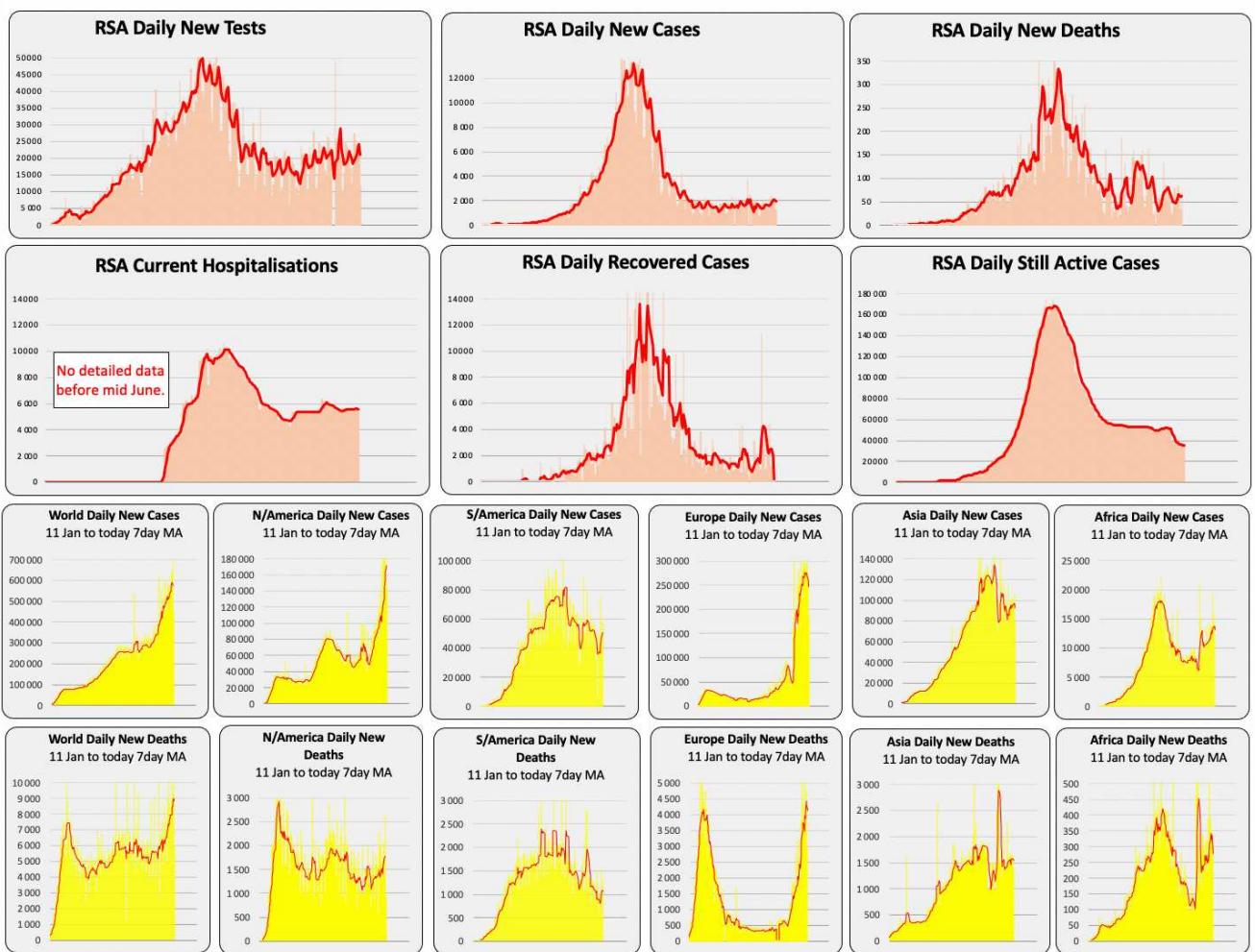
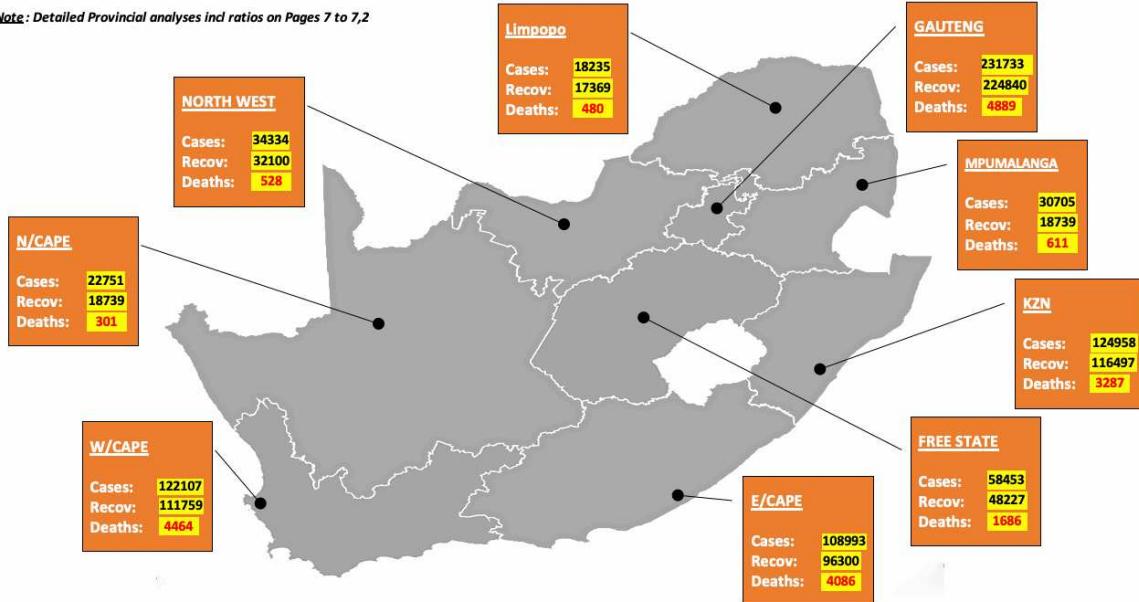
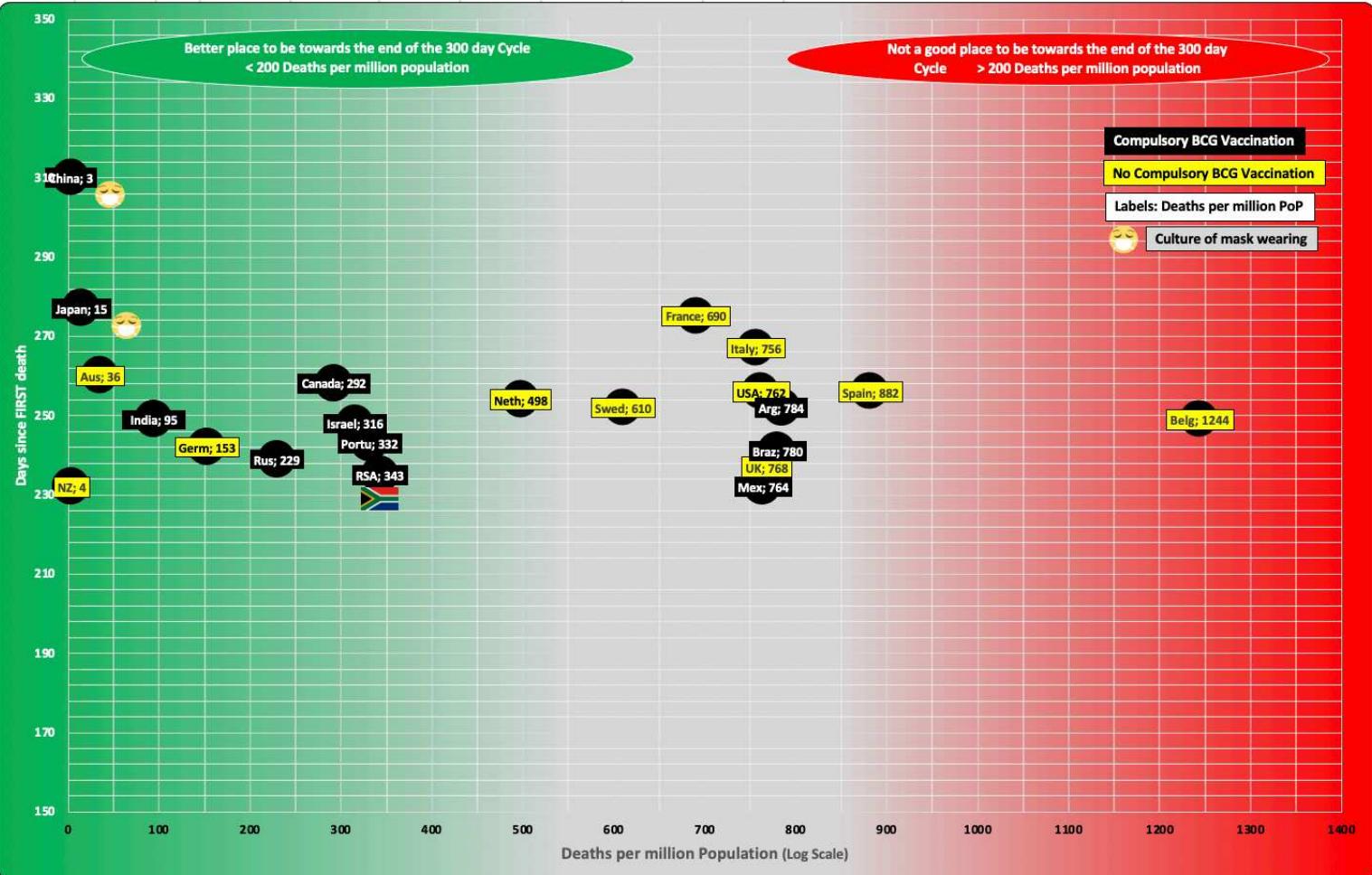


Note: Detailed Provincial analyses incl ratios on Pages 7 to 7,2

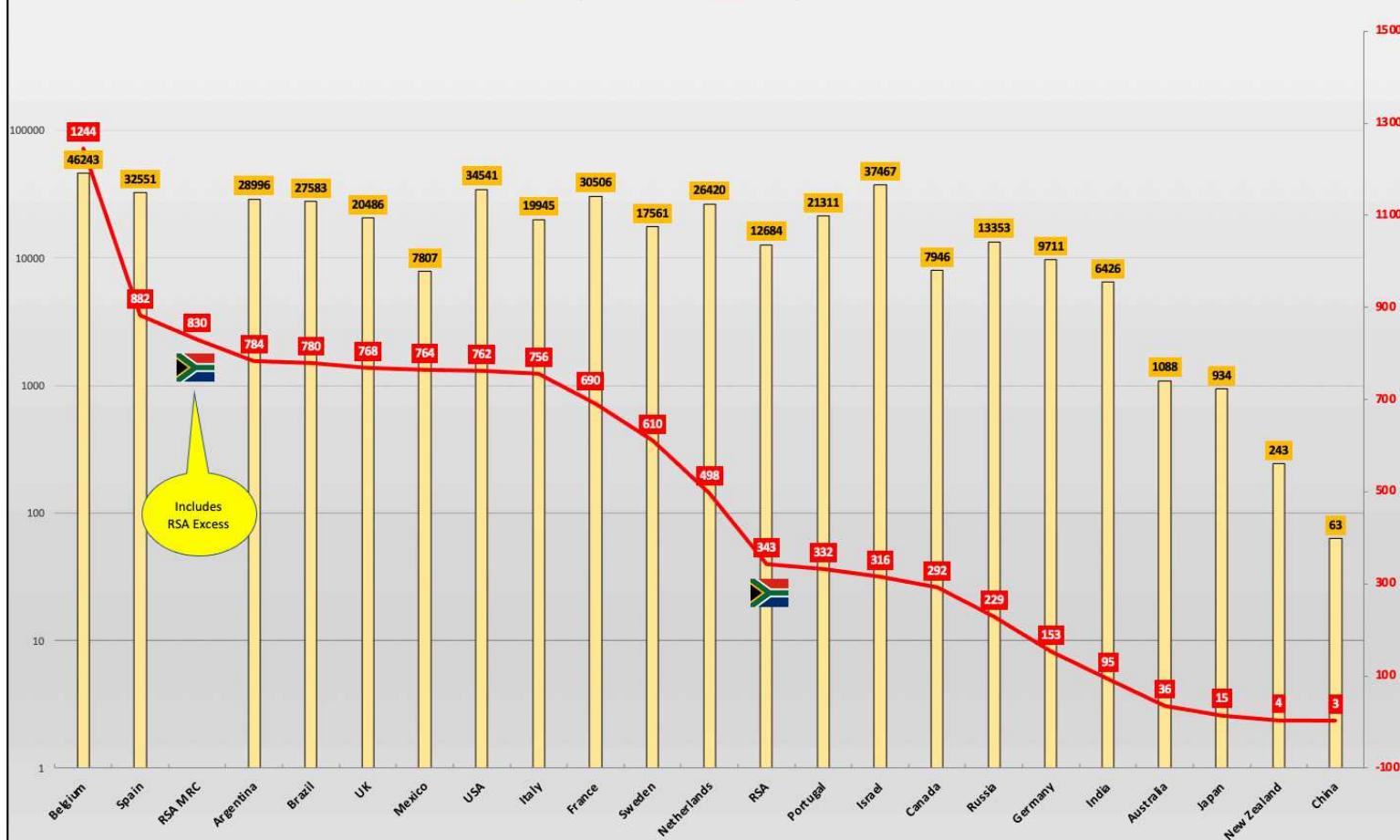




### Current Cum Cases & Cum Deaths per million PoP

(Two axes primary Y Log 2nd Y Linear)

Cases per million PoP — Deaths per million PoP

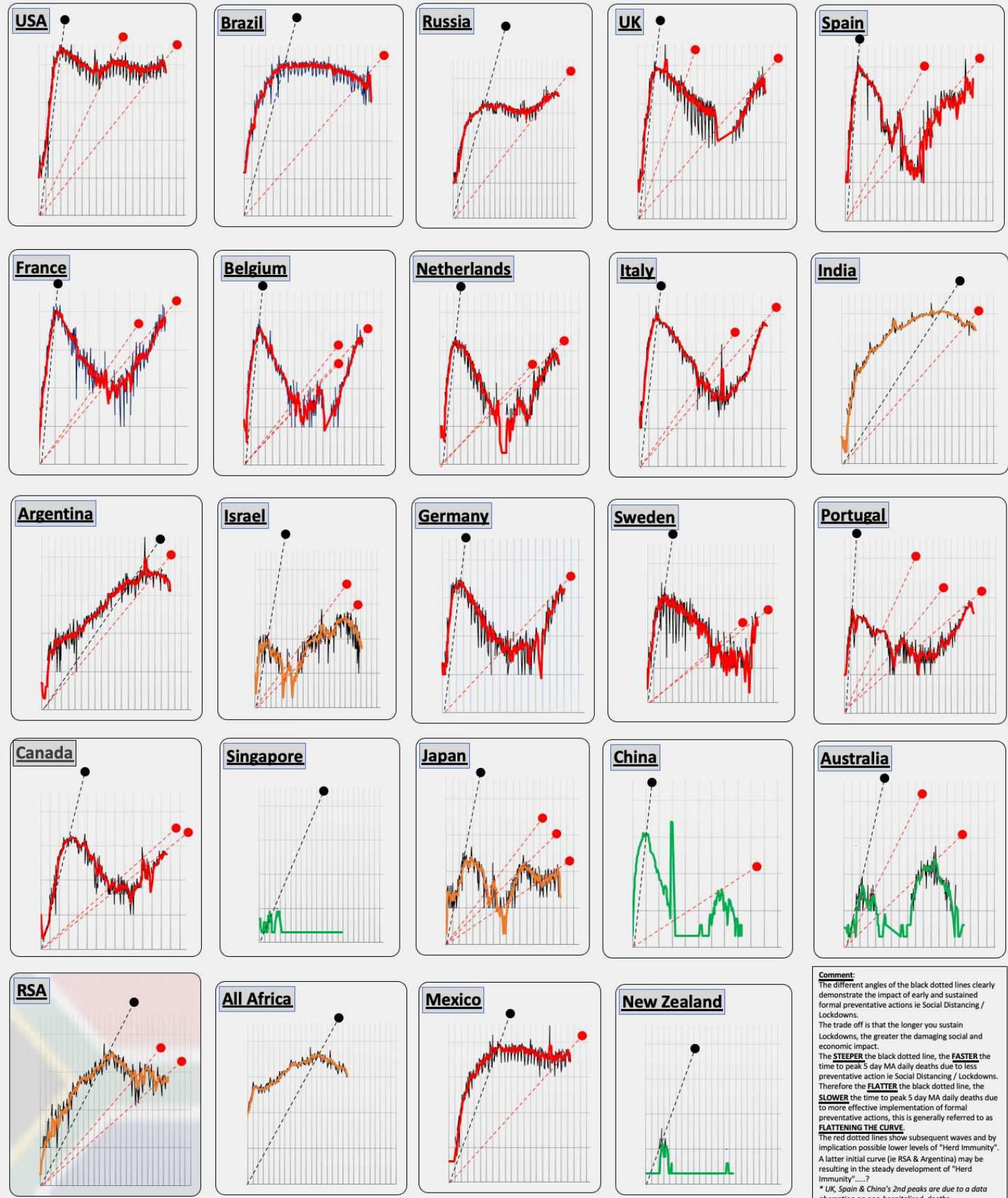


## Daily Deaths Curves & Rate of Onset and next Wave "Inclinometers"

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

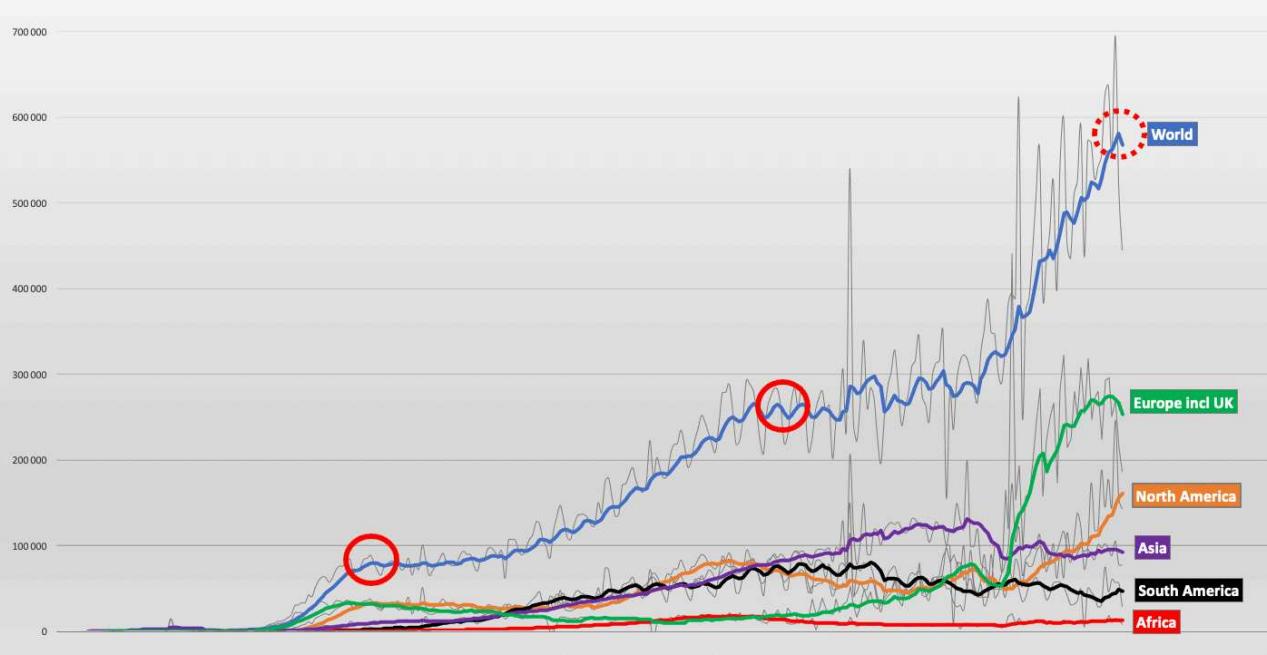
<b>Peaked but spiking again</b>
<b>Passed peak but could rebound OR 2nd wave</b>
<b>Well past peak, unlikely to rebound</b>

● <b>Onset/1st wave</b>
● <b>2nd &amp; 3rd waves</b>

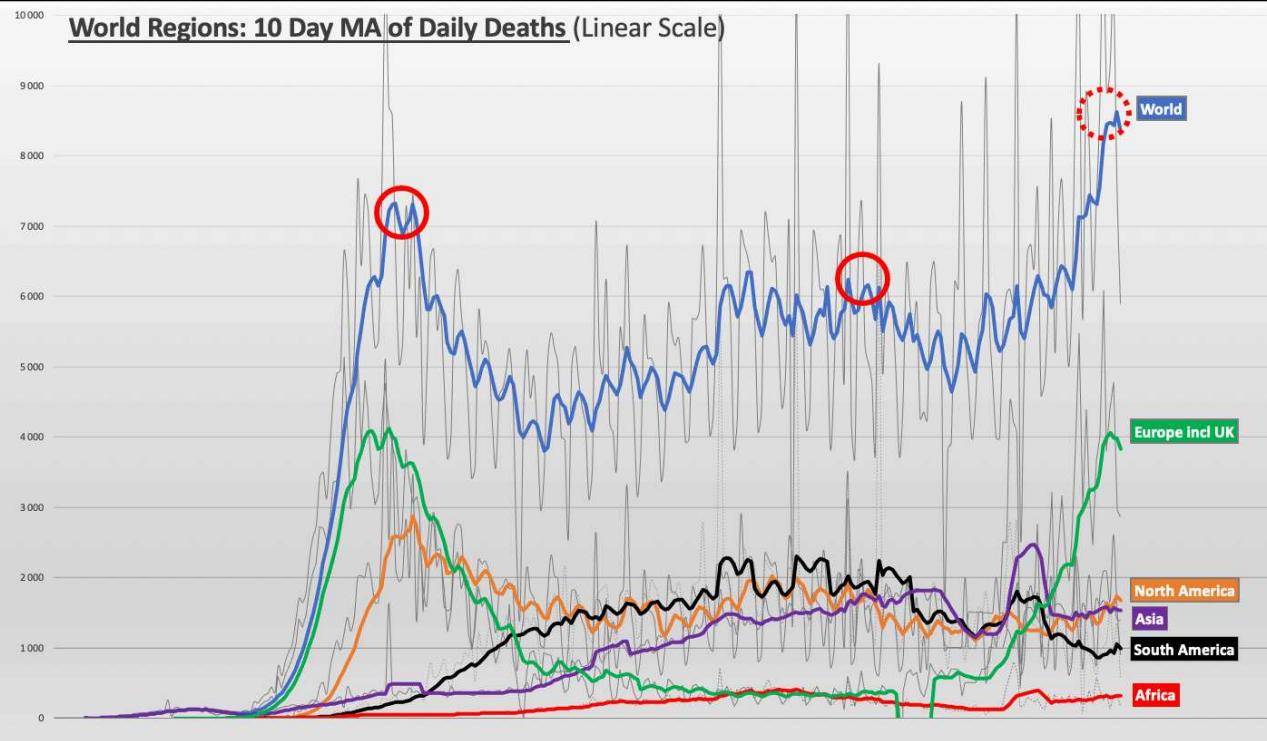


**Comment:**  
The different angles of the black dotted lines clearly demonstrate the impact of early and sustained formal preventative actions ie Social Distancing / Lockdowns.  
The trade off is that the longer you sustain Lockdowns, the greater the damaging social and economic impact.  
The STEEPER 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.

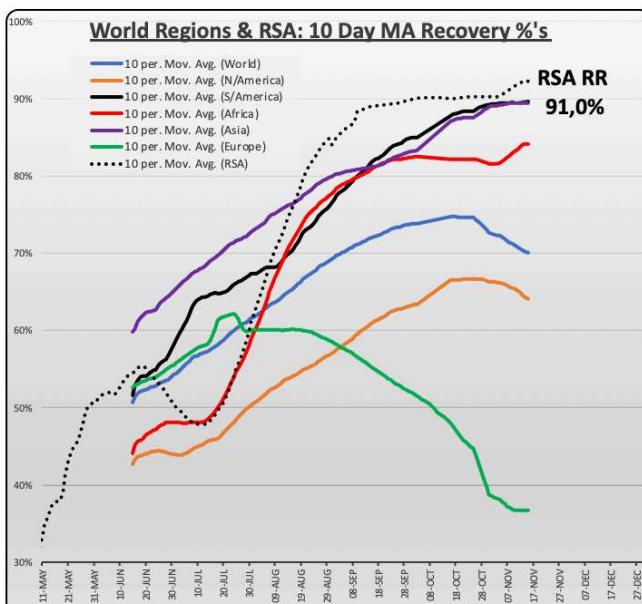
## World Regions: 10 Day MA of Daily Cases (Linear Scale)



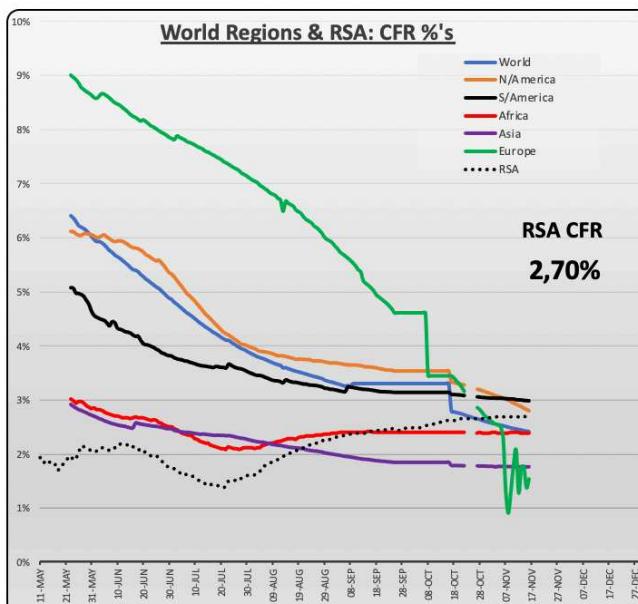
## World Regions: 10 Day MA of Daily Deaths (Linear Scale)

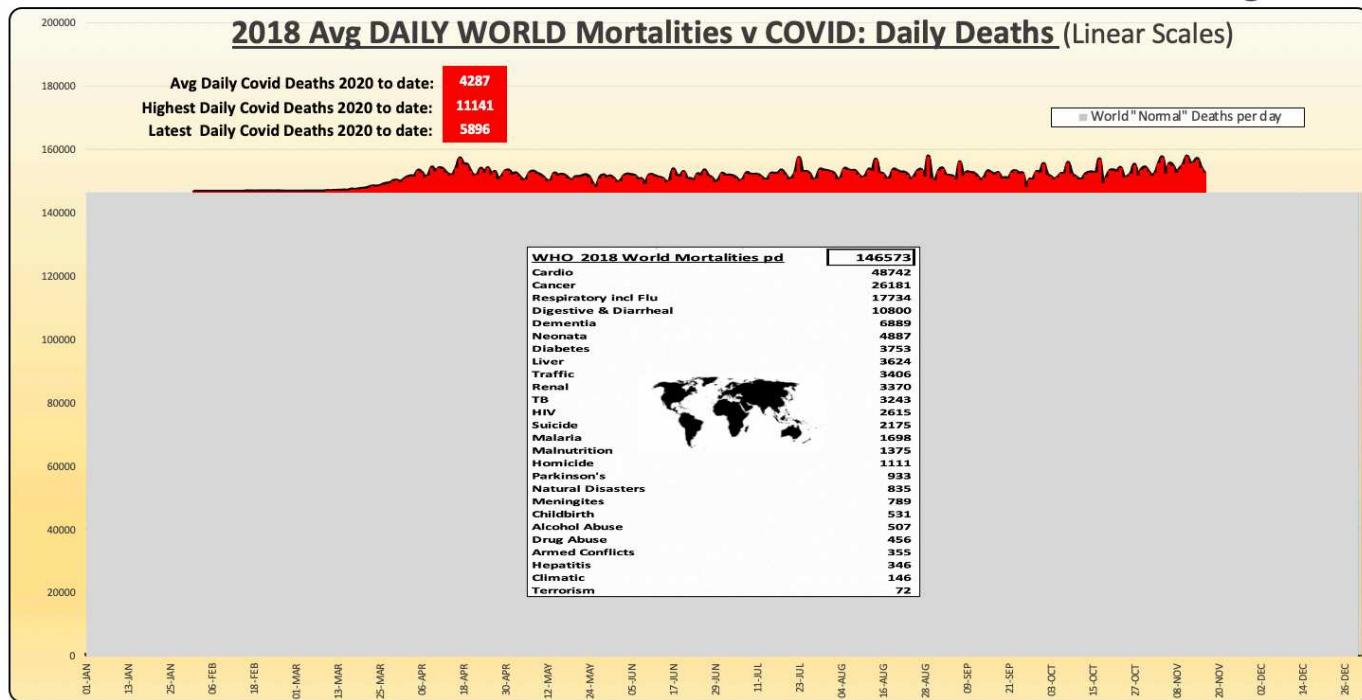


## World Regions & RSA: 10 Day MA Recovery %'s



## World Regions & RSA: CFR %'s



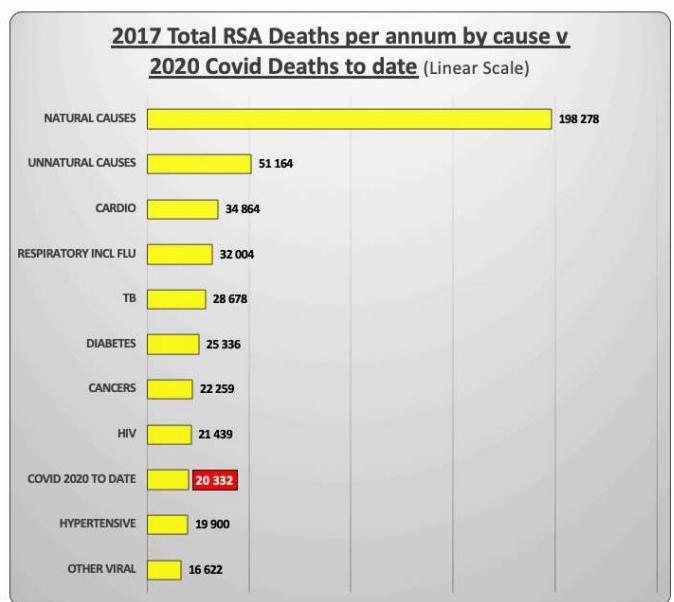
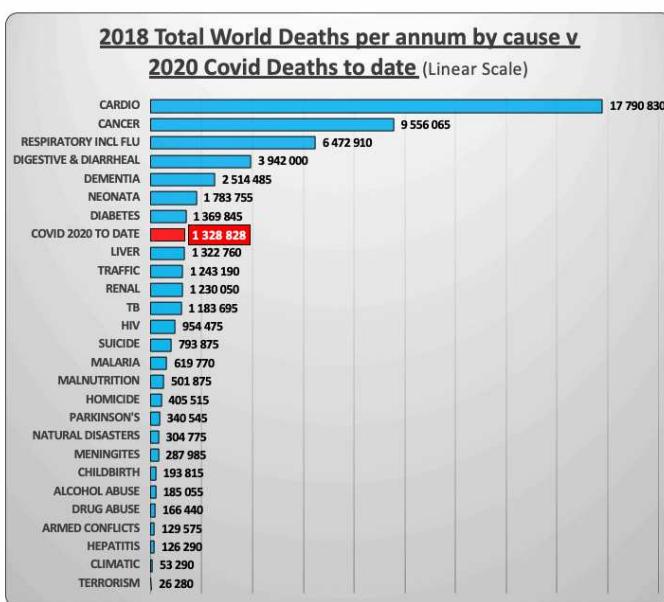
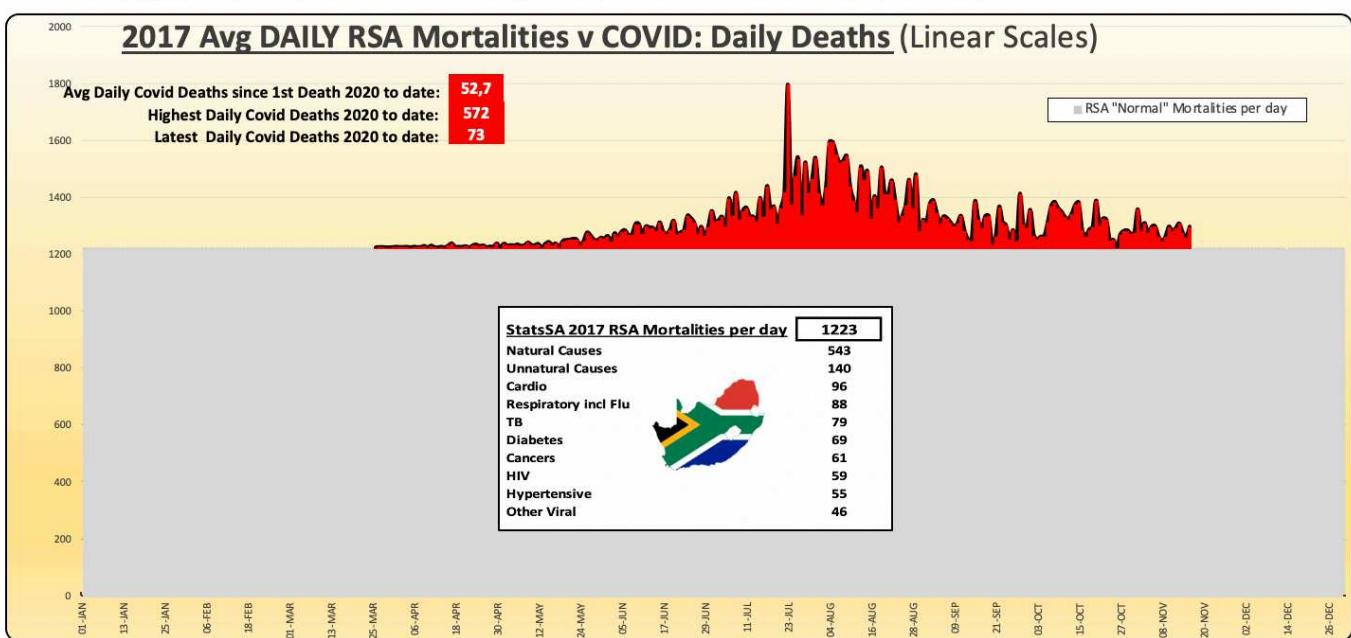


The two graphs WORLD (above) and RSA (below) attempt to put the number of Covid Deaths into some sort of perspective graphically.

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.

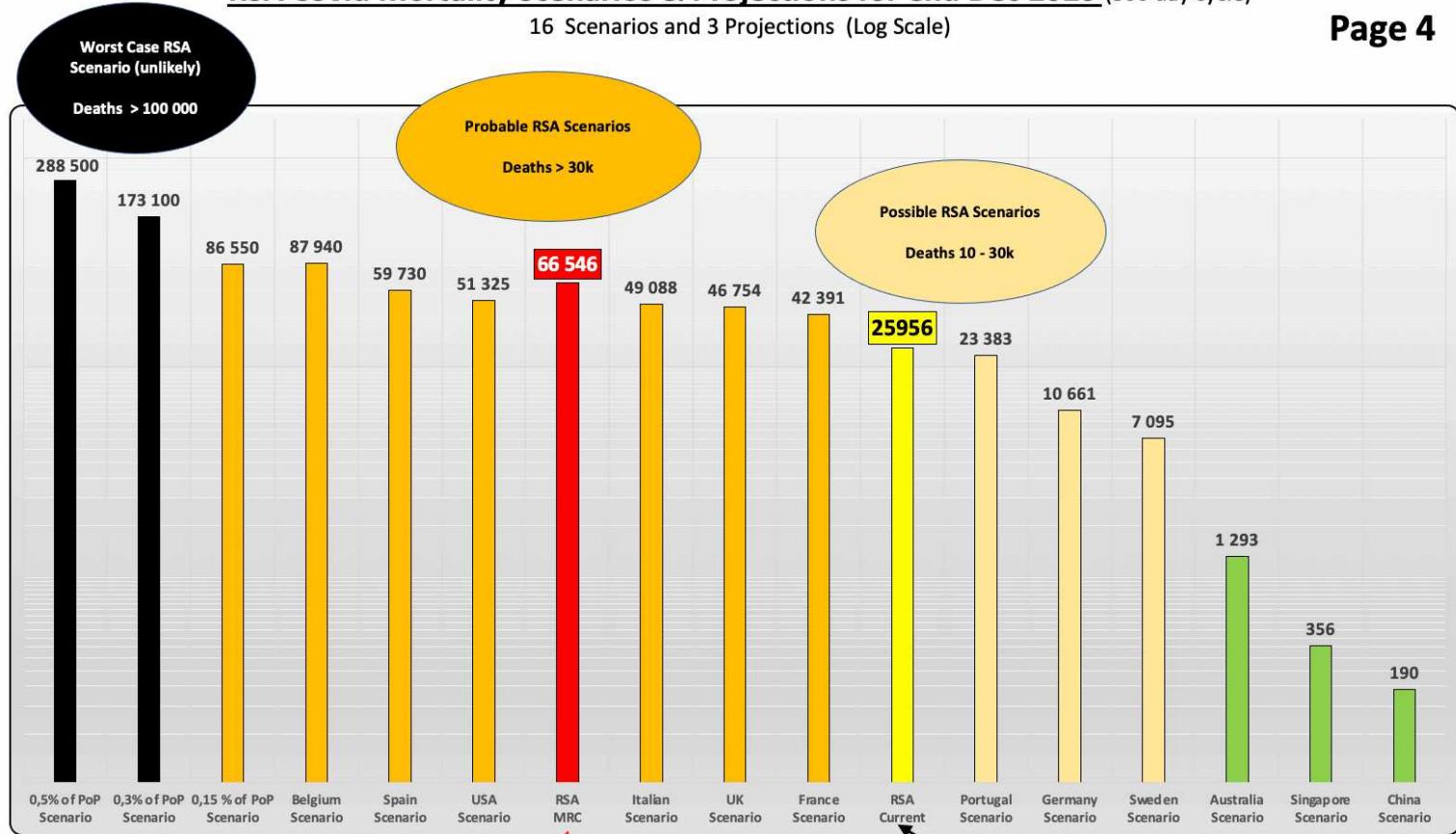
Obviously some of the Covid Deaths will "overlap" with the "normal" Deaths due to comorbidities.



# 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.

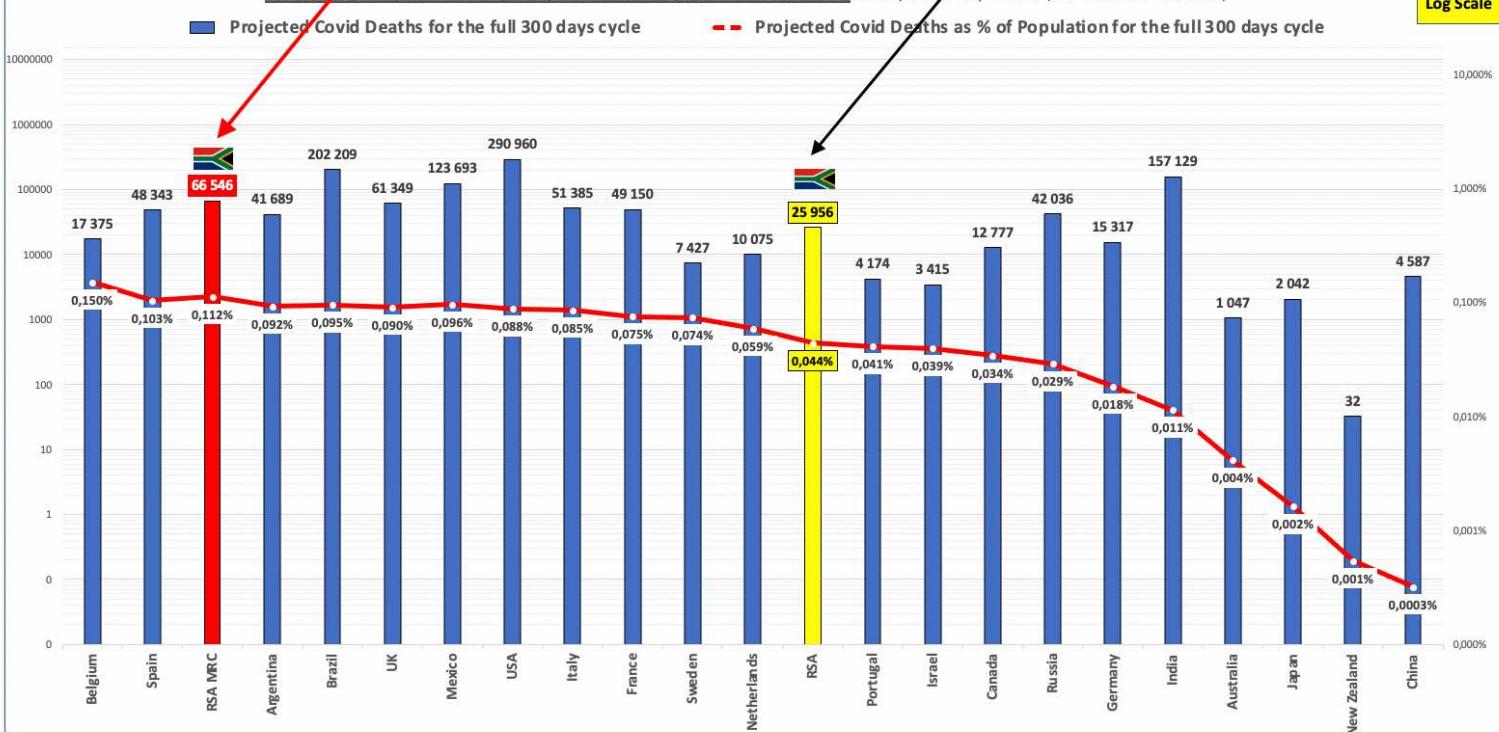
This projection uses the SA Medical Research Council data on "Excess Deaths". The assumption is that 90% of their reported Excess Deaths are probably due to Covid. The ratios are updated bi-weekly by the MRC but I apply these ratios to the official stats on a daily basis for this projection.

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)

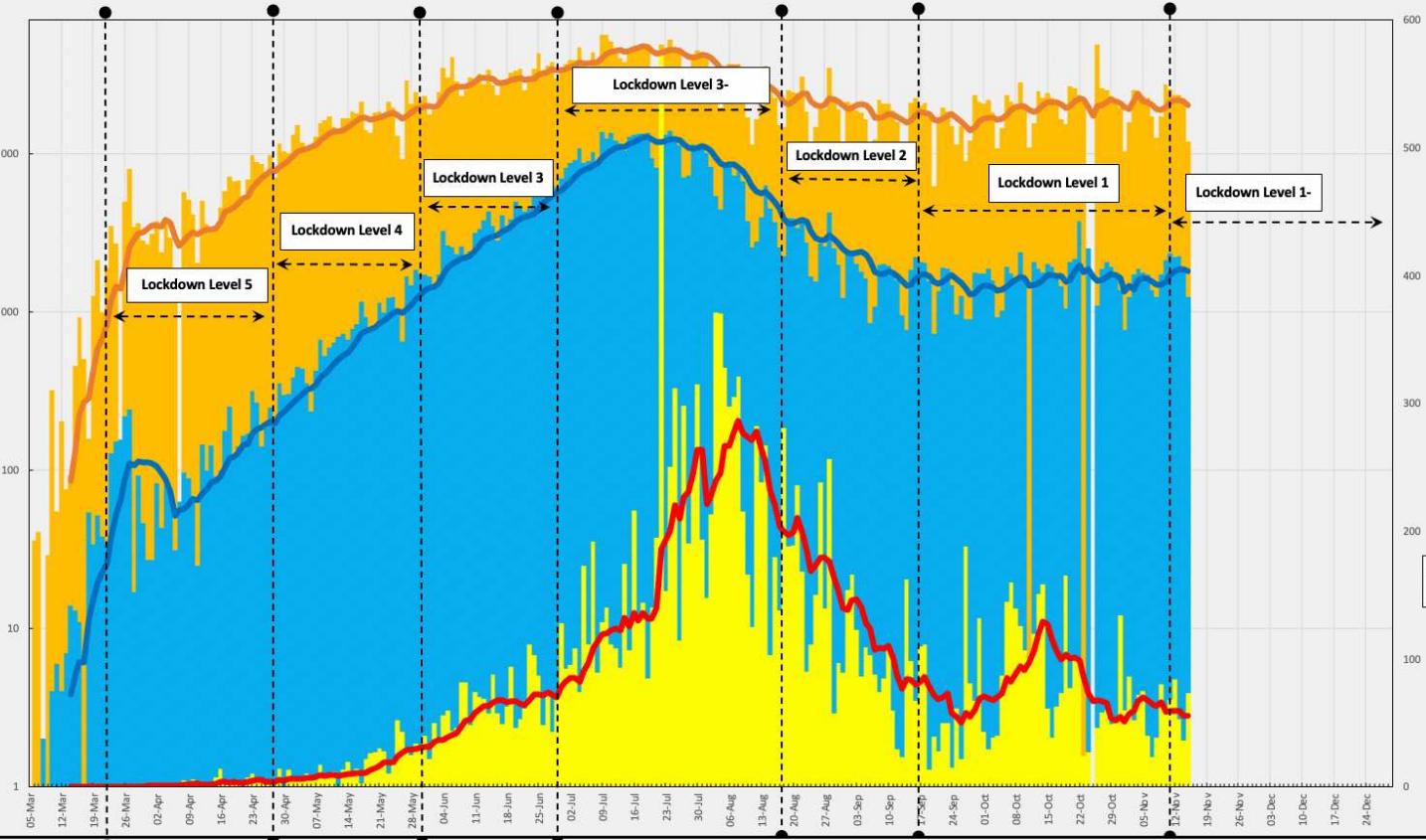
Log Scale



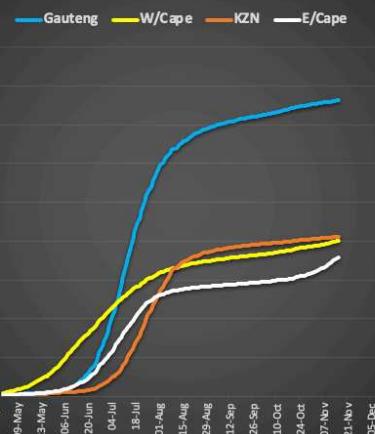
Note: Above Mortality %'s are overall projected mortality of the populations (PMR), NOT deaths of only those infected (CFR).

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

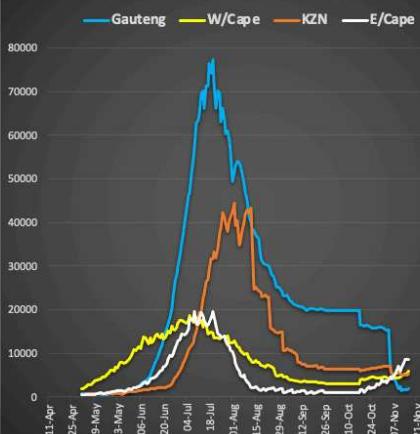
■ Daily Tests ■ Daily Cases ■ Daily Deaths ■ 10 per. Mov. Avg. (Daily Tests) ■ 10 per. Mov. Avg. (Daily Cases) ■ 10 per. Mov. Avg. (Daily Deaths)



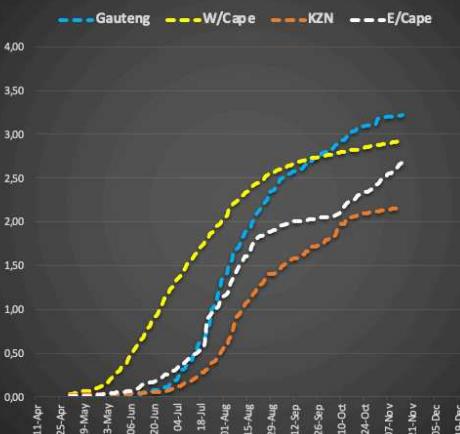
**Major Prov Cum Cases per 100k PoP**



**Major Prov Still Active Cases**



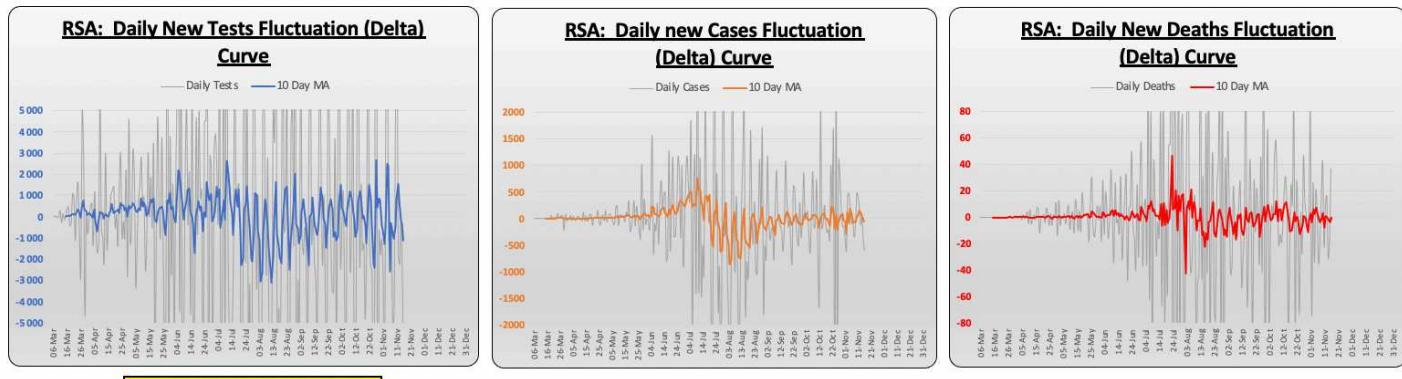
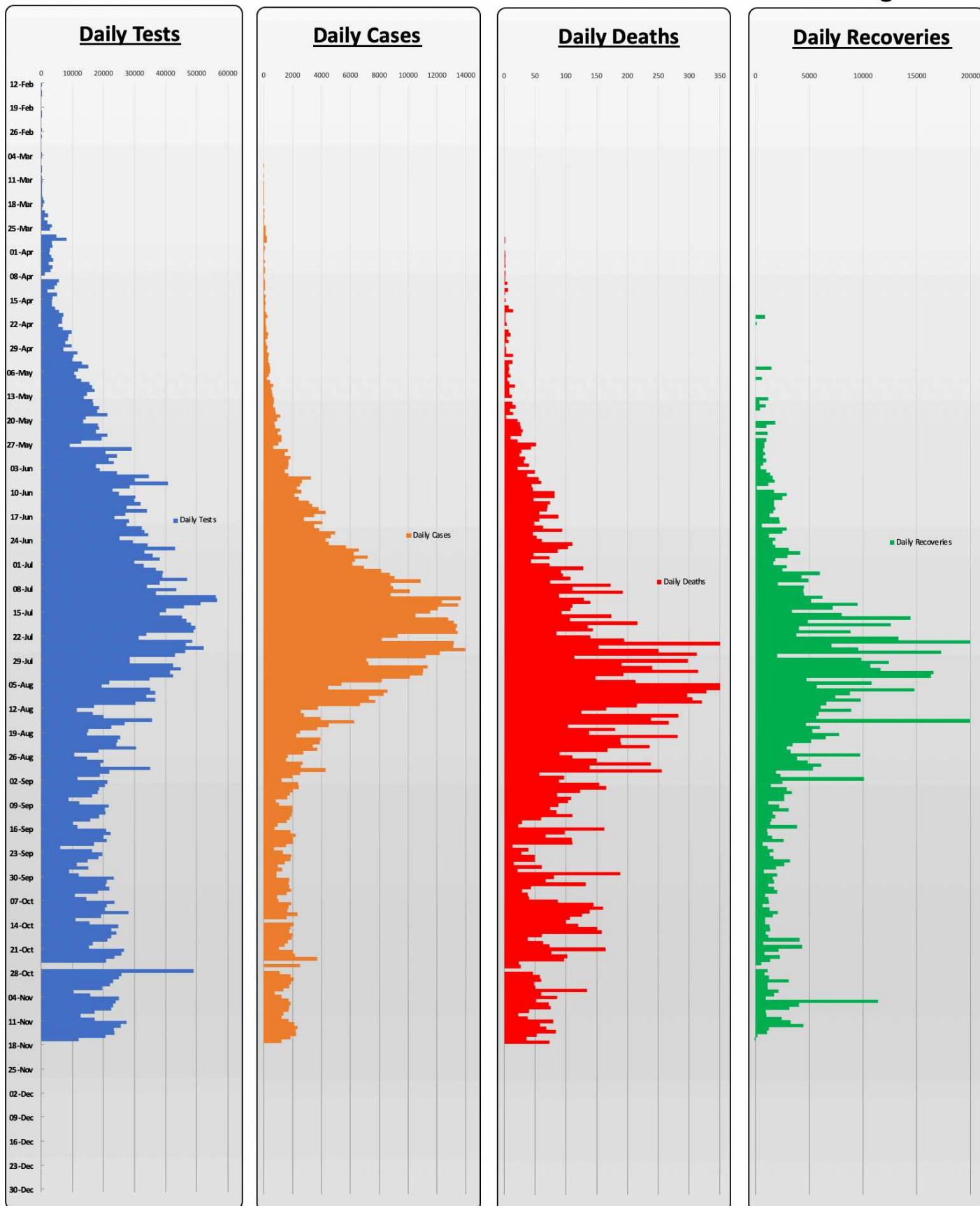
**Major Prov Cum Deaths per 100k PoP**



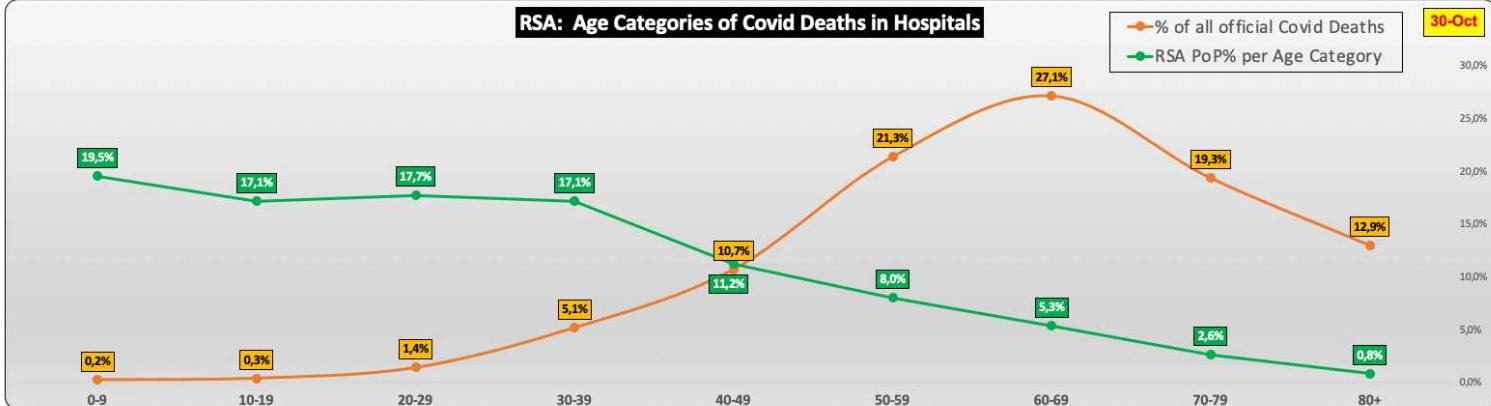
Data as at: 16 November 2020

Unless otherwise indicated

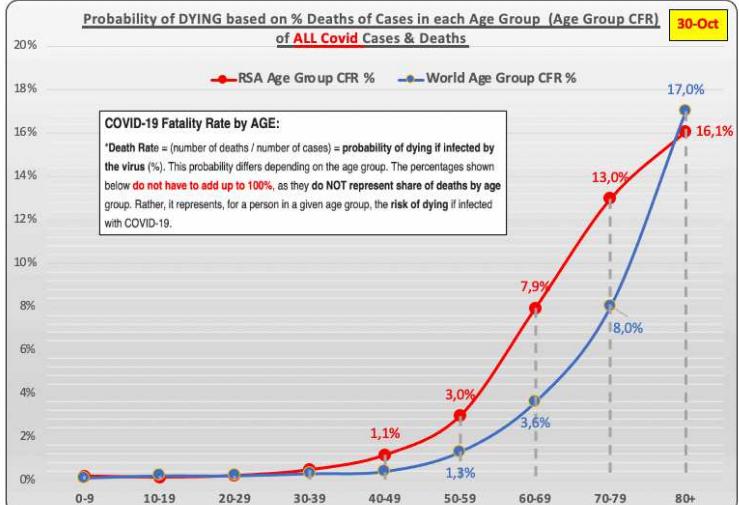
hdg 16 November 2020



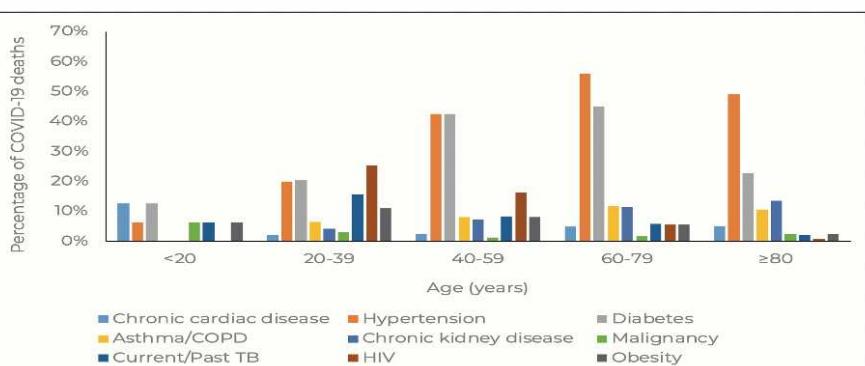
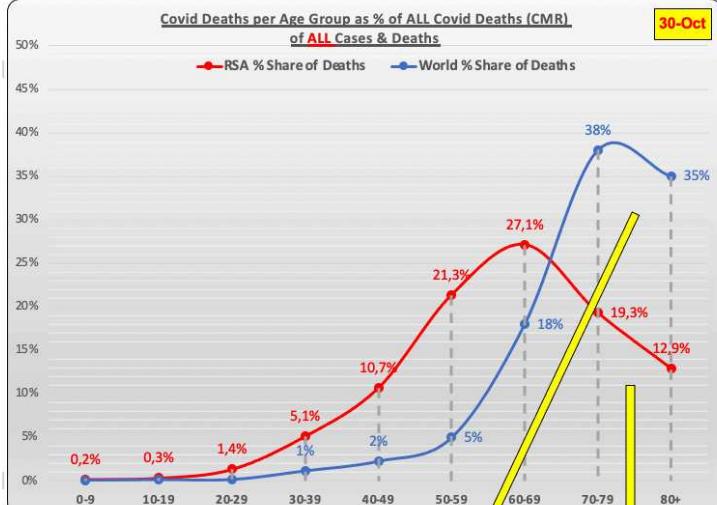
## RSA: Age Categories of Covid Deaths in Hospitals



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

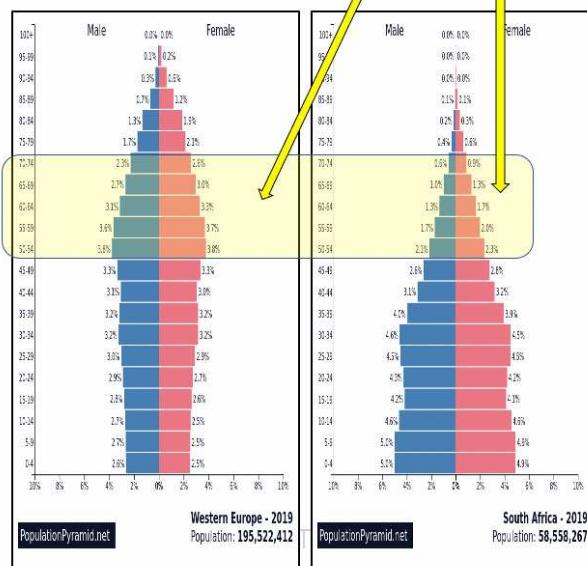


## Covid Deaths per Age Group as % of ALL Covid Deaths (CMR) of ALL Cases & Deaths

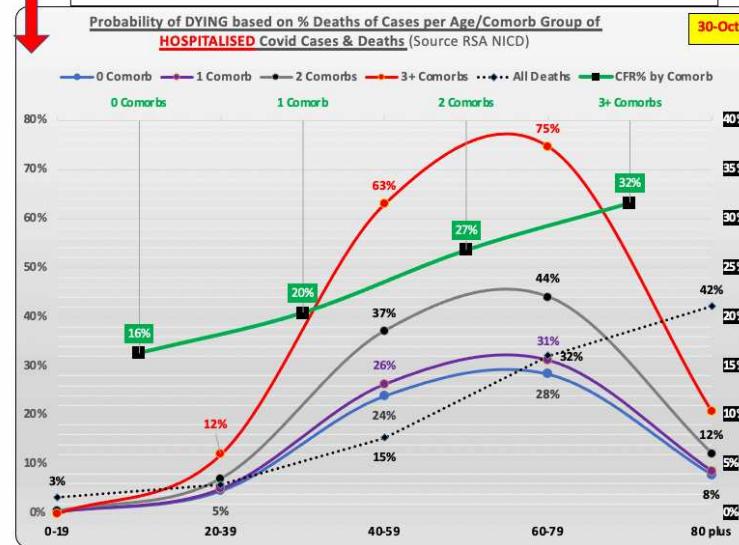


## COVID-19 Fatality Rate by AGE:

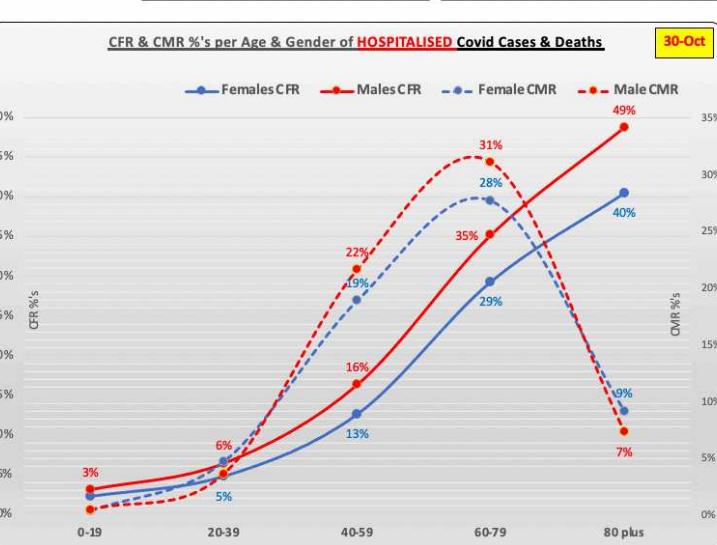
\*Death Rate = (number of deaths / number of cases) = probability of dying if infected by the virus (%). This probability differs depending on the age group. The percentages shown below do not have to add up to 100%, as they do NOT represent share of deaths by age group. Rather, it represents, for a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



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



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

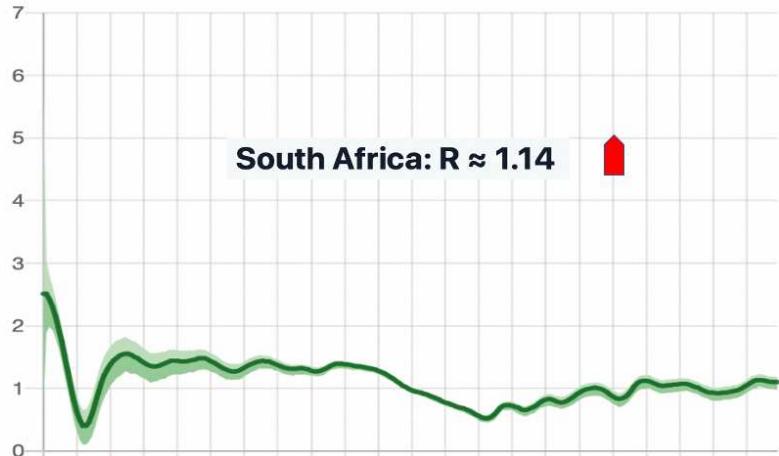


# Covid REPRODUCTIVE NUMBER (Rt) in RSA & Provinces

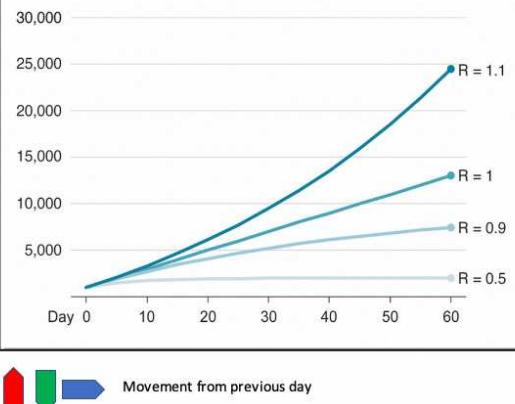
Data as at: 16 November 2020

Page 5.3

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



How 1,000 cases would increase under different infection rates

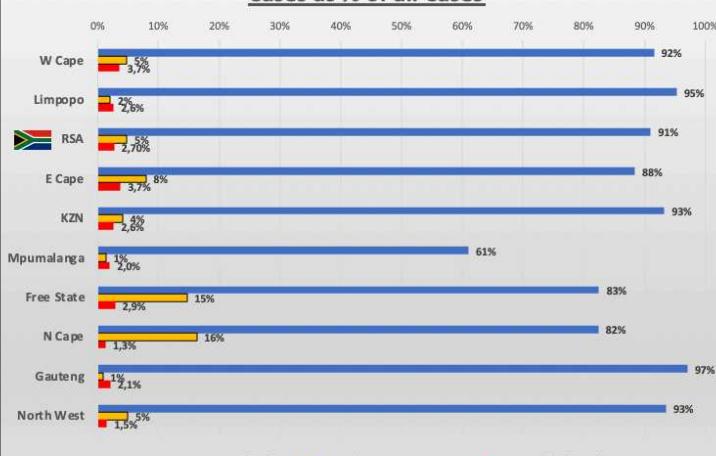


Movement from previous day

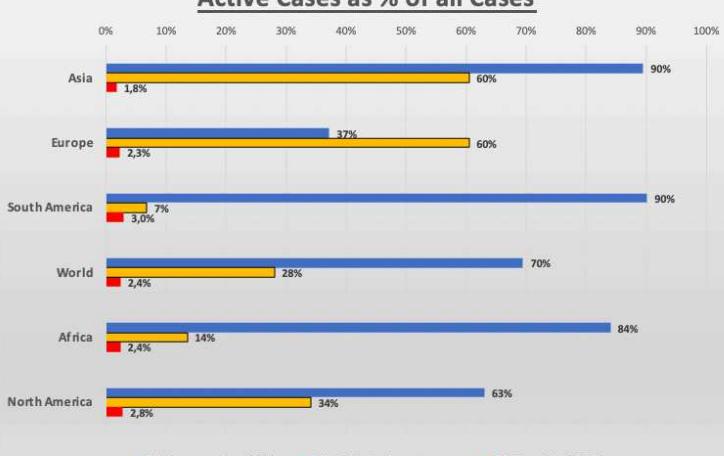


Rt graphs from: <https://reproduction.live/world/ZA>

## 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



■ % Recoveries (RR) ■ % Still Active Cases ■ % Deaths (CFR)

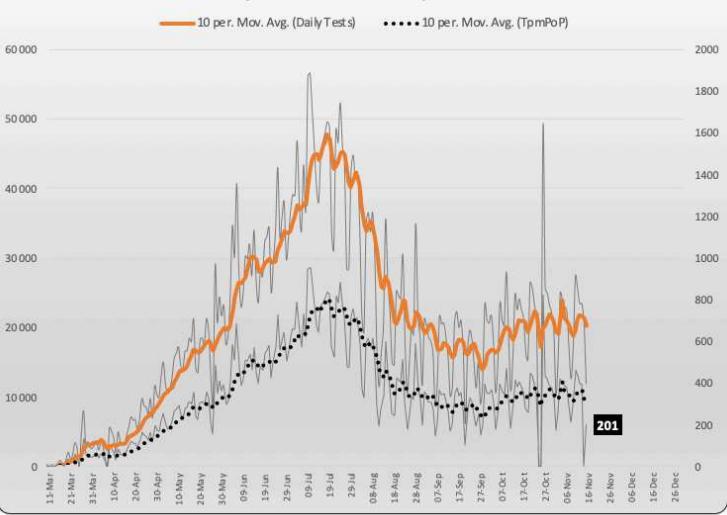
■ % Recoveries (RR) ■ % Still Active Cases ■ % Deaths (CFR)

Data as at: 16 November 2020

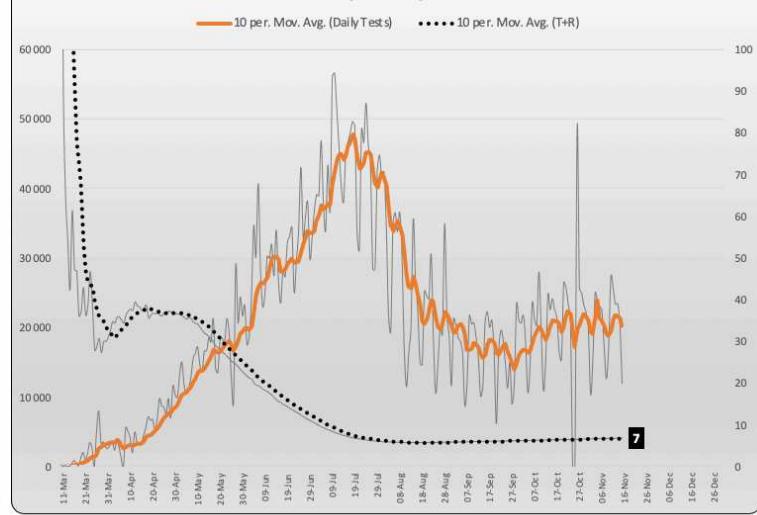
Unless otherwise indicated

hdg 16 November 2020

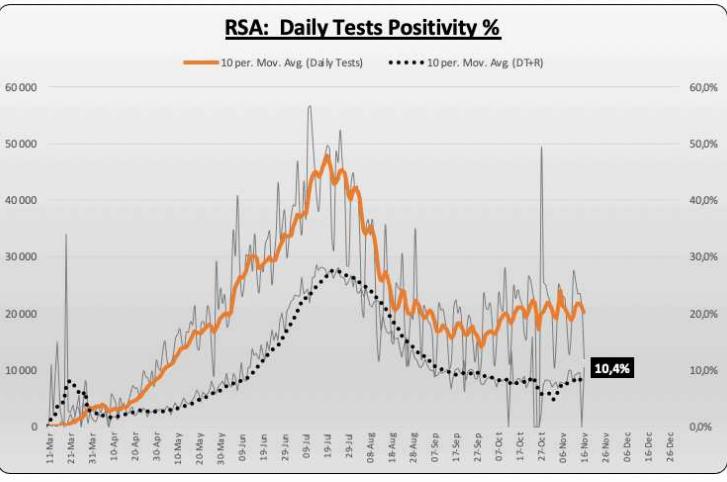
## RSA: Daily Tests conducted per million PoP



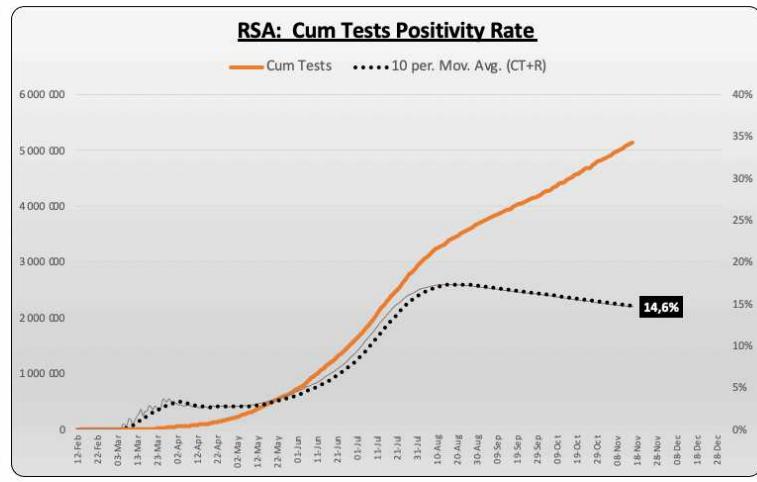
## RSA: Daily Tests per +Case



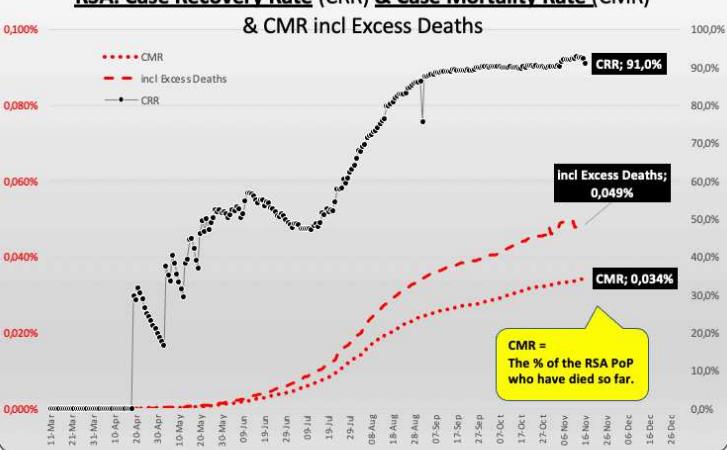
## RSA: Daily Tests Positivity %



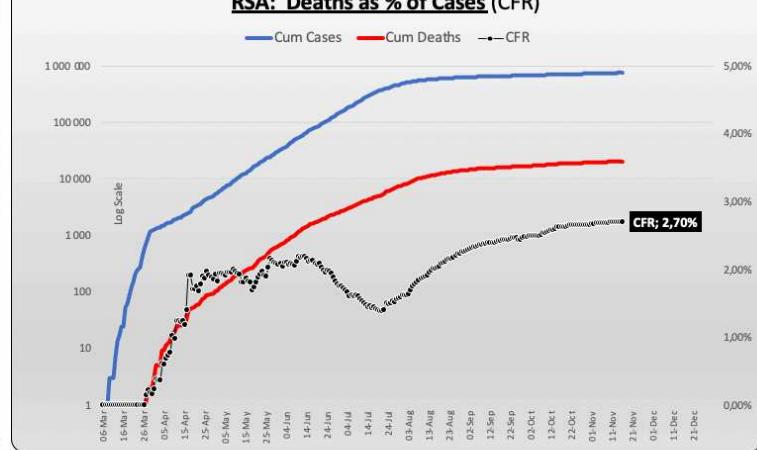
## RSA: Cum Tests Positivity Rate



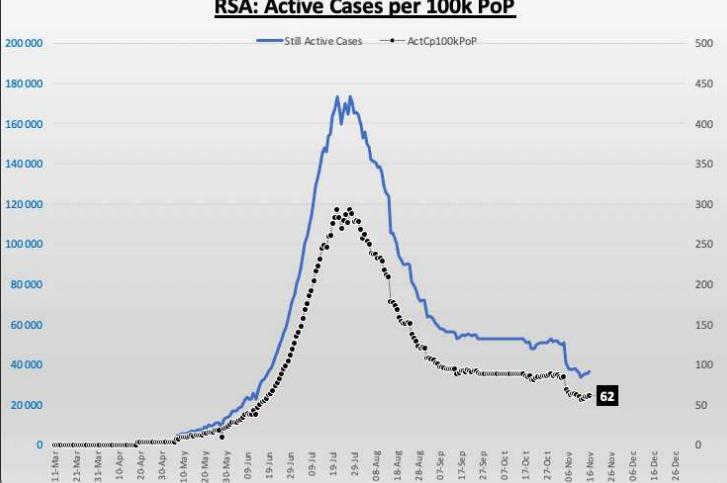
## RSA: Case Recovery Rate (CRR) & Case Mortality Rate (CMR) & CMR incl Excess Deaths



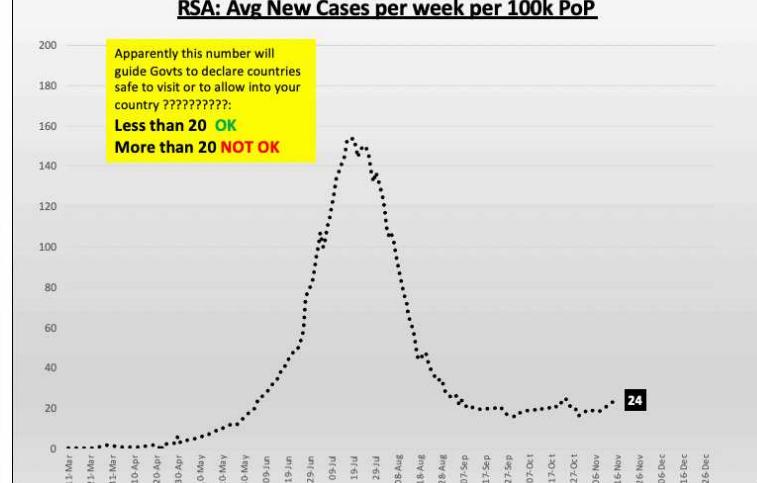
## RSA: Deaths as % of Cases (CFR)



## RSA: Active Cases per 100k PoP

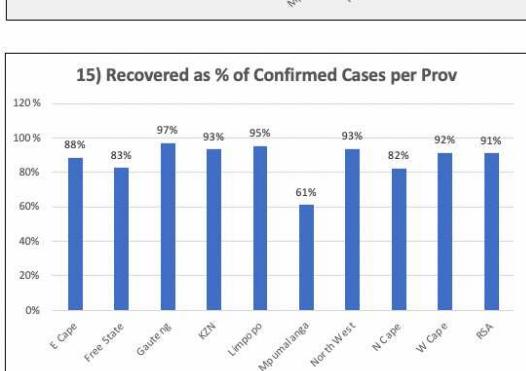
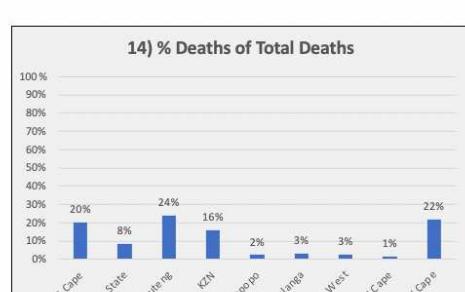
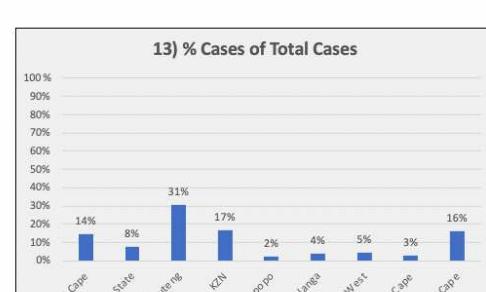
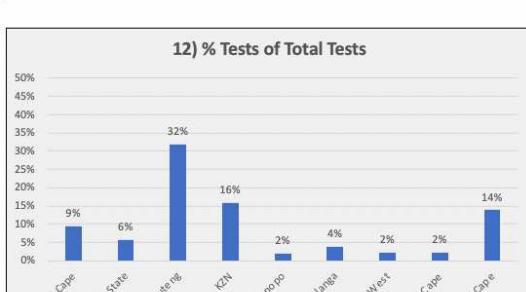
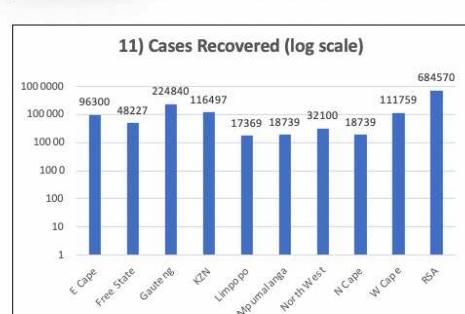
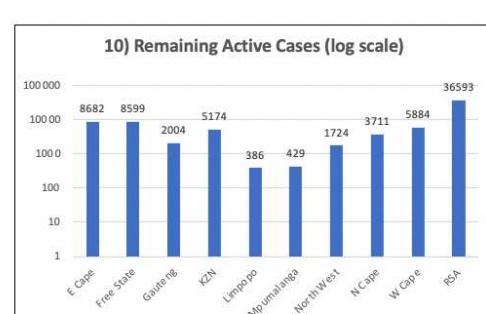
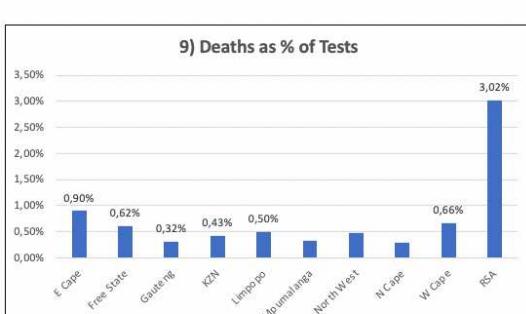
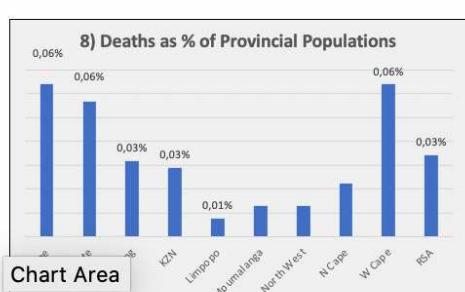
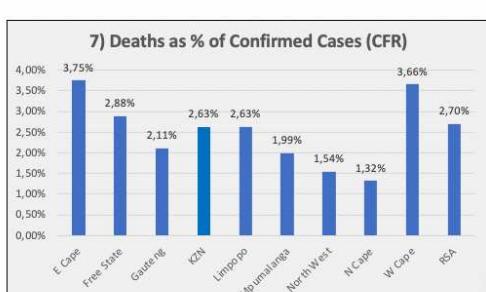
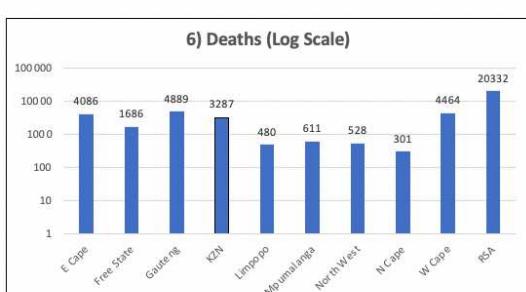
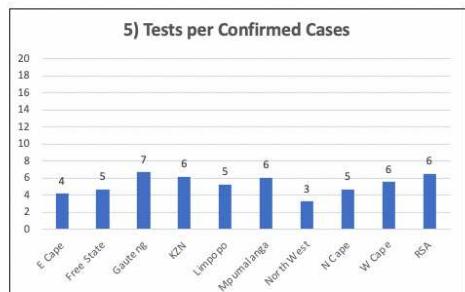
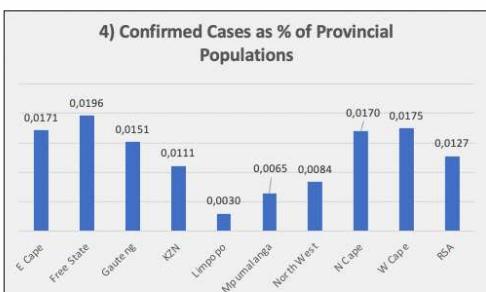
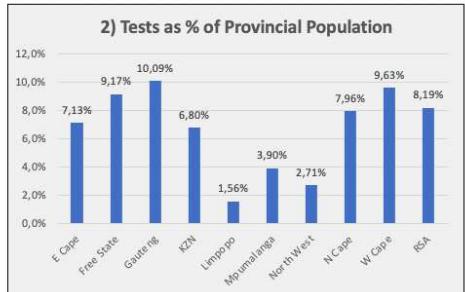
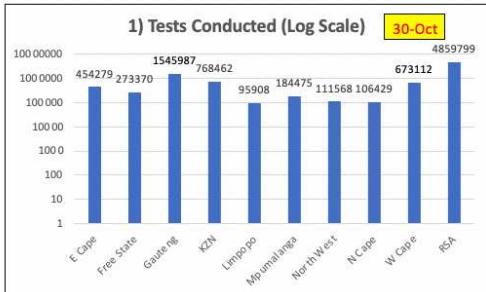
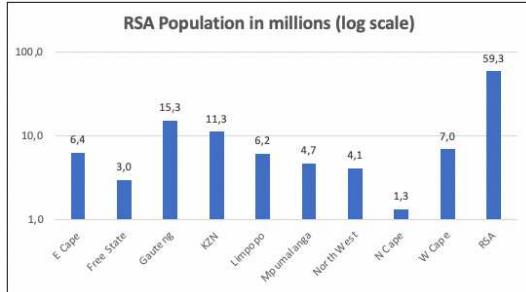


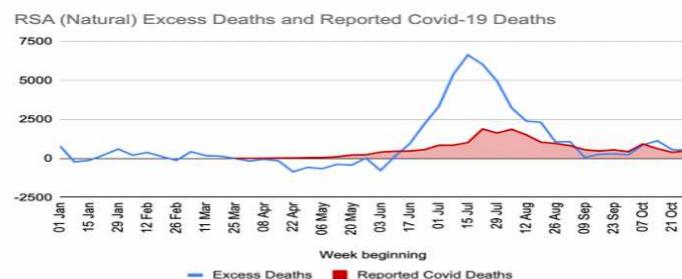
## RSA: Avg New Cases per week per 100k PoP



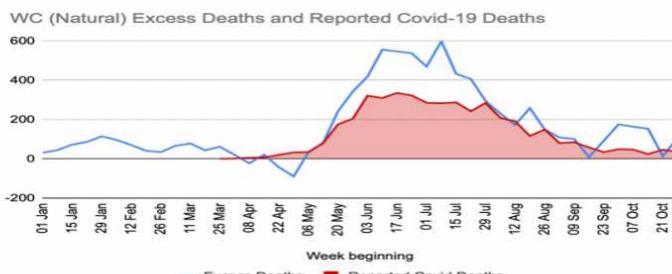
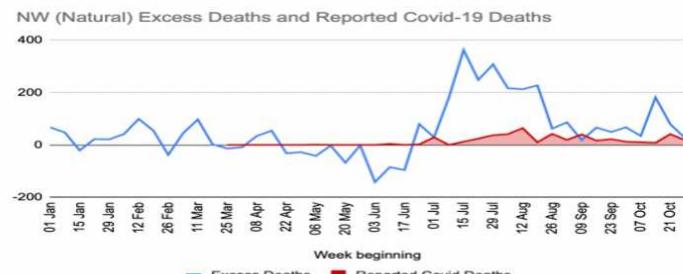
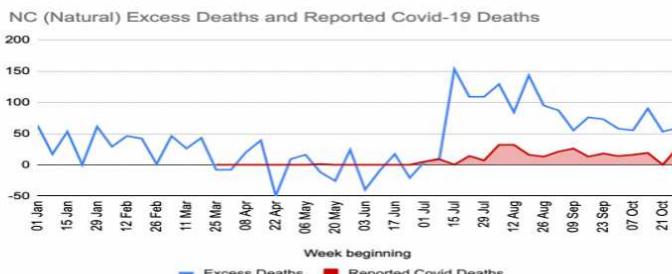
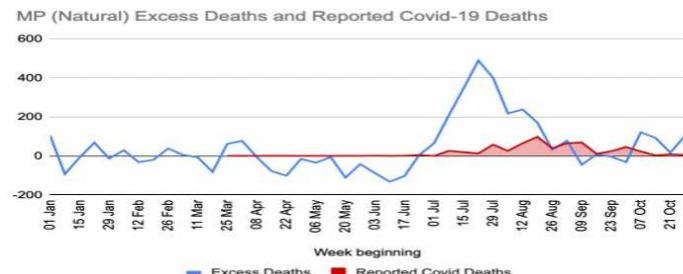
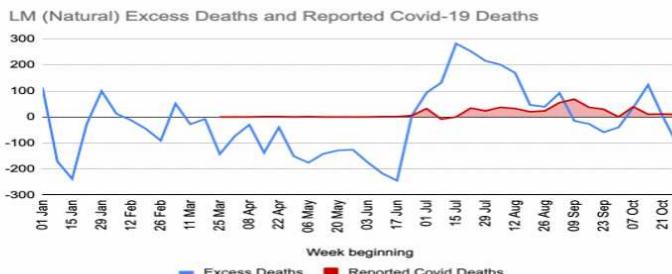
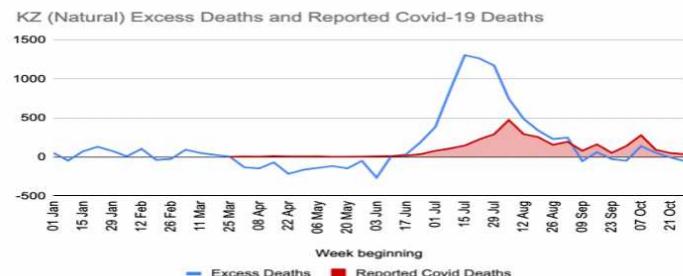
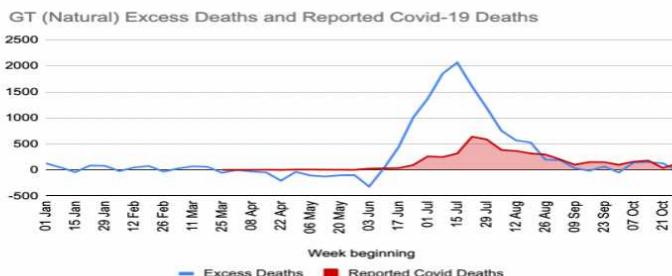
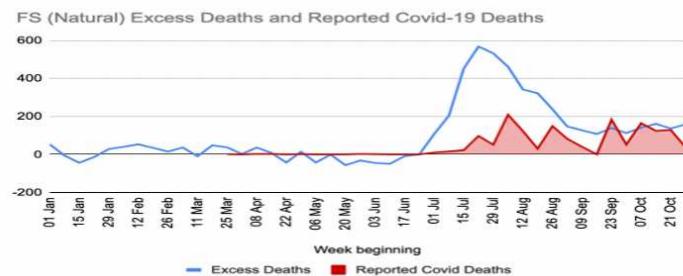
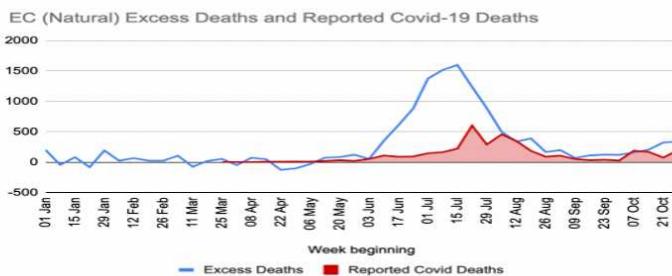
# RSA Covid Stats: National & Provincial Analysis

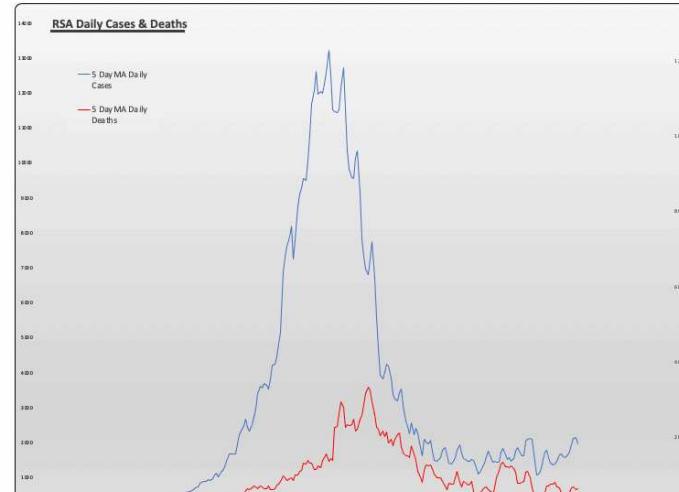
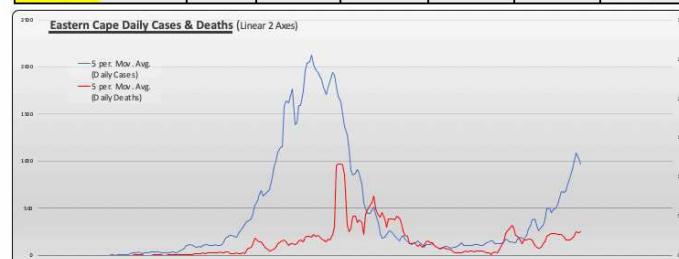
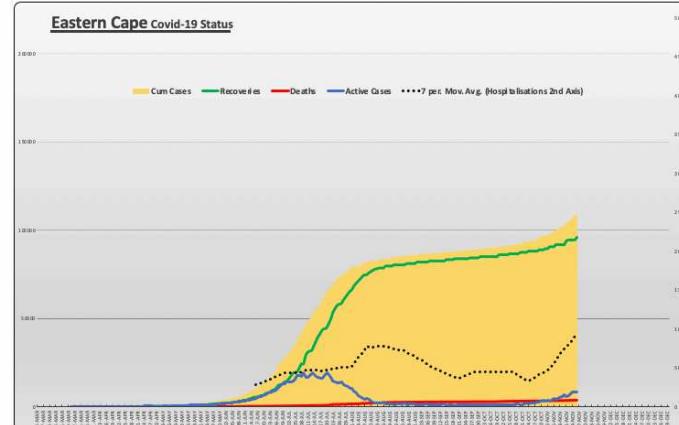
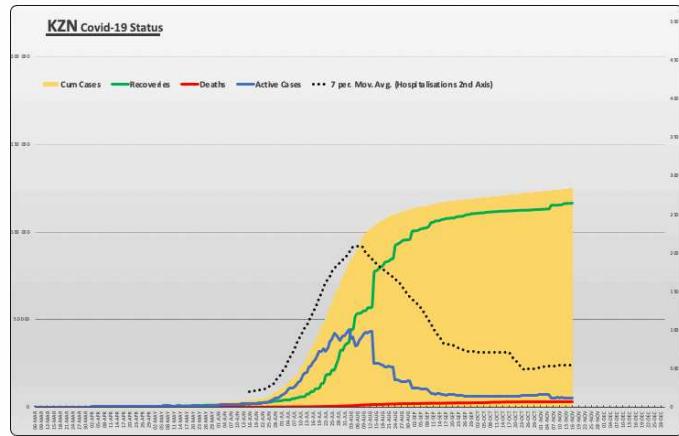
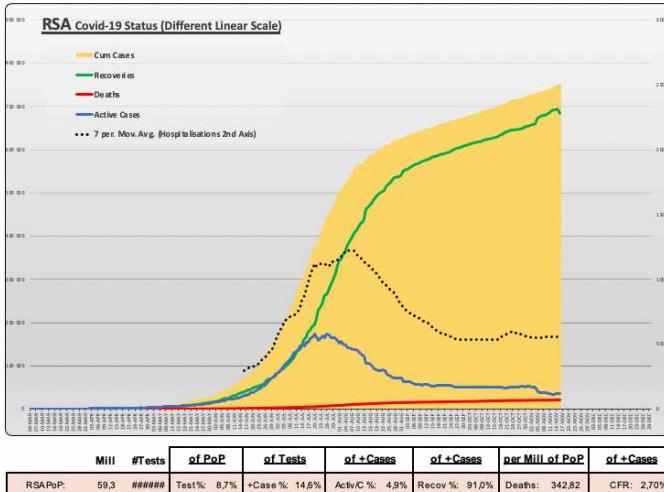
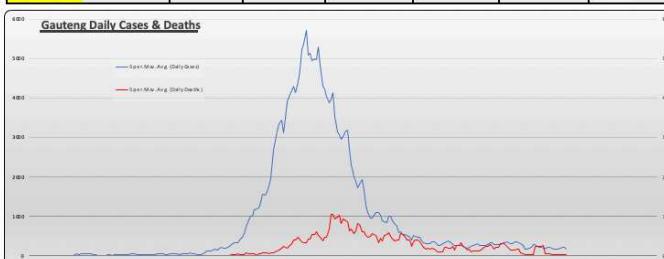
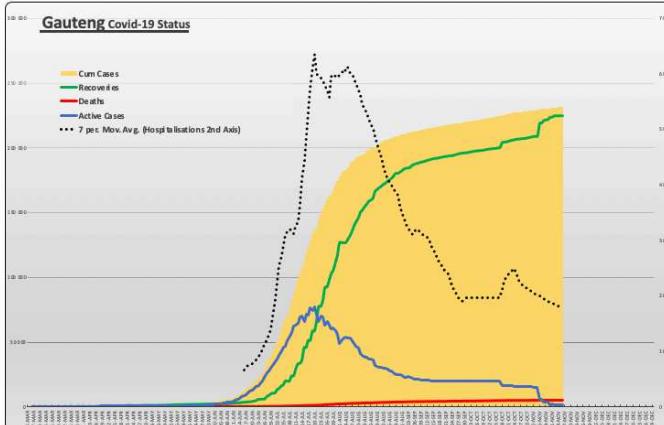
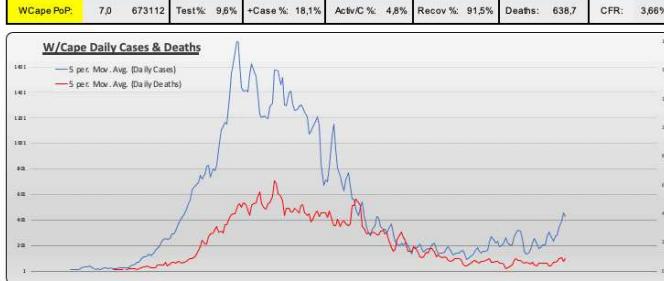
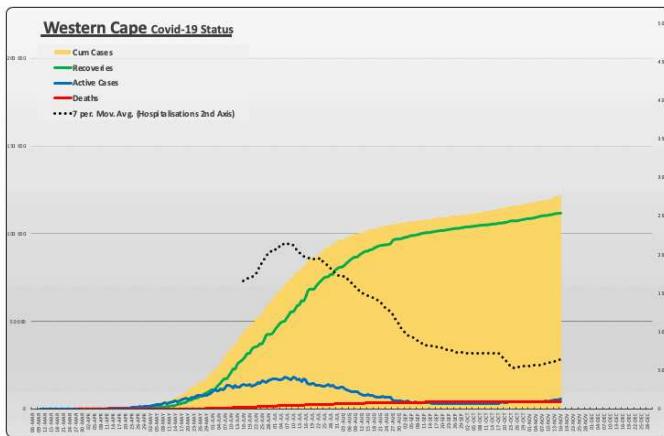
Page 6

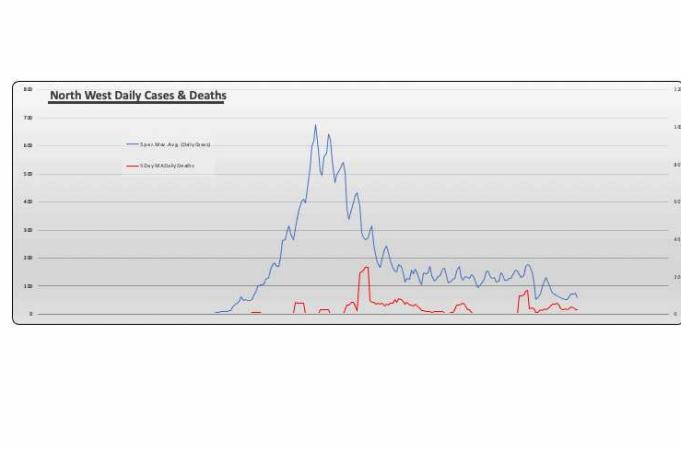
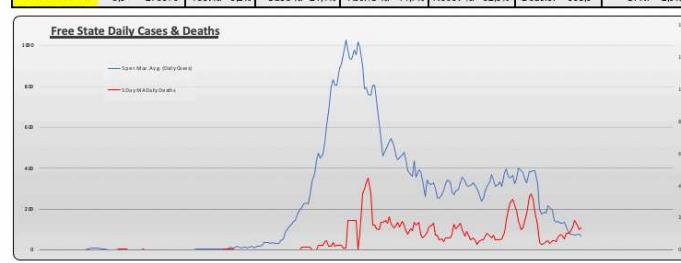
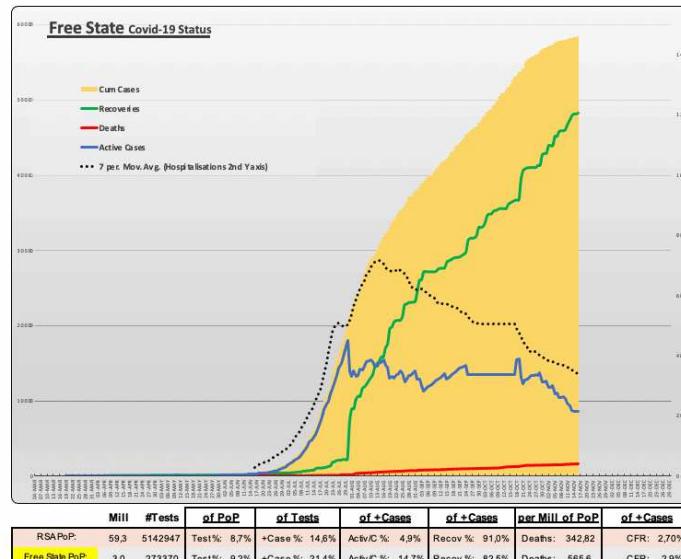
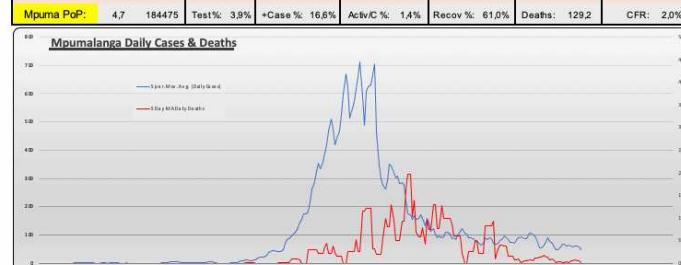
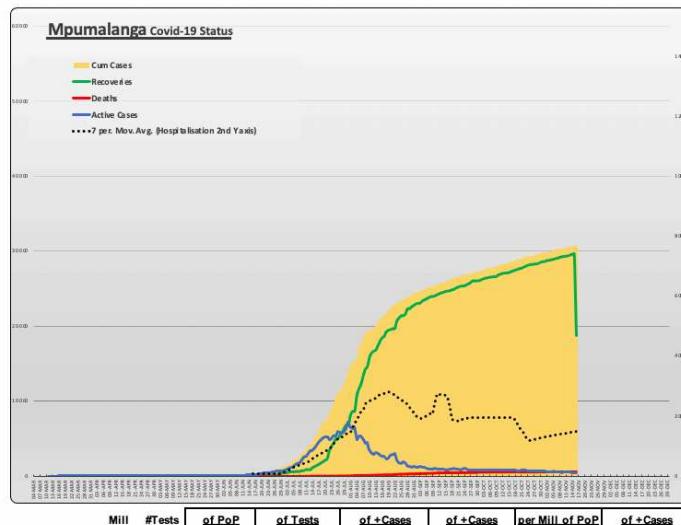
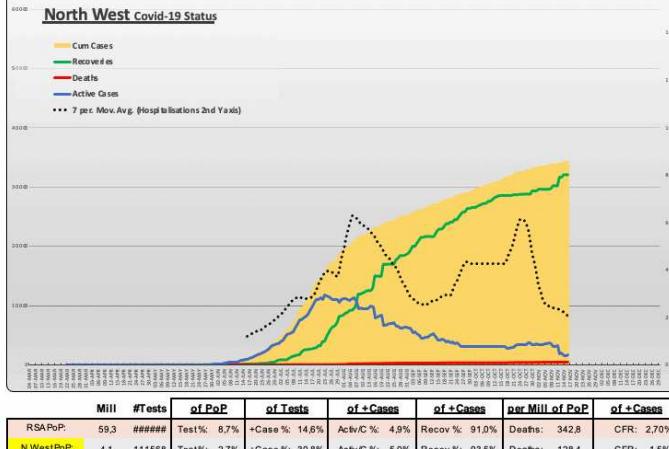
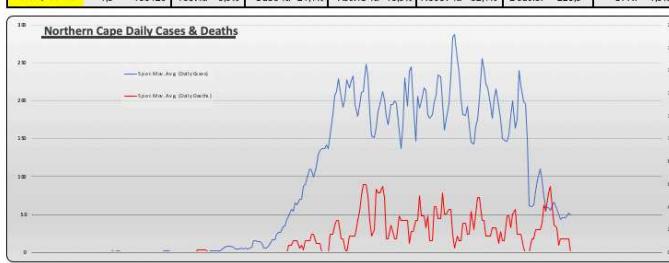
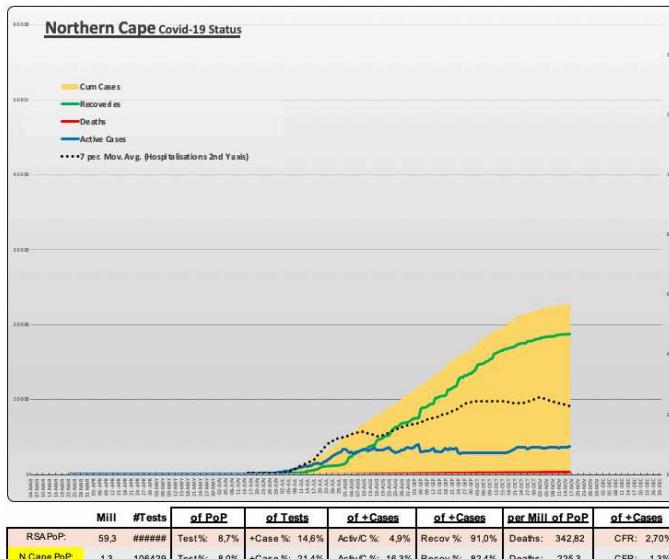
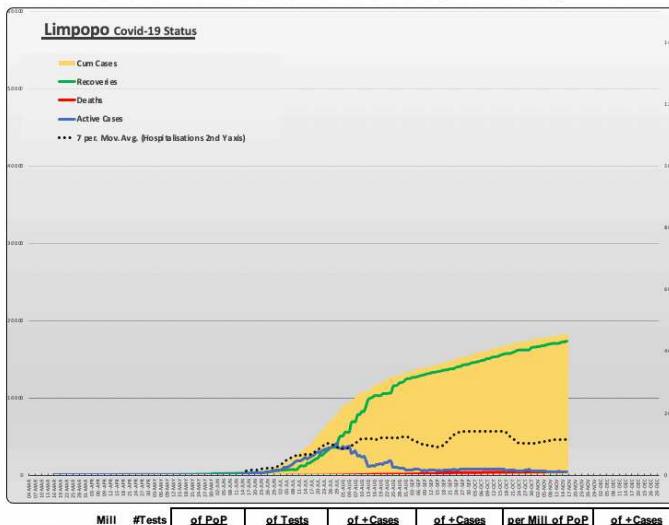


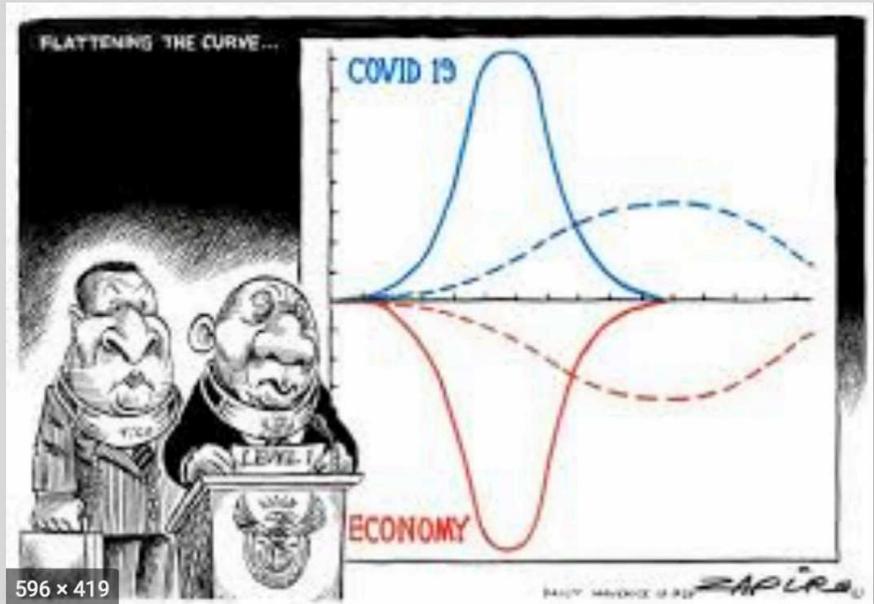


## Provinces









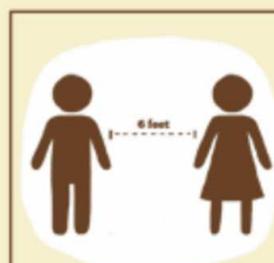
## HOW TO STAY HEALTHY ON YOUR BIRTHDAY



1. Wear a Mask



2. Wash Hands



3. Social Distancing



4. Stay Hydrated