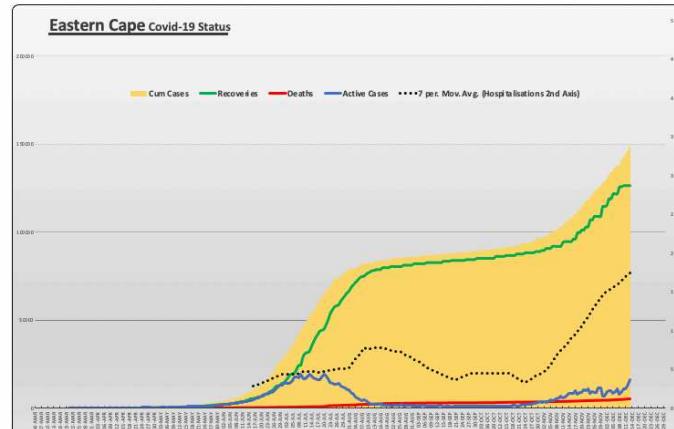
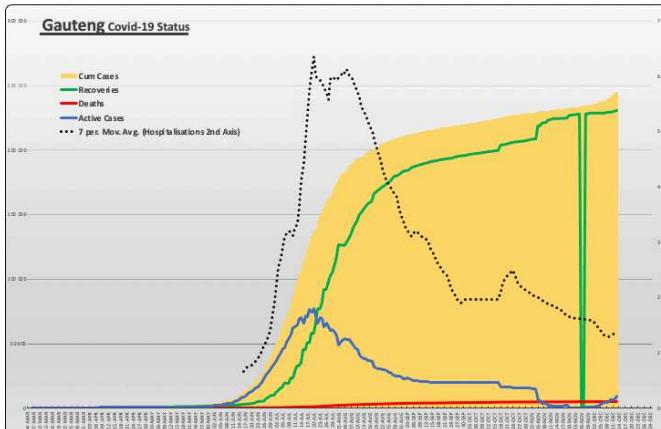
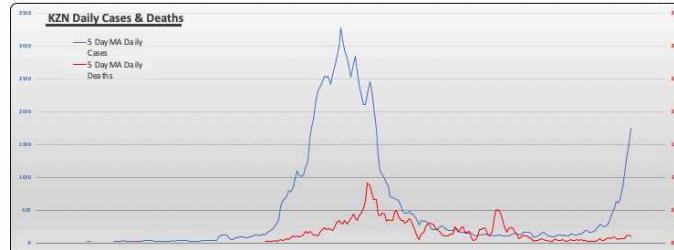
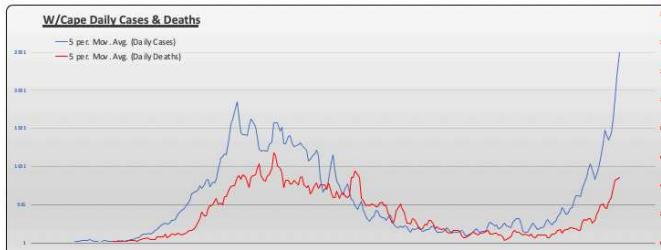
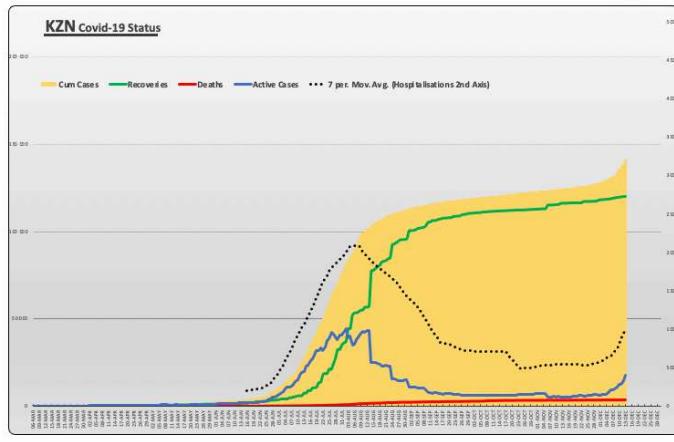
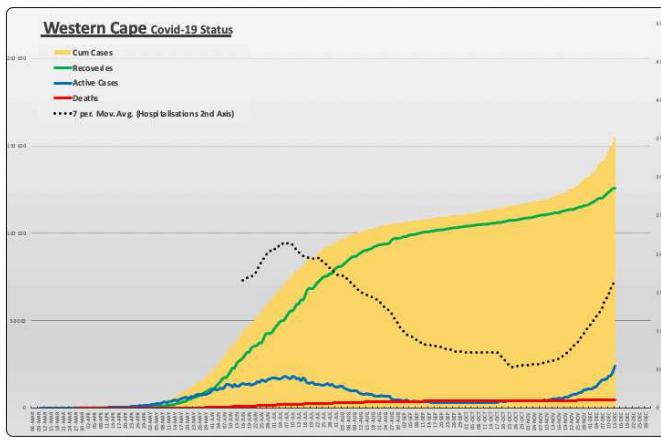
## Provinces

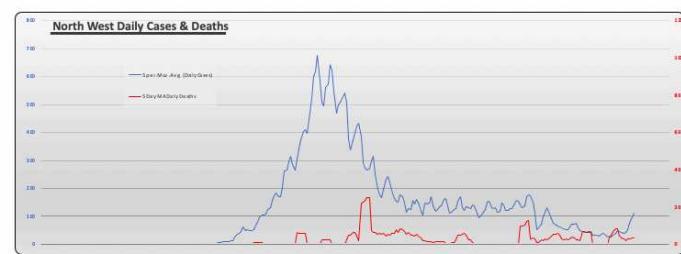
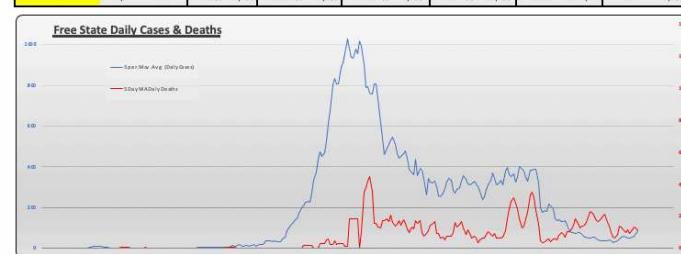
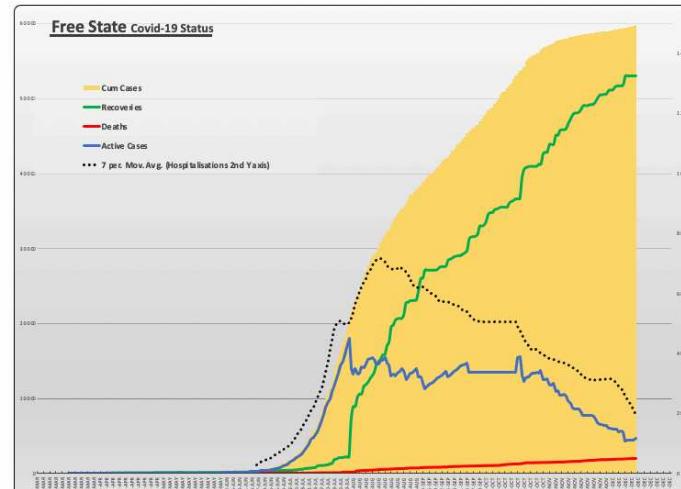
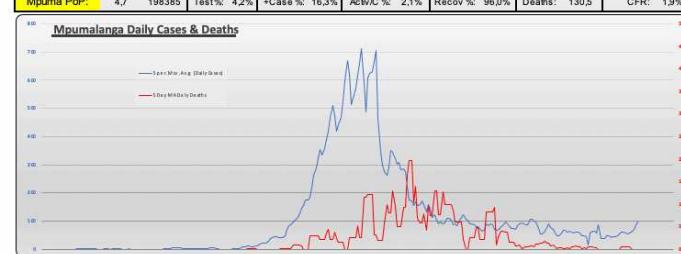
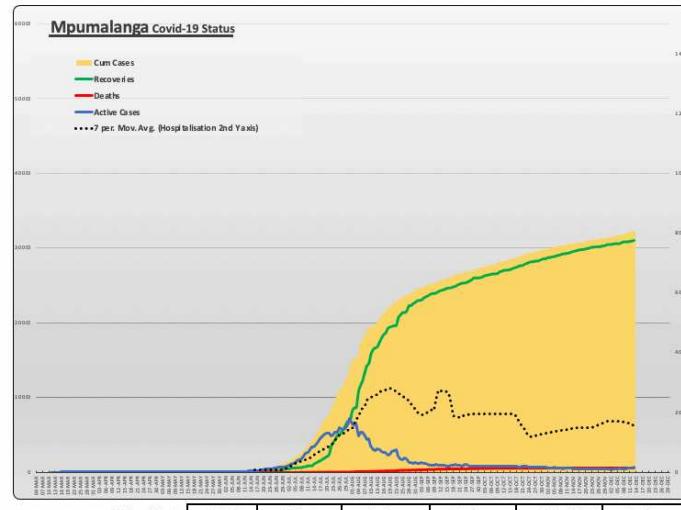
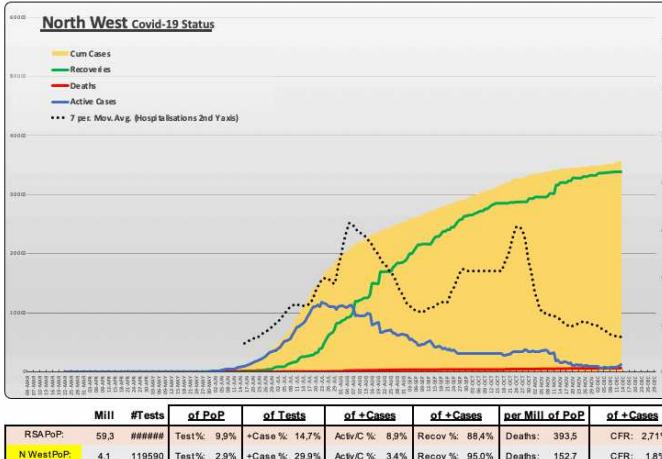
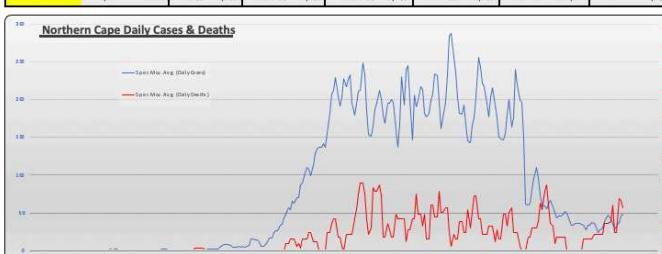
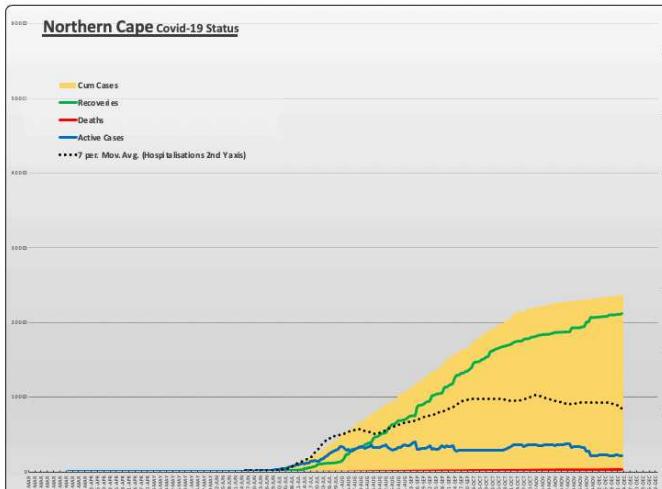
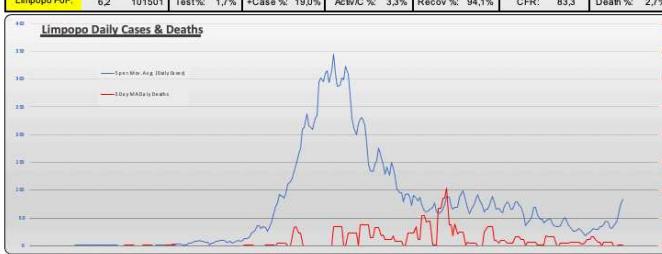
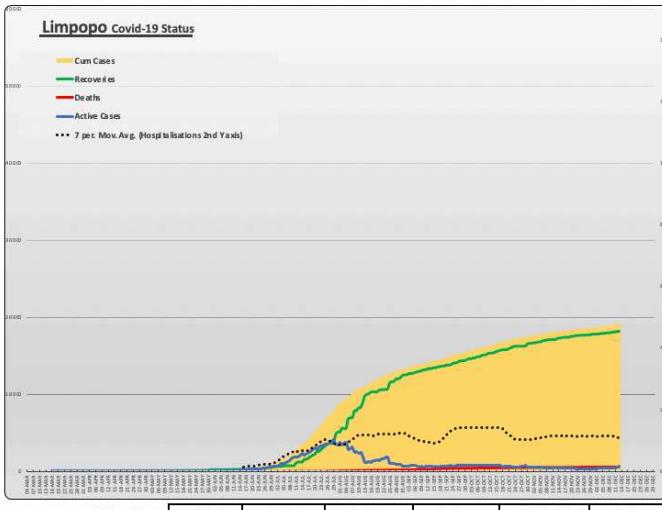


Data as at:

18 November 2020

hdg 14 December 2020





## Some Food for Thought....

