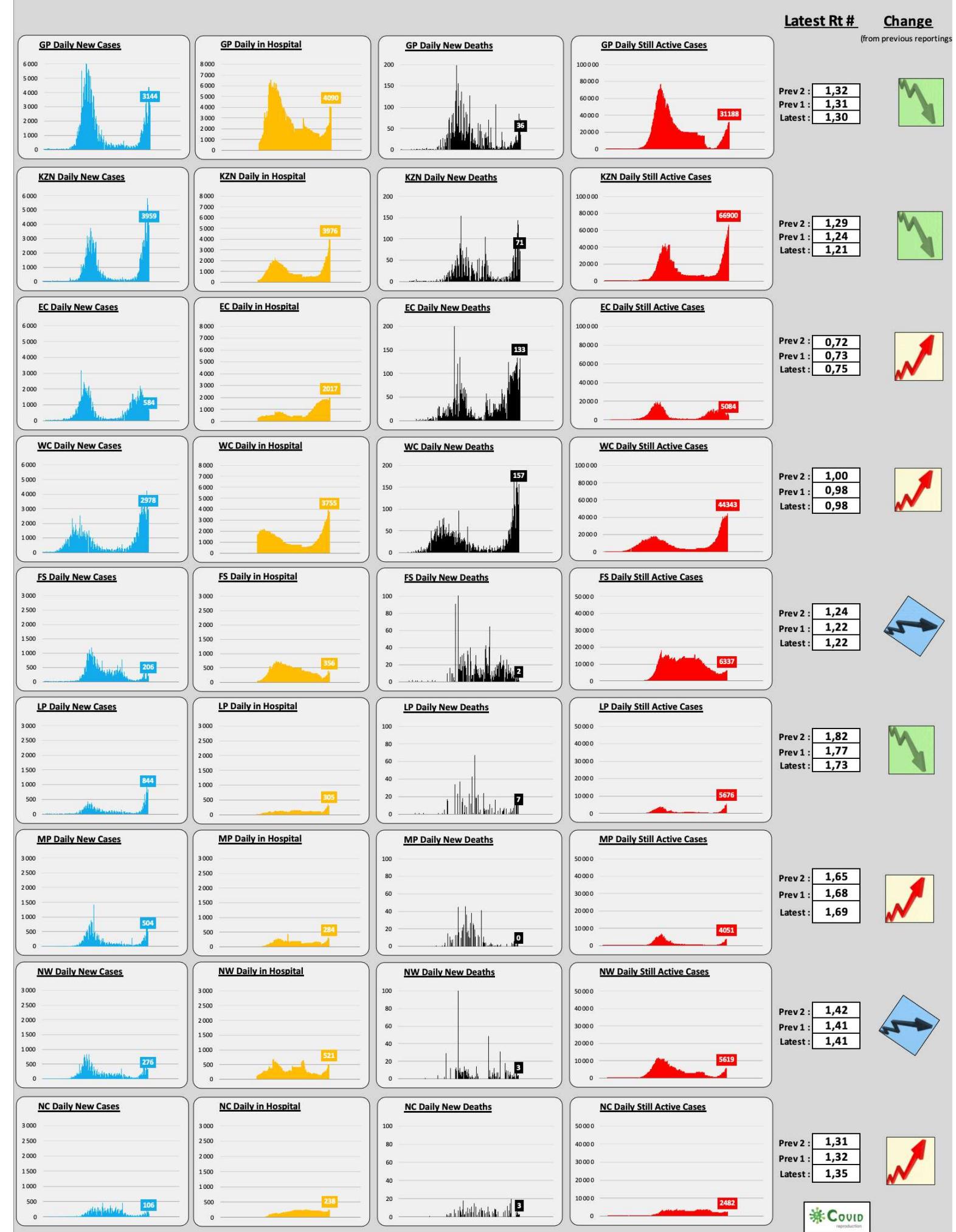


Latest Rt #

Prev 2 :	1,20
Prev 1 :	1,20
Latest :	1,12

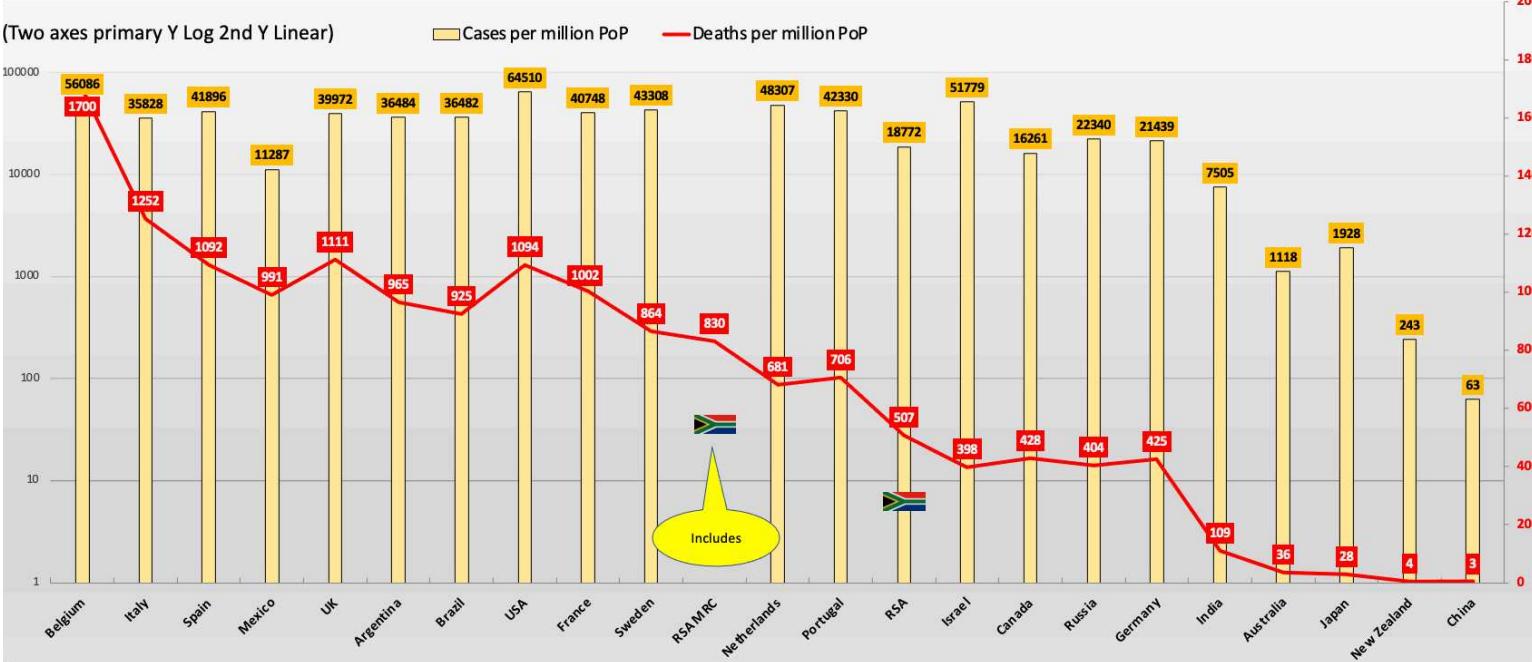
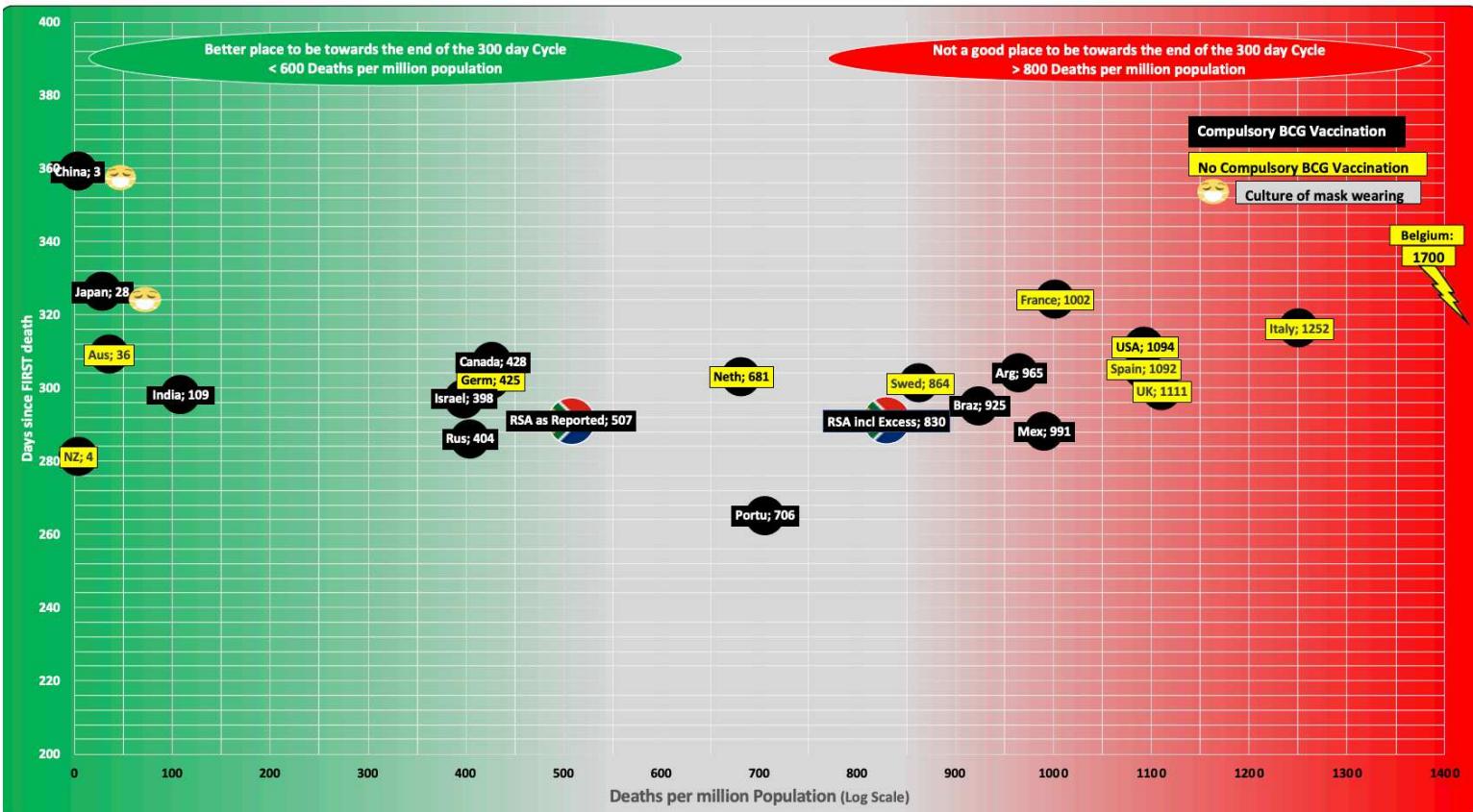
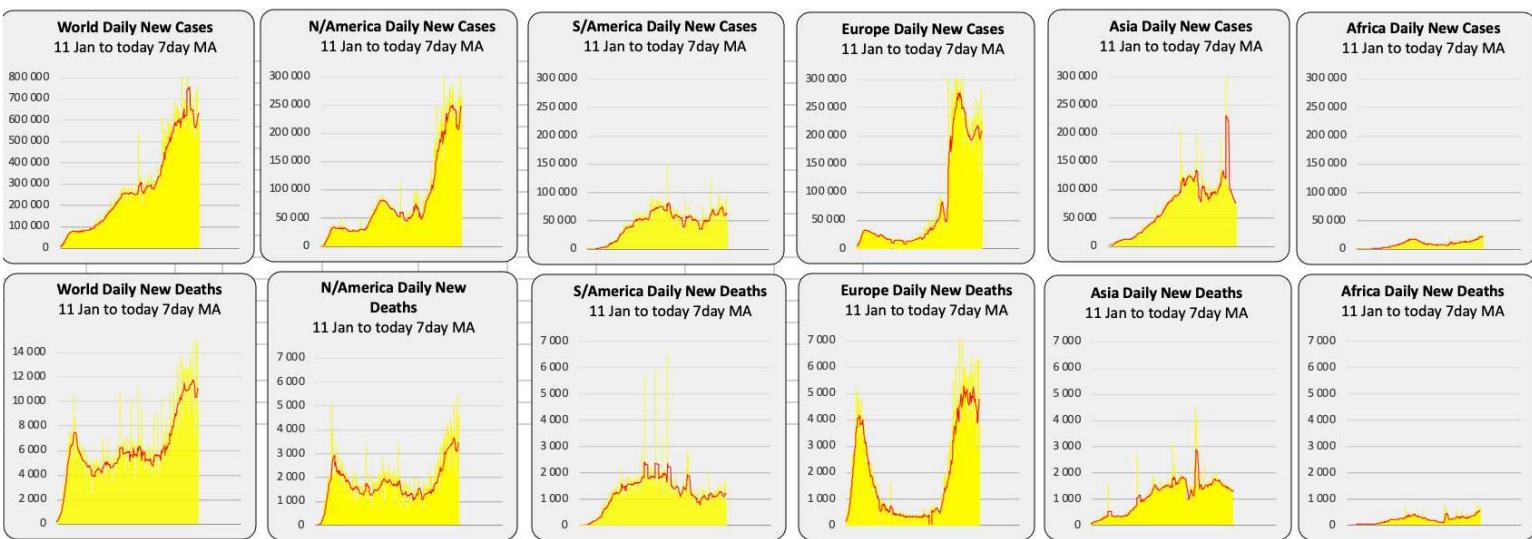


RSA Provinces detailed daily Data and Trends



Some World Data plus Selected Countries' Reported Deaths per mill PoP

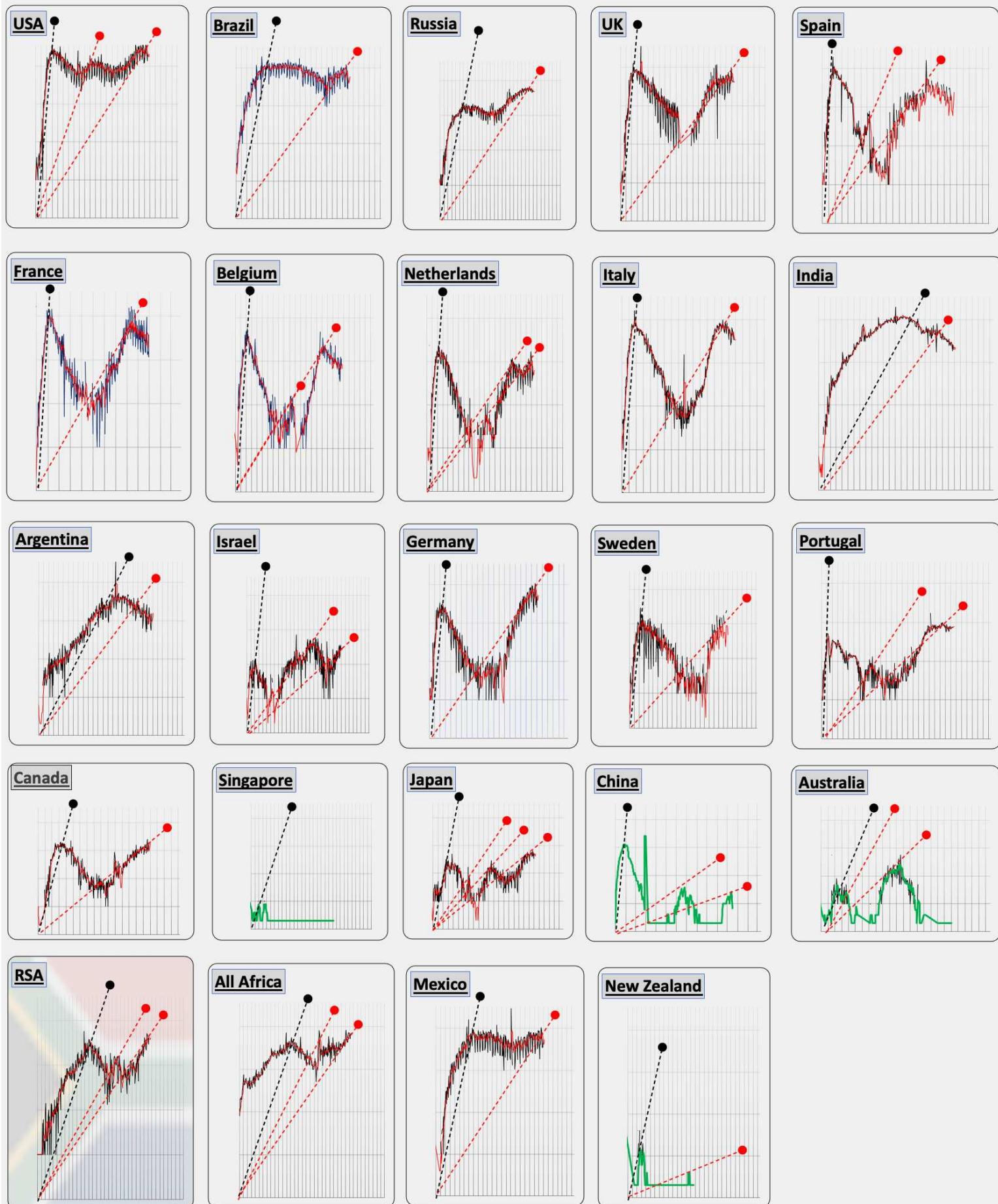
Page 2



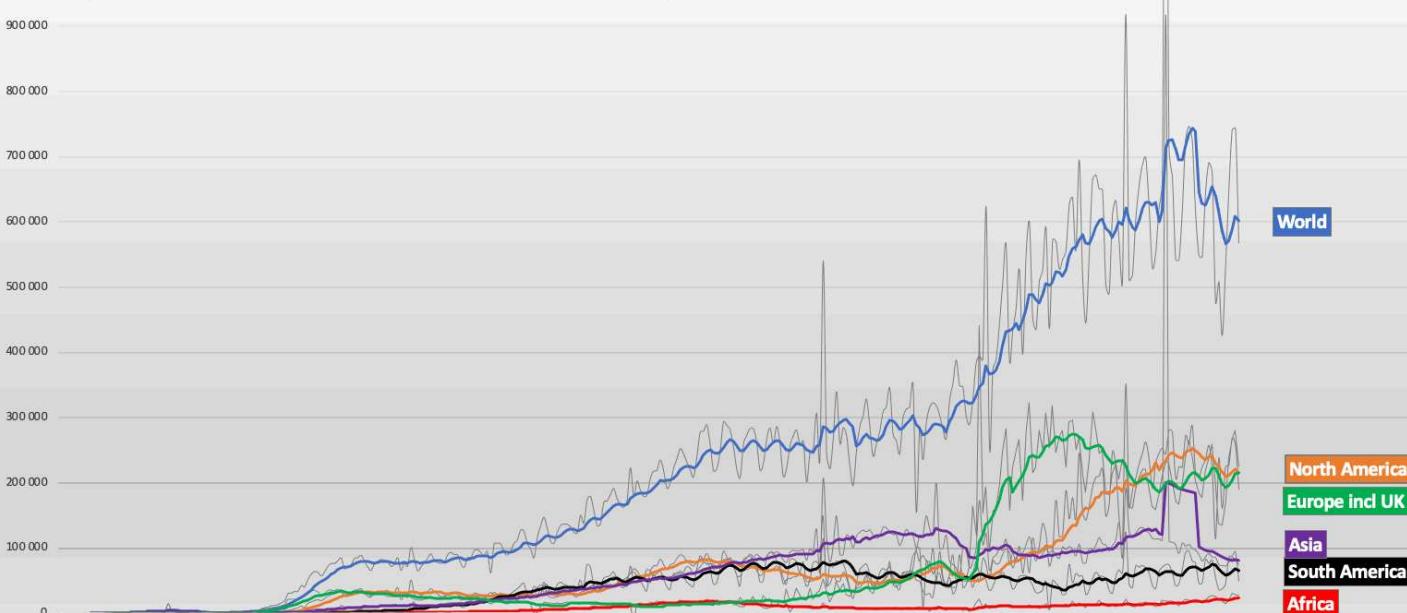
Daily Deaths Curves & Rate of Onset/Next Wave "Inclinometers" for selected countries

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

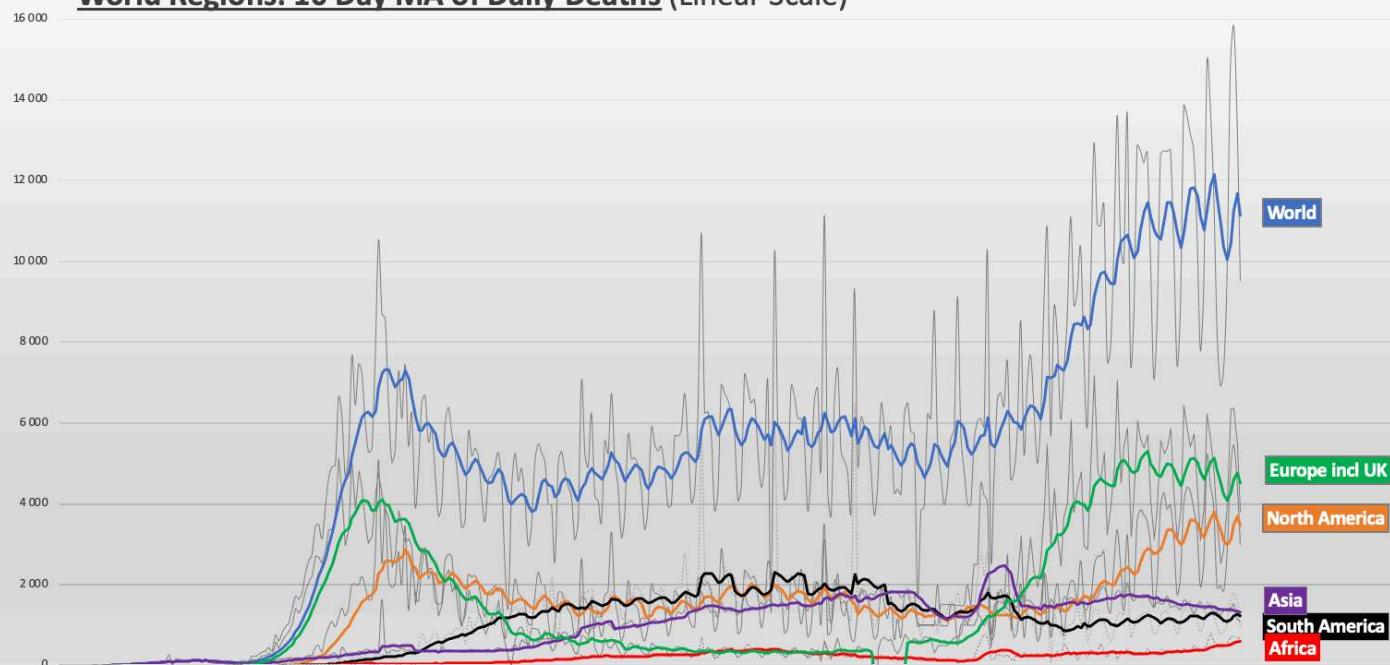
- Peaked but spiking again
 - Passed peak but could rebound OR next wave
 - Well past peak, unlikely to rebound
- Onset/1st wave
- 2nd & 3rd waves



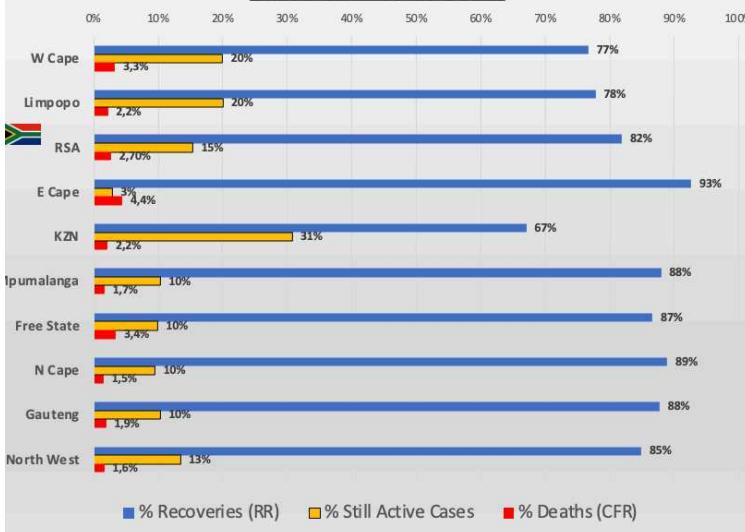
World Regions: 10 Day MA of Daily Cases (Linear Scale)



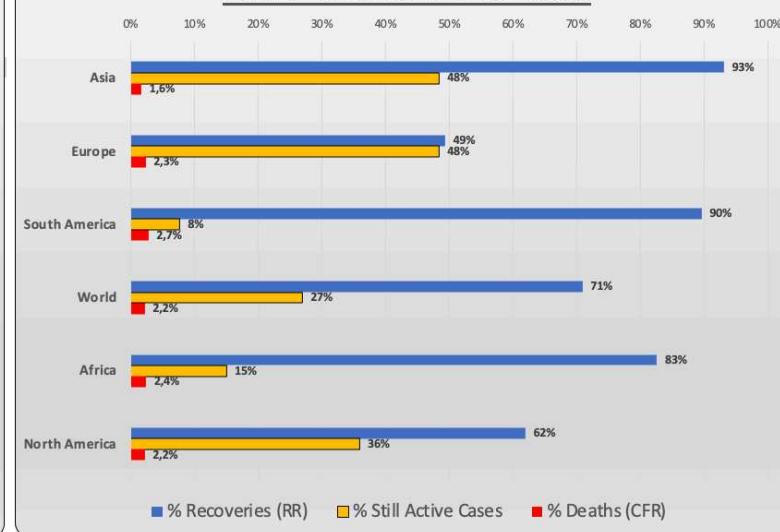
World Regions: 10 Day MA of Daily Deaths (Linear Scale)



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



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



2018 Avg DAILY WORLD Mortalities v COVID: Daily Deaths (Linear Scales)

Avg Daily Covid Deaths 2020 to date: **5182**
 Highest Daily Covid Deaths 2020 to date: **15839**
 Latest Daily Covid Deaths 2020 to date: **9845**

■ World "Normal" Deaths per day



WHO 2018 World Mortalities pd	
	146573
Cardio	48742
Cancer	26181
Respiratory incl Flu	17734
Digestive & Diarrheal	10800
Dementia	6889
Neonata	4887
Diabetes	3753
Liver	3624
Traffic	3406
Renal	3370
TB	3243
HIV	2615
Suicide	2175
Malaria	1698
Malnutrition	1375
Homicide	1111
Parkinson's	933
Natural Disasters	835
Meningitis	789
Childbirth	531
Alcohol Abuse	507
Drug Abuse	456
Armed Conflicts	355
Hepatitis	346
Climatic	146
Terrorism	72



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

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.

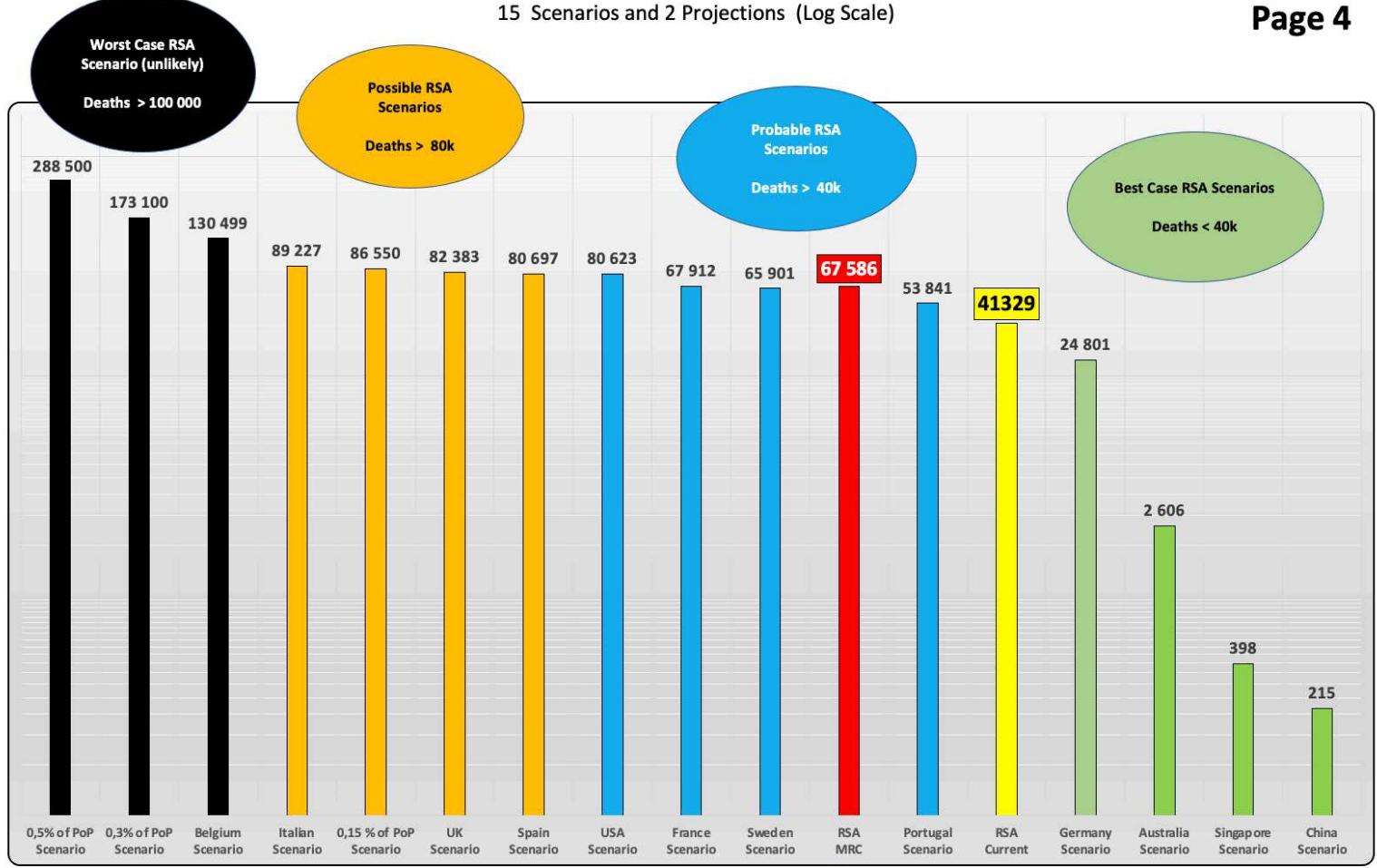
2017 Avg DAILY RSA Mortalities v COVID: Daily Deaths (Linear Scales)

Avg Daily Covid Deaths since 1st Death 2020 to date: **69.2**
 Highest Daily Covid Deaths 2020 to date: **572**
 Latest Daily Covid Deaths 2020 to date: **412**

■ RSA "Normal" Mortalities per day

StatsSA 2017 RSA Mortalities per day	
	1223
Natural Causes	543
Unnatural Causes	140
Cardio	96
Respiratory incl Flu	88
TB	79
Diabetes	69
Cancers	61
HIV	59
Hypertensive	55
Other Viral	46



**Key:**

All Scenarios duly adjusted for population size and for the different timelines into the deemed 390 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.

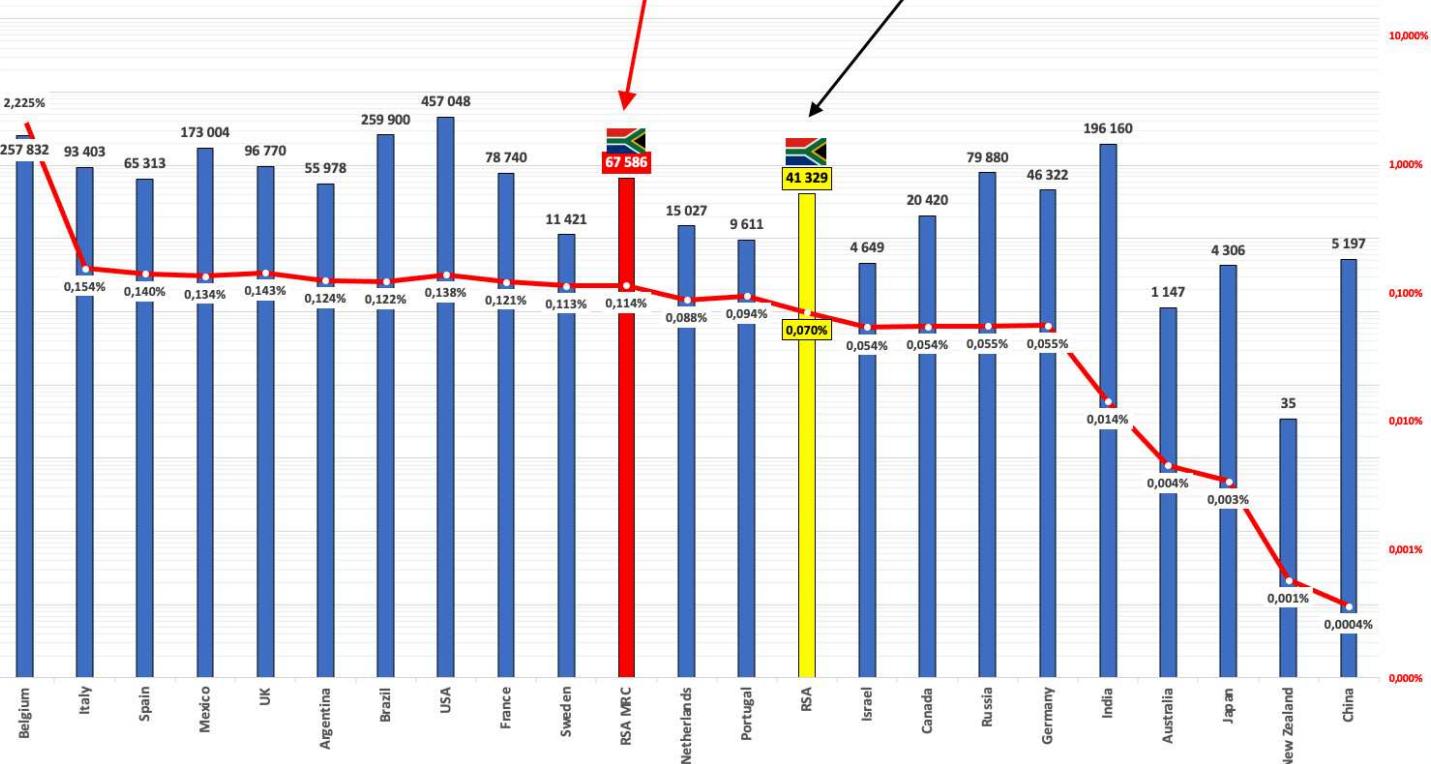
This number is simply the avg daily Deaths as reported to date x 390 (deemed cycle).

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)

■ Projected Covid Deaths for the full 390 days cycle - Projected Covid Deaths as % of Population for the full 390days cycle

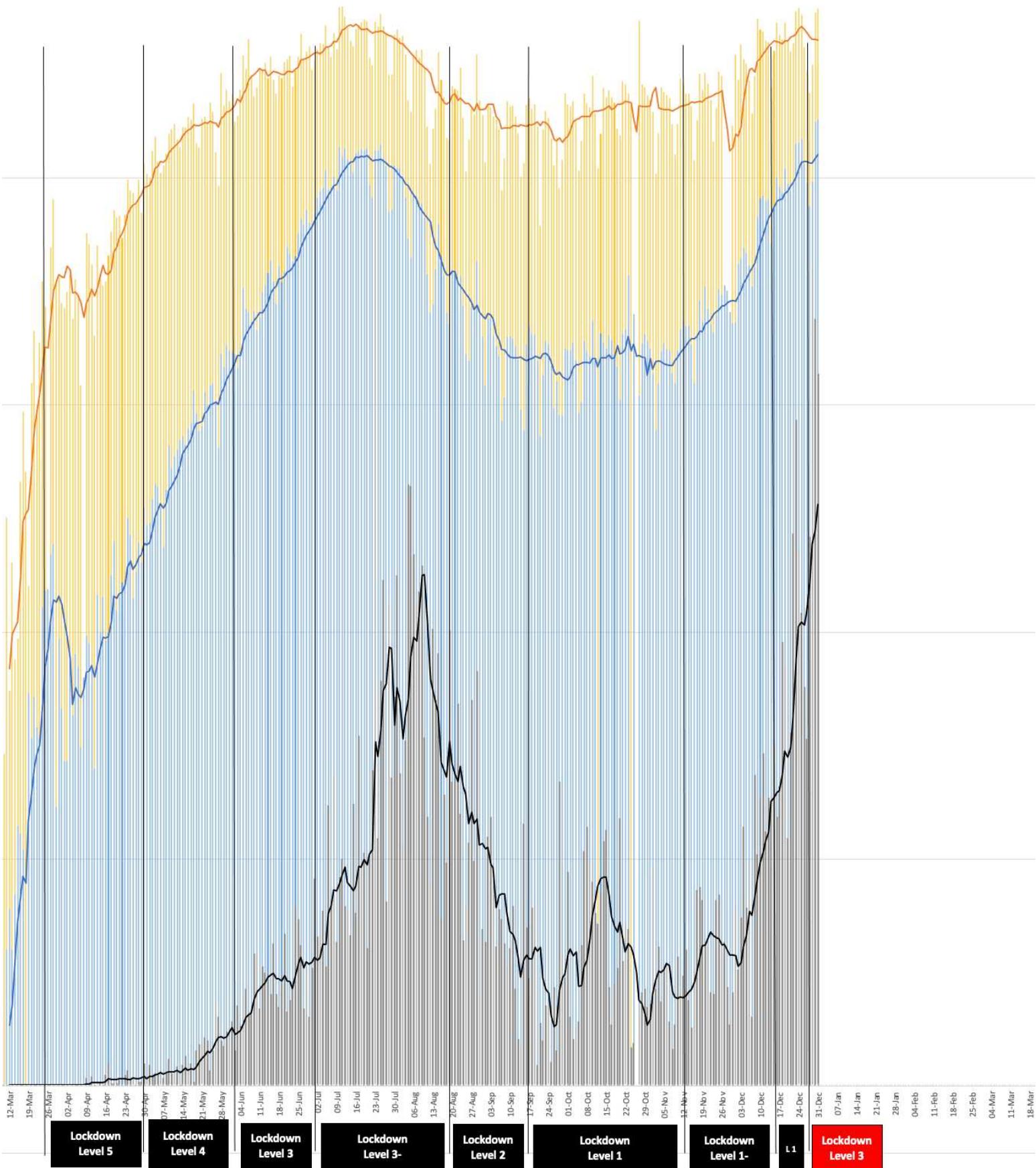
Log Scale

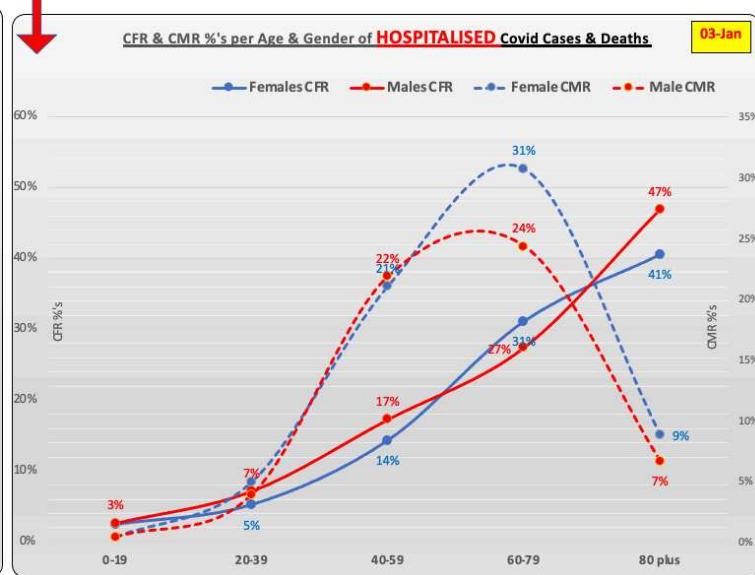
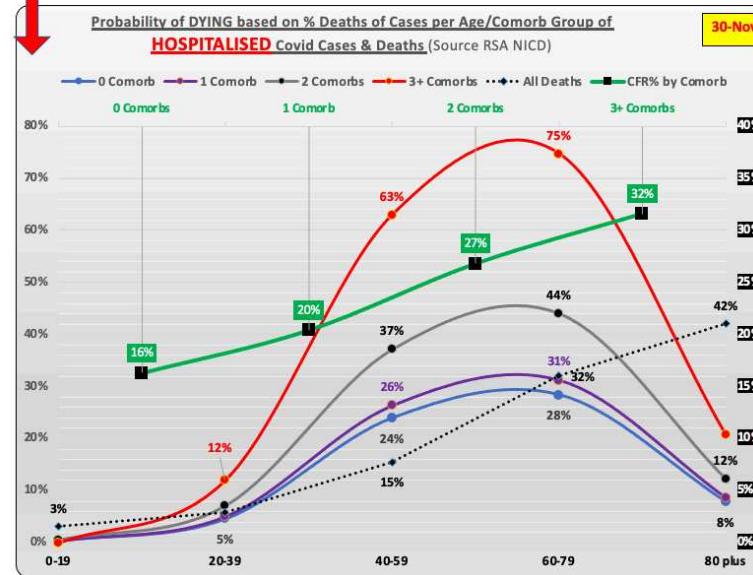
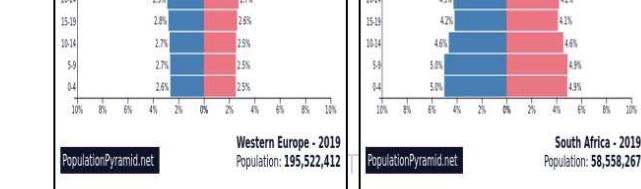
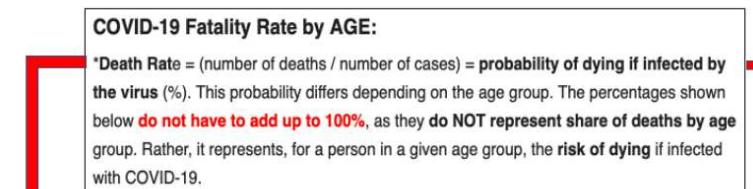
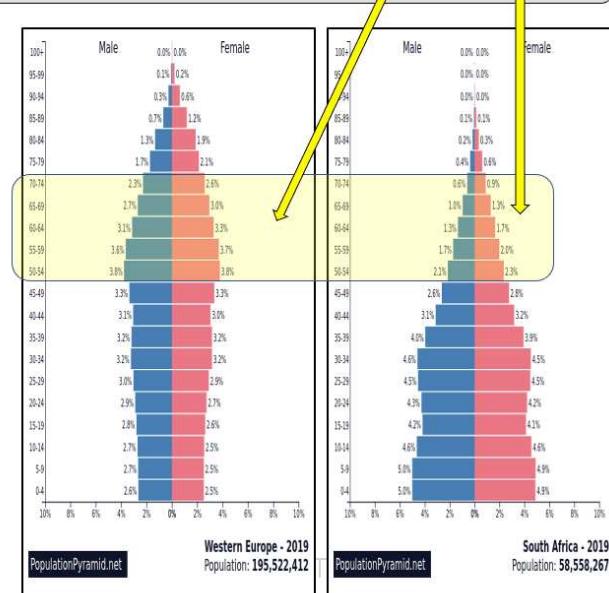
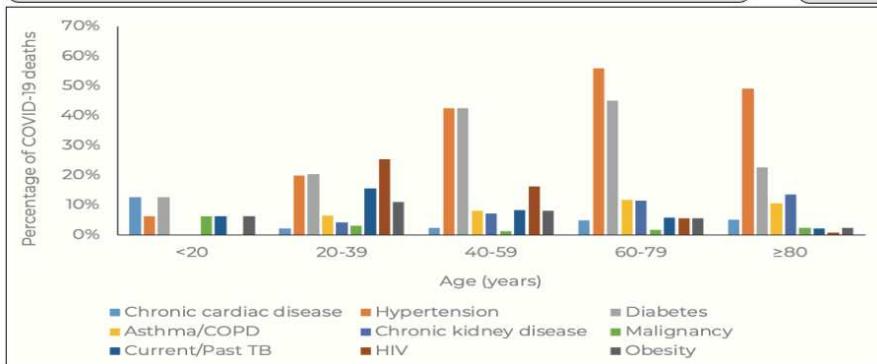
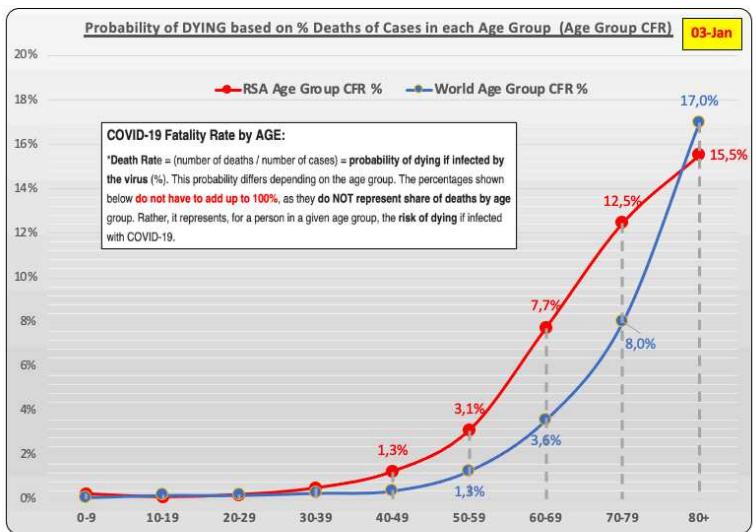
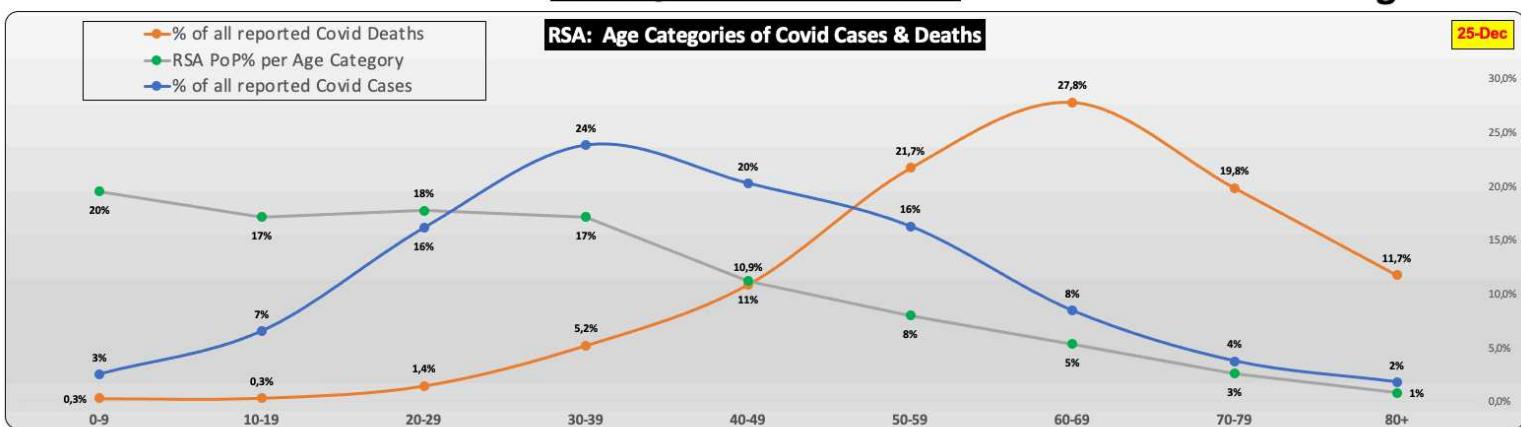


Note: Above Mortality %'s are overall projected mortality of

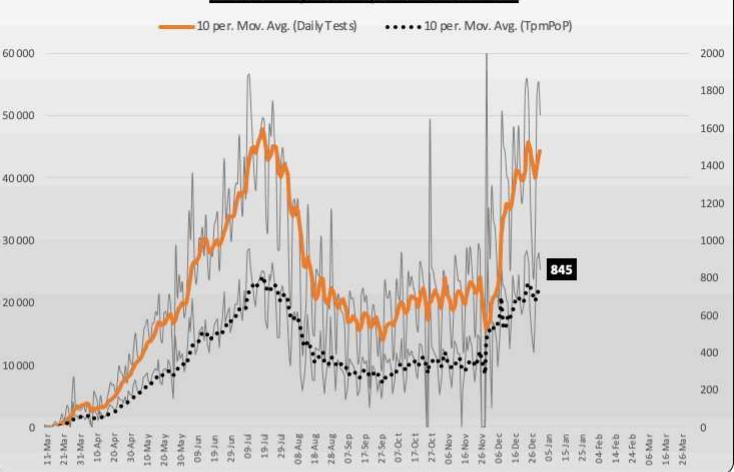
RSA Daily Testing v Daily Cases v Daily Deaths 7 Day MA (Y1-axis log scale, Y2-axis linear)

— 7 per. Mov. Avg. (Daily Tests) — 7 per. Mov. Avg. (Daily Cases) — 7 per. Mov. Avg. (Daily Deaths)

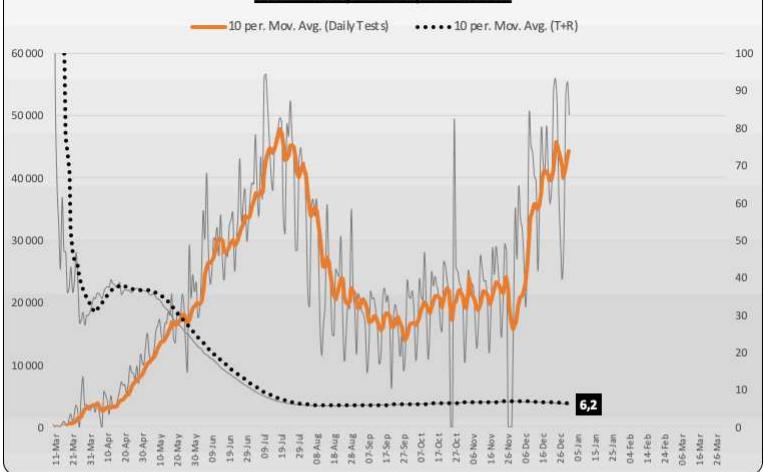




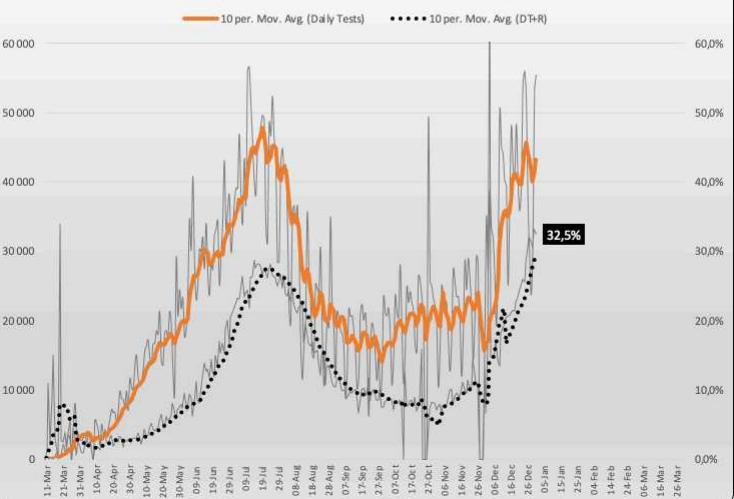
RSA: Daily Tests per million PoP



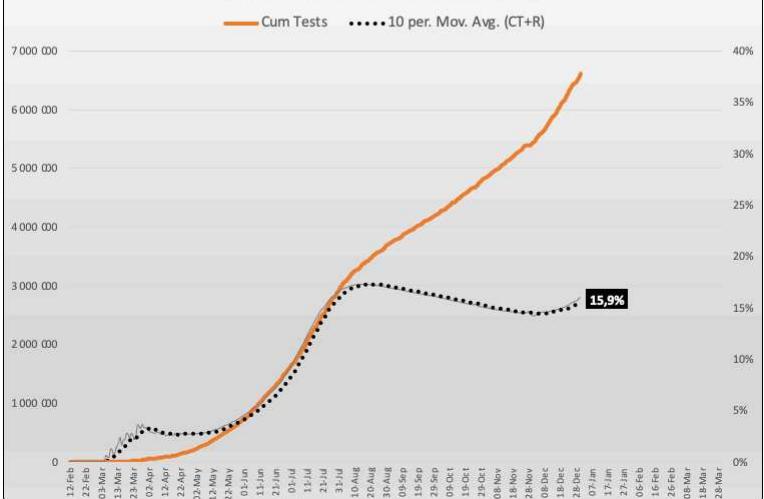
RSA: Daily Tests per +Case



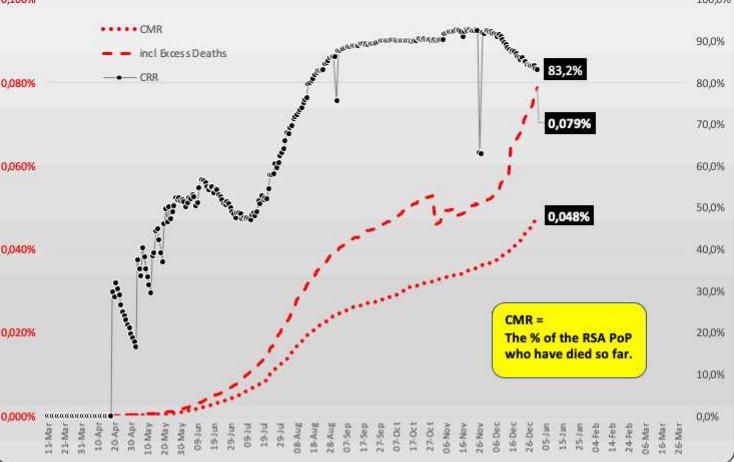
RSA: Daily Tests Positivity %



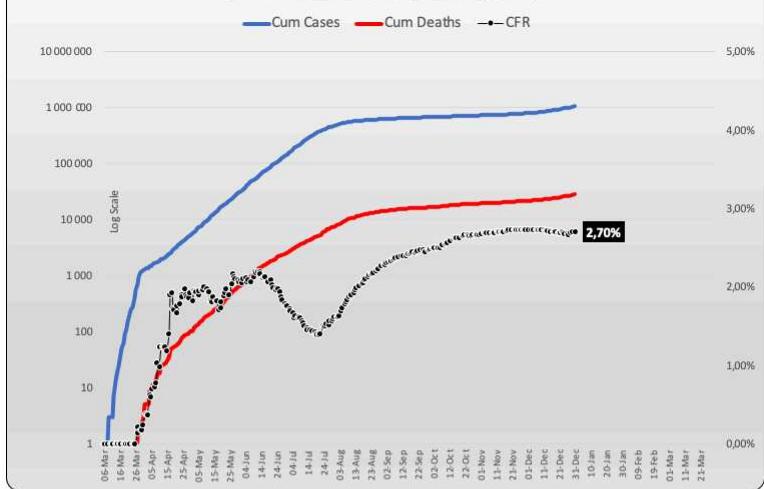
RSA: Cum Tests Positivity Rate



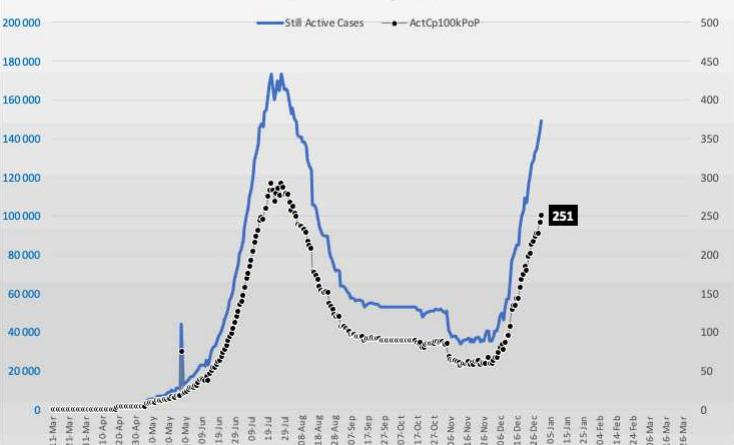
RSA: Case Recovery Rate (CRR) & Case Mortality Rate (CMR) & CMR incl Excess Deaths



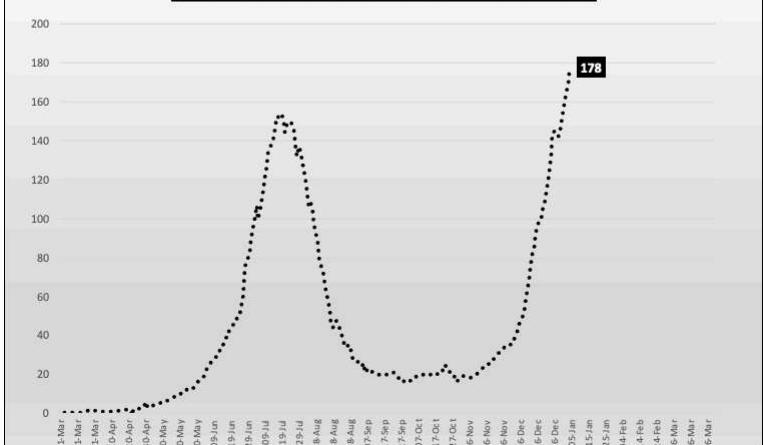
RSA: Deaths as % of Cases (CFR)



RSA: Active Cases per 100k PoP

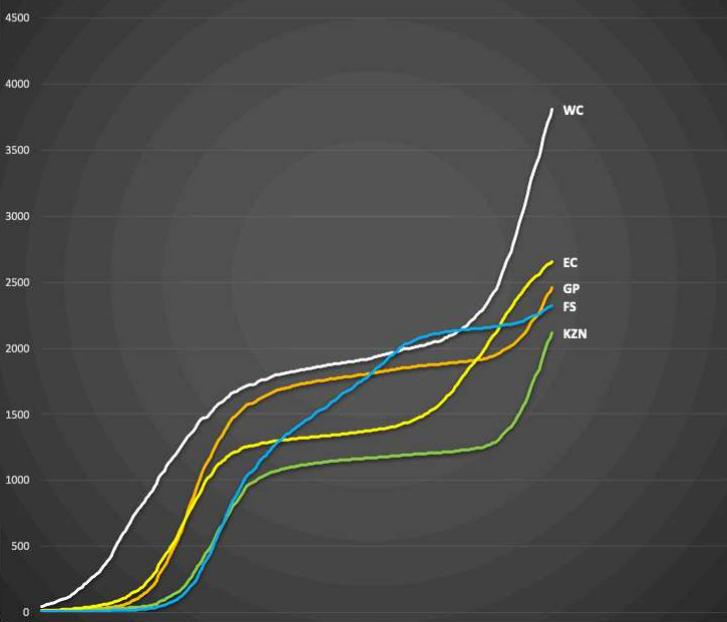


RSA: Avg New Cases per week per 100k PoP

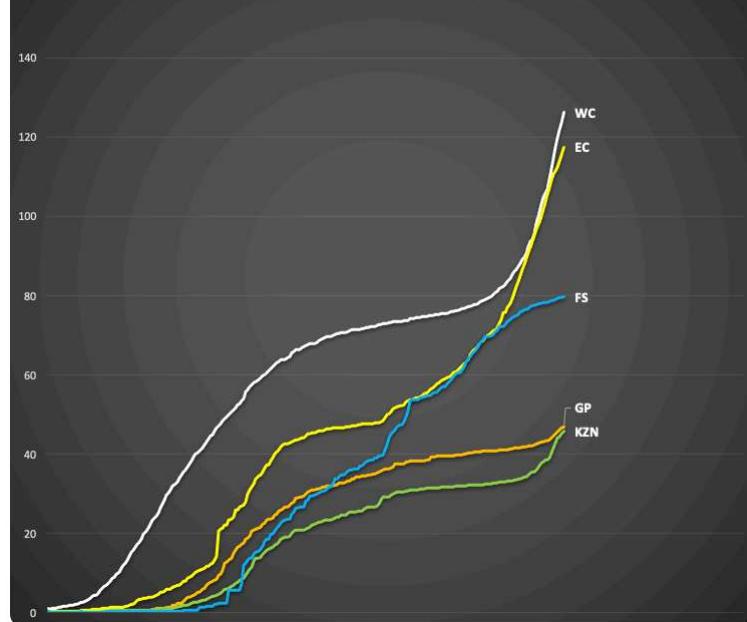


Major Provinces: Cum Cases per 100k PoP

GP — WC — KZN — EC — FS

**Major Provinces: Cum Deaths per 100k PoP**

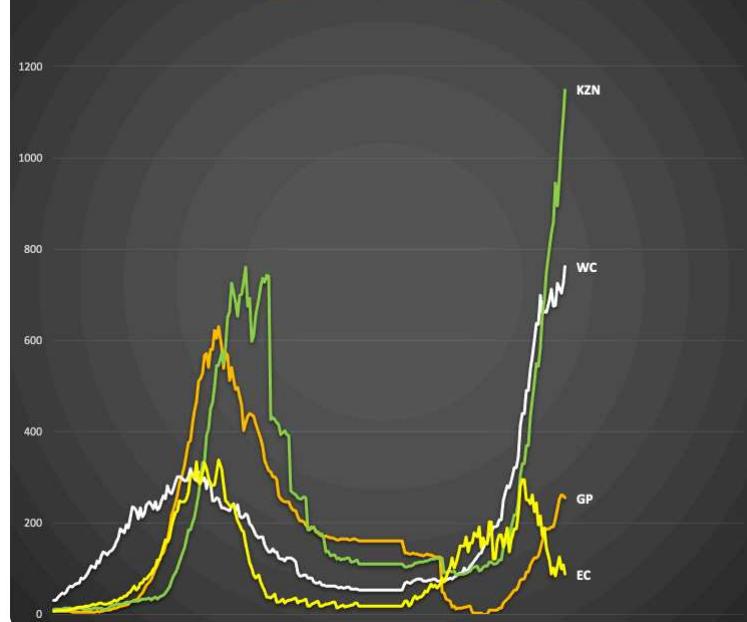
GP — WC — KZN — EC — FS

**Major Provinces: In Hospital per 100k PoP**

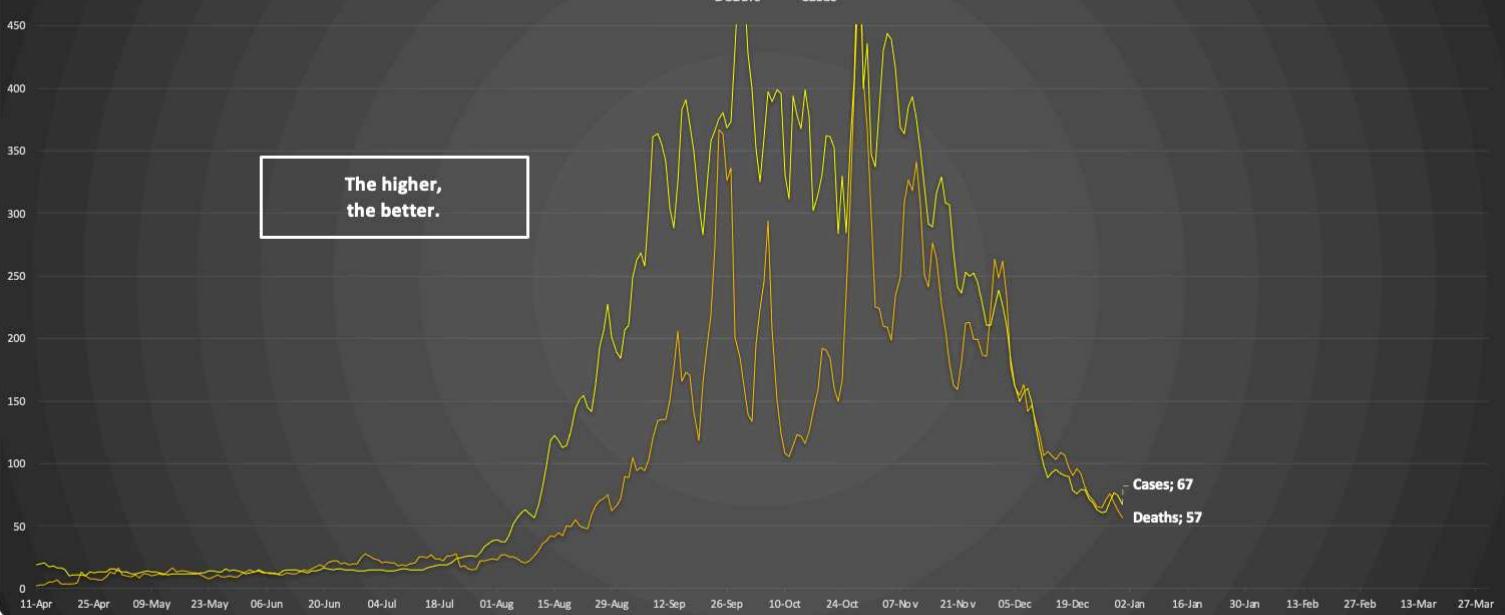
GP — WC — KZN — EC

**Major Provinces: Still Active Cases per 100k PoP**

GP — WC — KZN — EC

**RSA Doubling Times in Days**

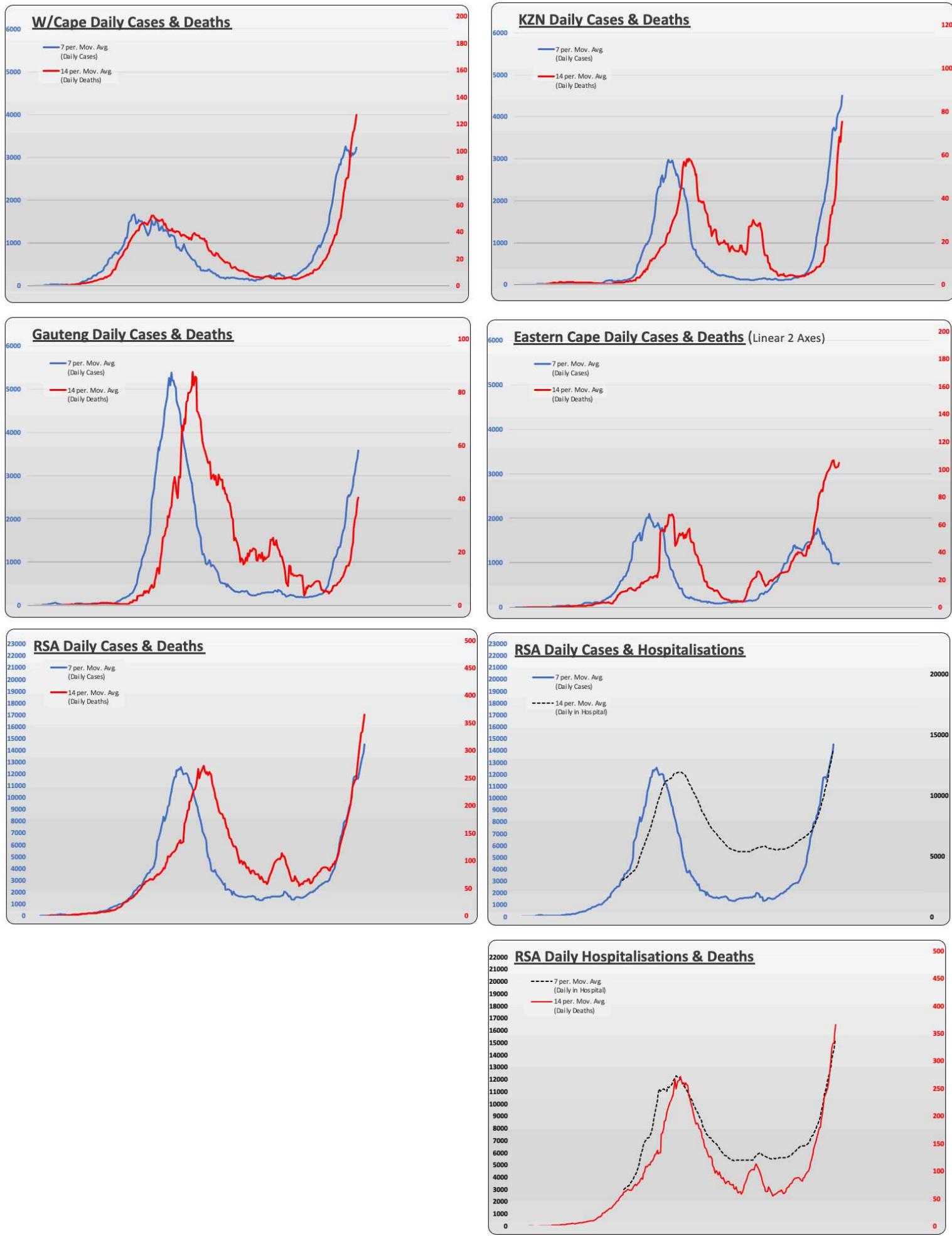
Deaths — Cases



1st Wave v 2nd Wave

The unfolding 2nd Wave curves should therefore give a good indication of the 2nd Wave's rate of infection spread and severity resulting in fatalities.

1480 5.1



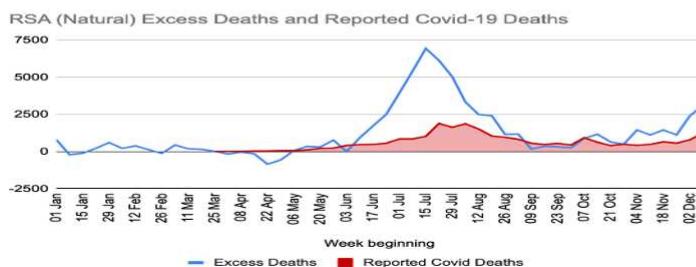
What are these graphs telling us ? (Ignore the numbers, look purely at the inclines and amplitudes).

- 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.

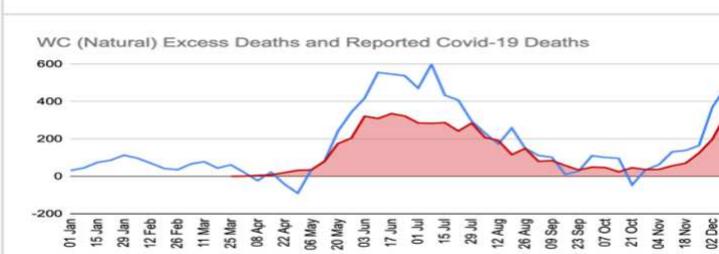
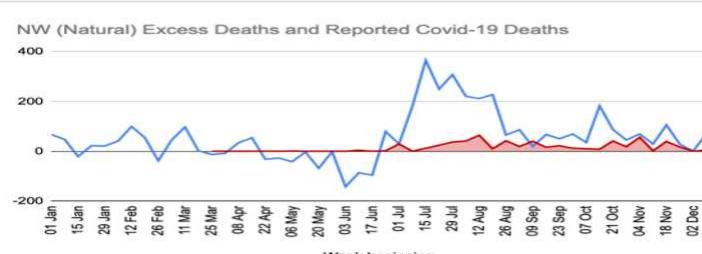
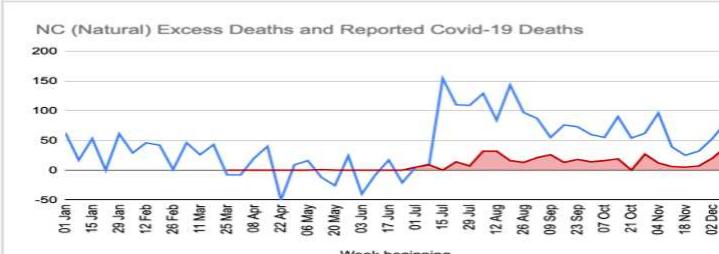
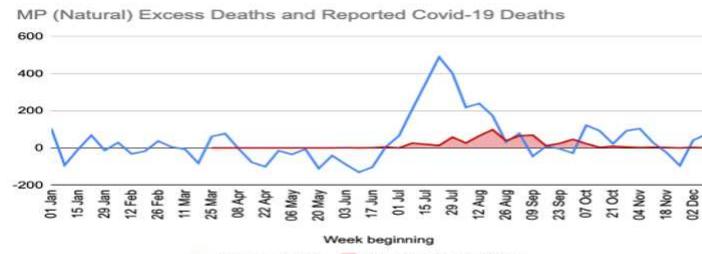
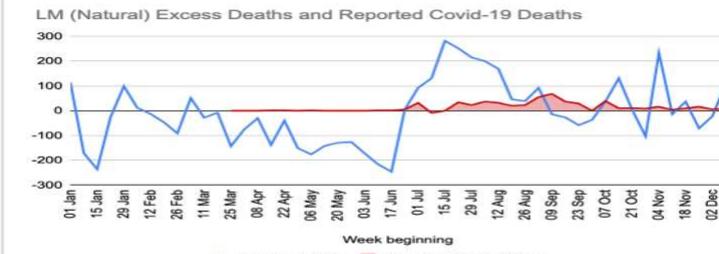
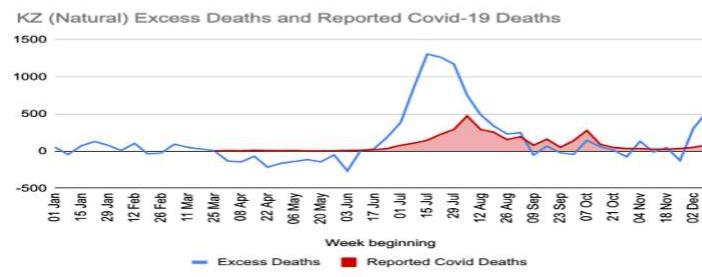
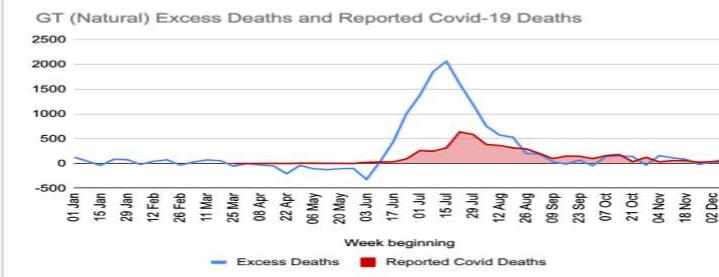
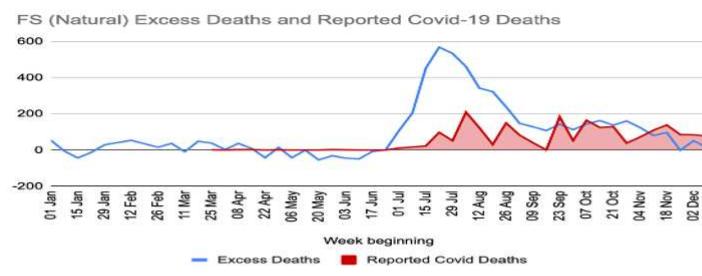
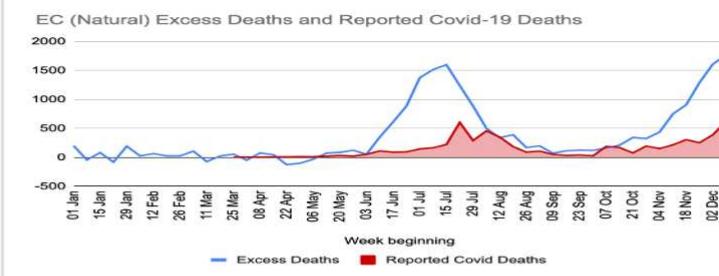
3) The WCape & KZN and even the Gauteng curves are slightly off and could suggest undercounting. Their relative amplitudes does not hold well for Gauteng and the rest of the country.



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



The virus is still winning

This simple chart shows why the new variants of the coronavirus — first detected in Britain and South Africa — are so worrisome:

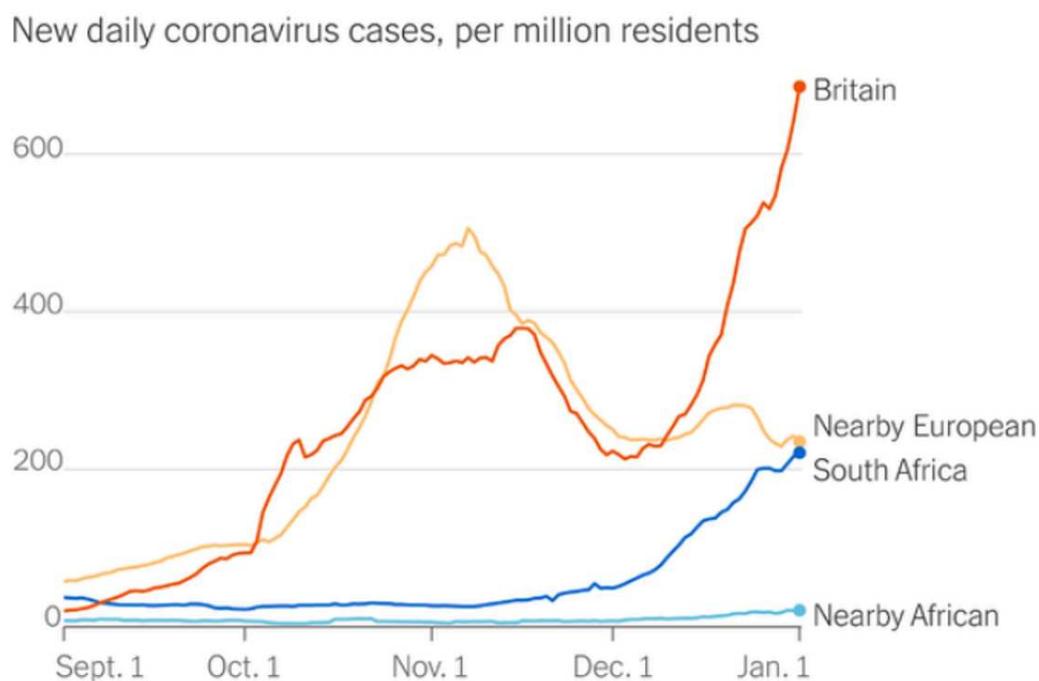


Chart shows rolling 7-day averages. "Nearby European" is Belgium, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and Switzerland. "Nearby African" is Botswana, Eswatini, Lesotho, Namibia, Mozambique and Zimbabwe.

By The New York Times | Sources: Local and national governments and health organizations, World Bank

