Western Cape Government

Health

AD-HOC COMMITTEE ON COVID-19

Situational analysis of COVID-19

Dr K Cloete

16 September 2020

Overview

1. Update on cases, hospitalisations and mortality

2. Surveillance Strategy

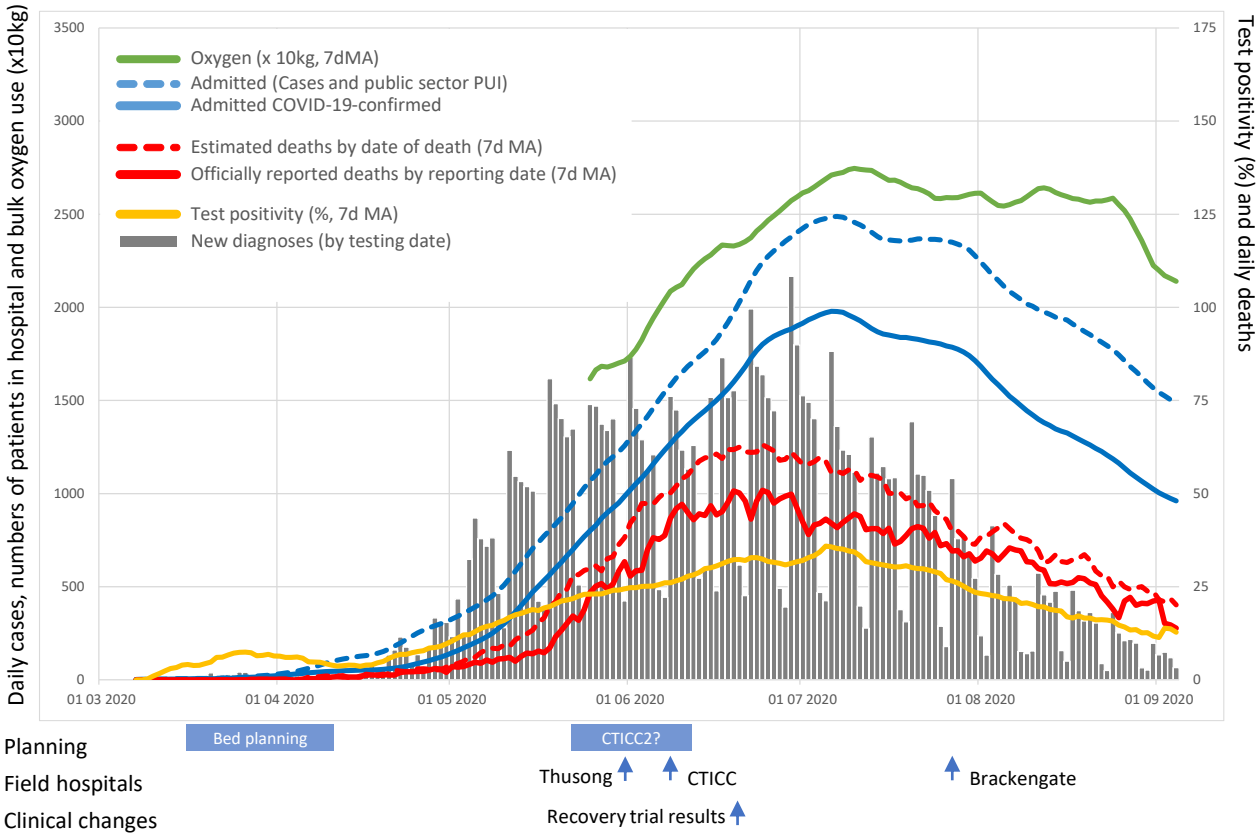
3. Update on the acute service platform response

4. Re-introduction of comprehensive clinical services

5. Conclusions

Update on cases, hospitalisations and mortality

Integrated testing, case, hospitalisation and mortality trends - WC



Revised testing criteria for CT Metro

- Pre-op testing asymptomatic patients
- Natural cause deaths at home
- Public sector "essential workers" with symptoms
- Incarcerated people with symptoms
- Schools: learners & staff with symptoms
- Workplaces: workers with symptoms

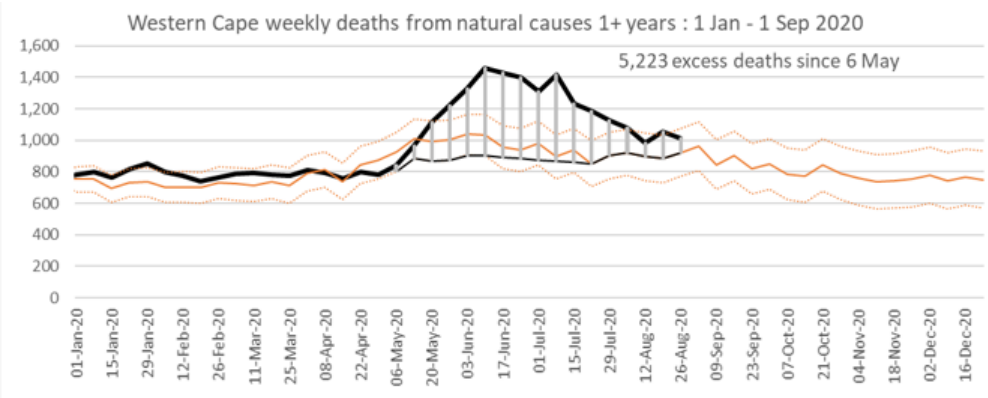
	Current (7dma)	Peak (7dma)	% of peak
Cases	~120*	1363*	10%
Reported deaths	~15	52	29%
Admissions	<700	2000	35%
% positive	<10%	40%	25%

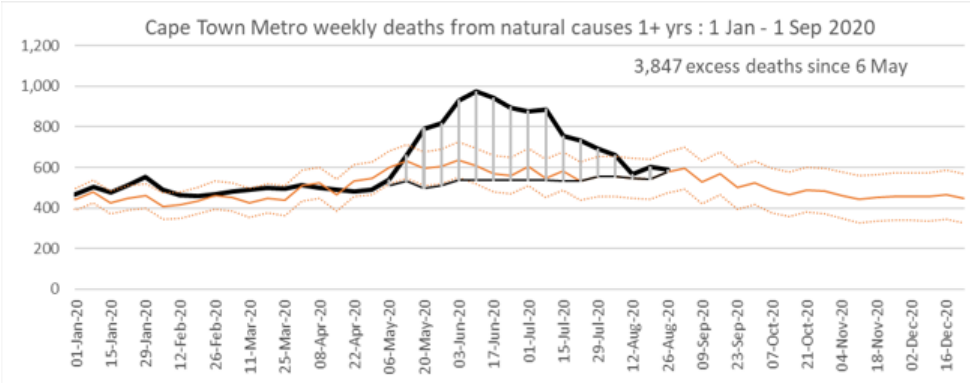
*Restricted testing

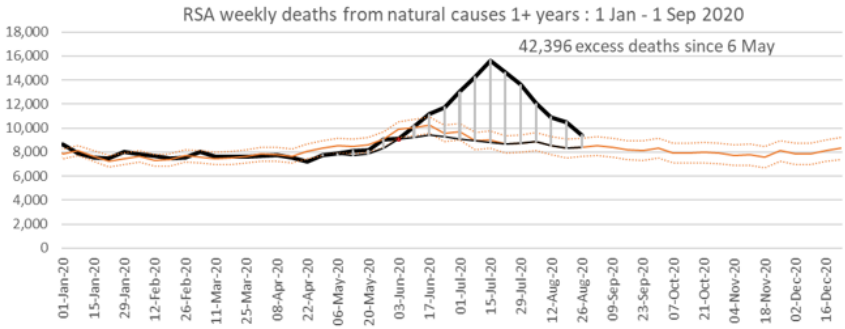
3991	99562	106,362	105	492760
Total Deaths	Total Recovered*		Last 24 Hours*	Tests Done

5153 excess deaths (MRC)

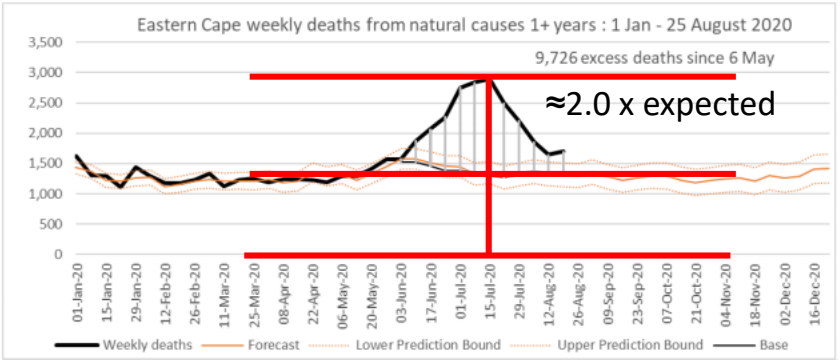
Comparing to vital registration

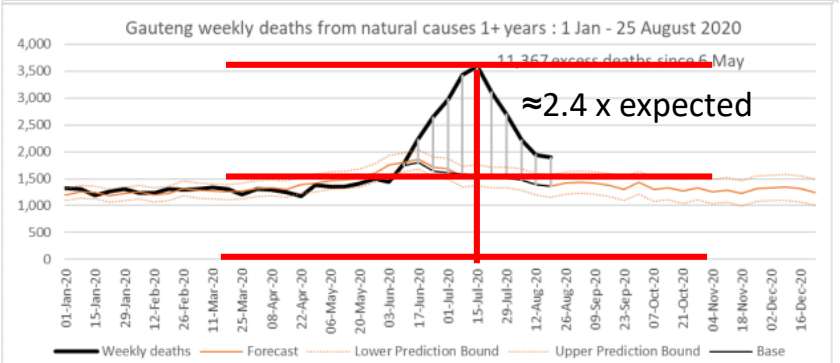


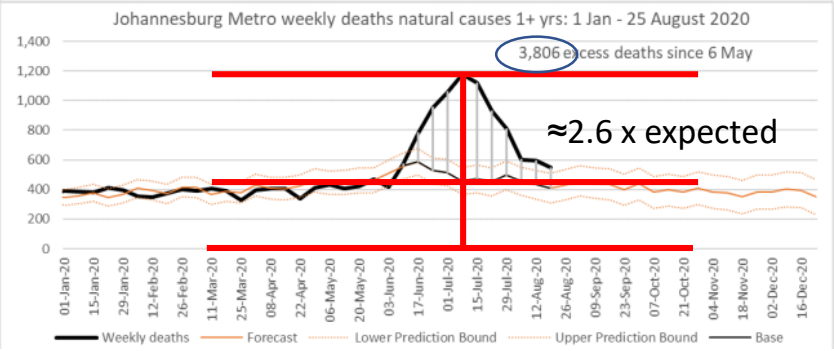


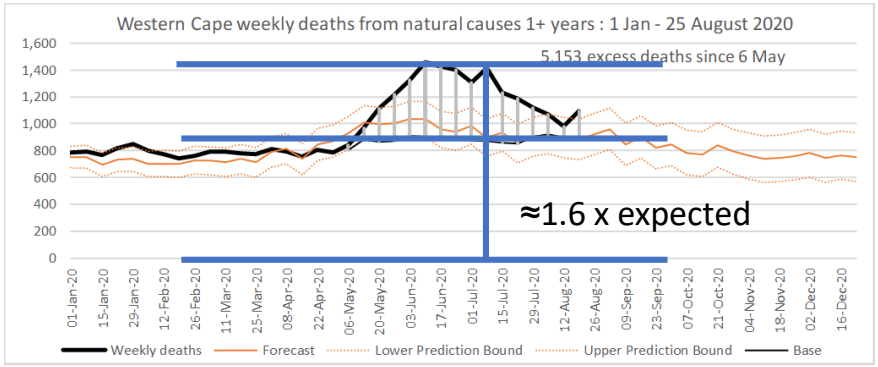


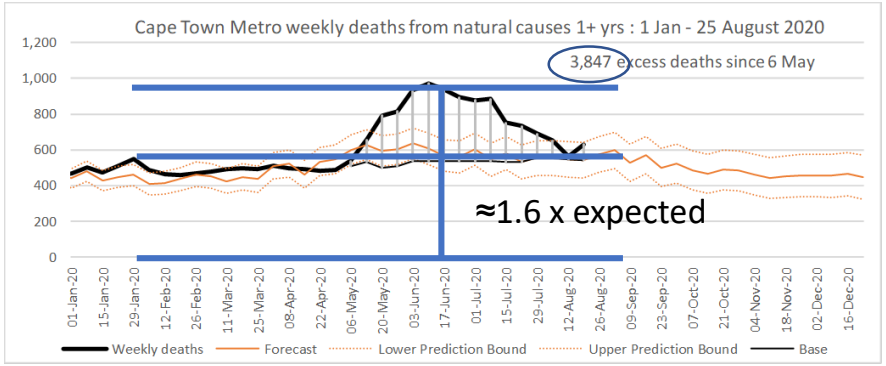
How precipitous was the surge?





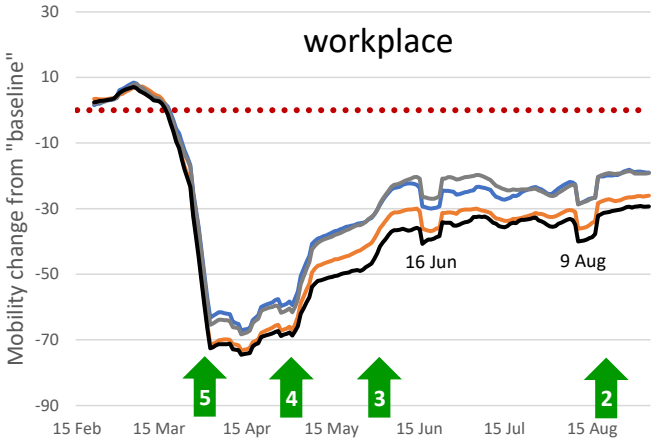


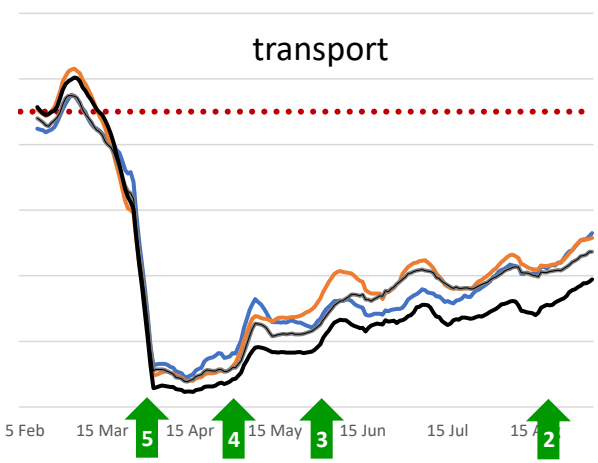


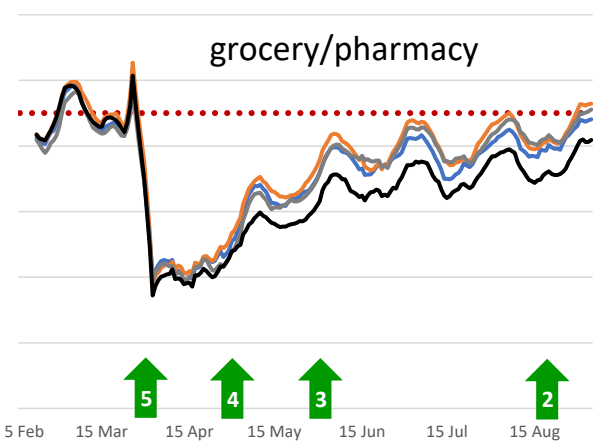


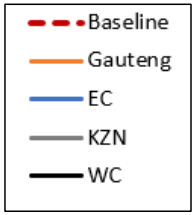
Longer duration over which peak morbidity and mortality was experienced in the CoCT and WC resulted in a lower peak. Similar number of excess deaths in Cape Town and Johannesburg, but much higher peak daily deaths above the 2020 prediction in Johannesburg.

Google mobility data for different activities by province - % difference from baseline

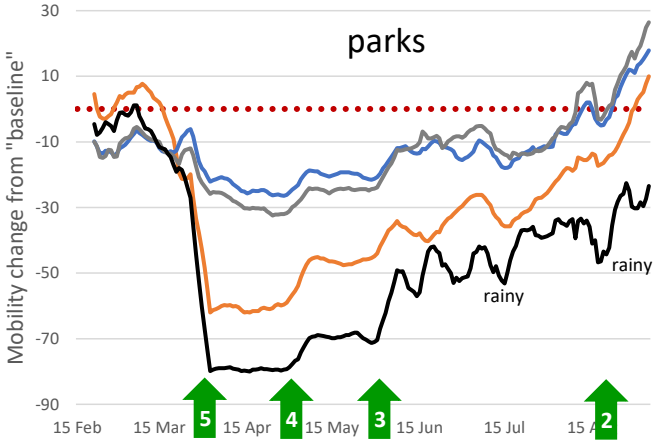


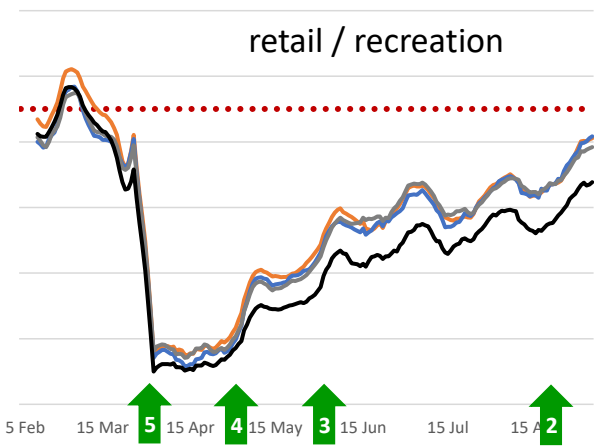






5 Lockdown level



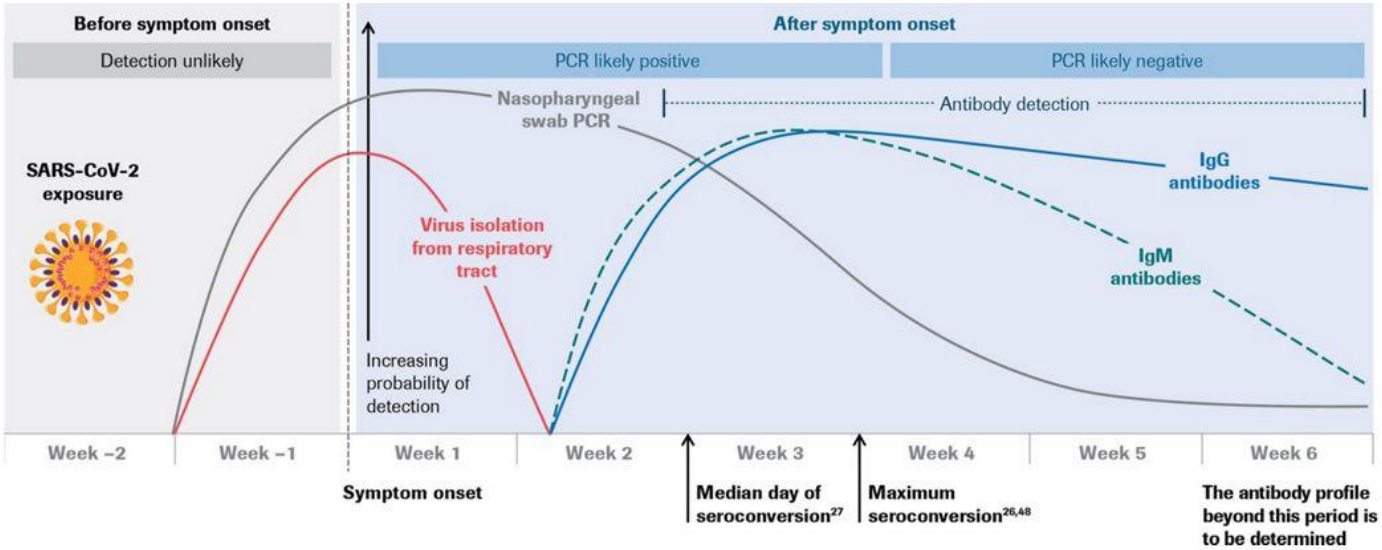


Similar patterns from Vodacom use

Surveillance strategy

Western Cape Government

Sentinel serological surveillance



Sentinel - the study of disease rates in a subgroup to estimate trends in a larger population
- in this case pregnant women and patients with HIV attending services for reasons other than COVID-19
- first iteration from samples in late July and early August, predominantly from Cape Town district

Serology - blood tests that look for antibodies in blood indicating prior infection
- 91% sensitivity and 99.7% specificity, using a commercial high throughput system

Caveats to interpreting the sentinel serology data

- Based on residual (left over) specimens from patients who came to services for reasons unrelated to COVID-19 – antenatal care or HIV routine viral load testing
- Useful for *monitoring trends* or *comparing locations* if always testing in the same patient groups
  - E.g. antenatal testing was the mainstay of HIV prevalence surveillance for many years
- These patients differ however from the general population in many ways, making generalisation more difficult
  - People who use the public sector
  - People using health services where they may have infection exposure
  - Limited to people of particular ages or in case of antenatal care, to women
  - Socio-economic differences (HIV more prevalent in poorer areas) or differences in person-to-person exposure

Estimates from opportunistic COVID-19 serological testing of a sentinel group should be interpreted with caution due to likely differences between those tested and the general population.
This is not the equivalent of the community serological surveys reported for many countries and which will still be done in South Africa.
Still useful however for providing broad insights into the epidemic dynamics.

Preliminary serology findings

- Study only approved last week. These are preliminary findings with detailed results still to follow
- Approximately 2700 tests have been conducted on residual specimens of primary care antenatal and HIV patients coming for routine pregnancy and HIV blood tests in **Cape Town Metro facilities**
- Antibodies to SARS-CoV-2 suggesting previous infection in **40%**, ranging from
  - 30% to 46% across the subdistricts in the Metro
  - 37% (antenatal) to 42% (HIV) by patient group
  - 33% (Men with HIV) to 45% (Women with HIV) by gender
  - 36% to 43% by 10-year age group between the ages of 20 and 60
- The general population seroprevalence likely to be substantially lower than this, but difficult to estimate with any precision at this stage
- Nevertheless the data support the interpretation that, especially in poorer communities, a relatively high proportion have been exposed to and infected with COVID-19
- This seroprevalence is in line with what we would expect based on our number of deaths and the epidemic trajectory (declining in spite of lessening restrictions)

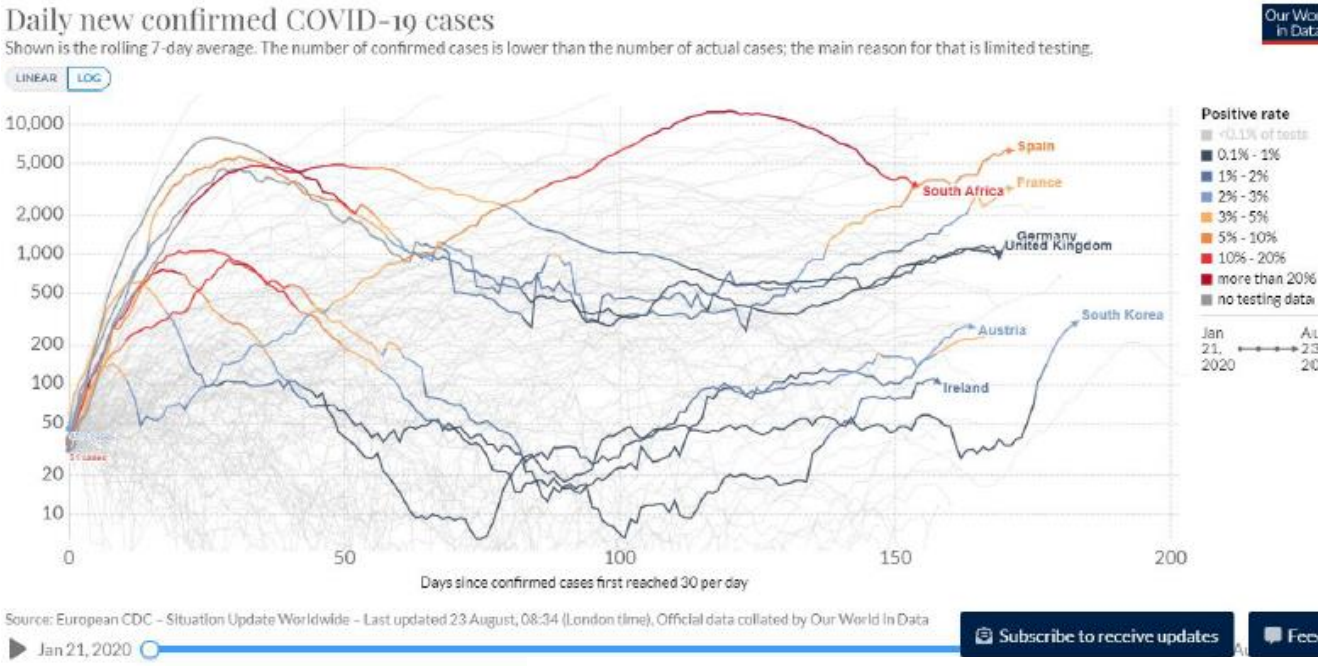
In spite of uncertainty in extrapolating these data to the general population, Cape Town appears to have had a very pervasive COVID-19 epidemic with a higher proportion of the population infected than described in many other countries.

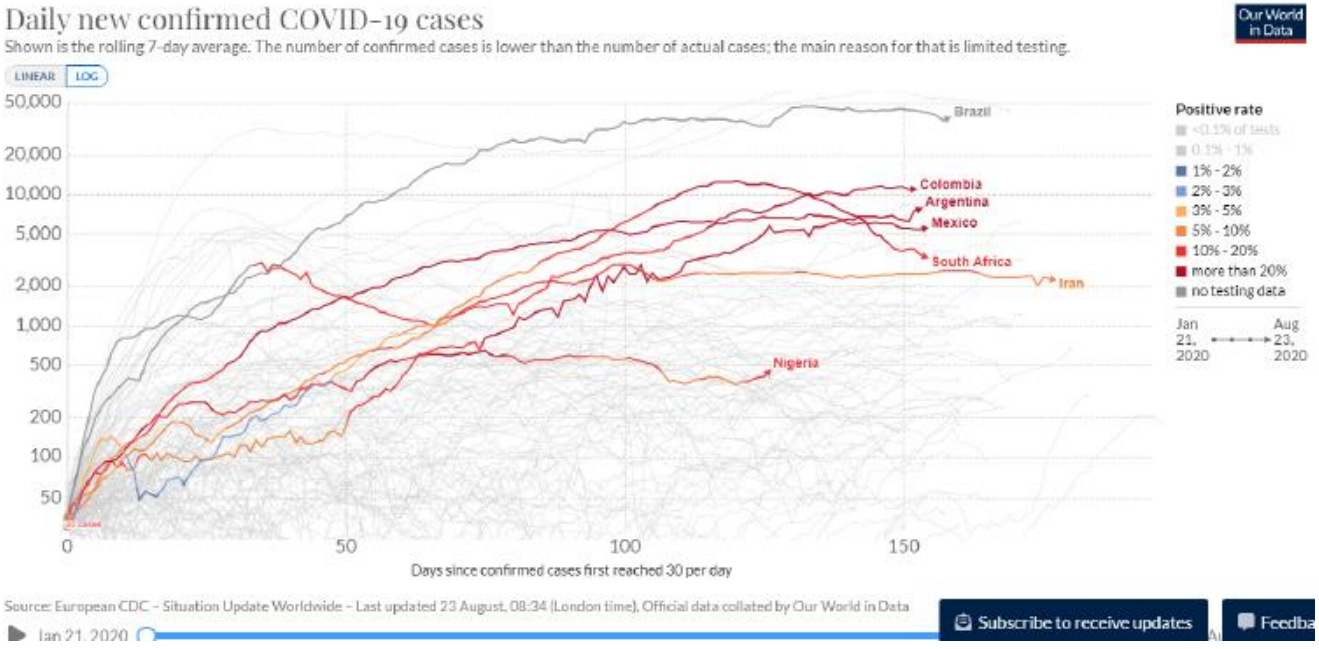
Results courtesy of Dr Marvin Hsiao & colleagues from NHLS

Implications of serological findings – what's to come

- Unlikely in the short term to see explosive outbreaks in high-density vulnerable communities which have already experienced high morbidity and mortality
- Even in areas with high seroprevalence and lowered risk of repeat outbreaks, many **individuals remain susceptible**
- Substantial heterogeneity in seroprevalence is highly probable and there will likely be **communities or population groups where ongoing vigilance is critical** in order to interrupt transmission through outbreak response
- There are not, as yet, reliable tools to predict the likelihood, location or timing of future resurgence – **ongoing surveillance is the key** to the next phase together with learning from countries ahead of us.

2nd waves - different global patterns





South Africa and Western Cape surveillance strategy for next phase

- National task team with involvement of WC epidemiologists
- Uncertainty about likelihood, timing, location and magnitude of resurgence
- Important to monitor global experiences
- Pattern of inequality and spatial geography might result in ongoing risks differing extensively by location and socio-economic status
- Local surveillance and responsiveness to emergent data (case management and strategic responses to epidemiological trends) are critical
- Updated surveillance strategy proposed
  - Case-based surveillance and outbreak response are a key foundation supplemented by population surveillance approaches (serology, molecular, waste-water)

Possible surveillance strategies in the "post-peak" period

Surveillance objective & purpose

Determine proportion previously infected by place and person
to assess first wave severity, & future infection risk

Identify rate, areas & molecular characteristics of new infections
for early ID of resurgence to inform targeted interventions

Identify individual new cases for I & Q of contacts
for containment of outbreaks around a case

Surveillance approach

Seroprevalence:
- HSRC household survey
- NICD household survey
- First set of residual antenatal & HIV VL specimens (sentinel)
- Blood donors

Track data on new cases; proportion positive

Repeated seroprevalence
- HSRC follow-up cohort
- Ongoing testing of residual antenatal & HIV VL specimens

Molecular testing

Wastewater testing for SARS-CoV-2 RNA

Identifying people with COVID-19 symptoms
(community awareness or daily screening in high risk/closed settings)

SARS-CoV-2 PCR testing of those with COVID-19 symptoms

SARS-CoV-2 PCR testing of asymptomatic contacts
(can be considered for high risk/ closed settings)

WHO?

All approaches can be applied to whole population or to specific settings
e.g. Health Care Workers / Long-term Care Facilities / Correctional Services Facilities / Schools

Proposed revised public sector SARS-CoV-2 PCR testing criteria

Principle: must be a clear individual-level or group benefit for each criterion

1 June 2020

Criteria for COVID-19 testing in the Cape Metro

Criteria since 1 June 2020

- Admitted with COVID-19 symptoms
- HCWs with COVID-19 symptoms
- Patients with COVID-19 symptoms in rural areas (low prevalence discrete areas where still possible to contain)
- Patients age >55 or with comorbidities & COVID-19 symptoms
- HCWs in quarantine as contacts needing early return to work

Established a multidisciplinary Testing Advisory Group

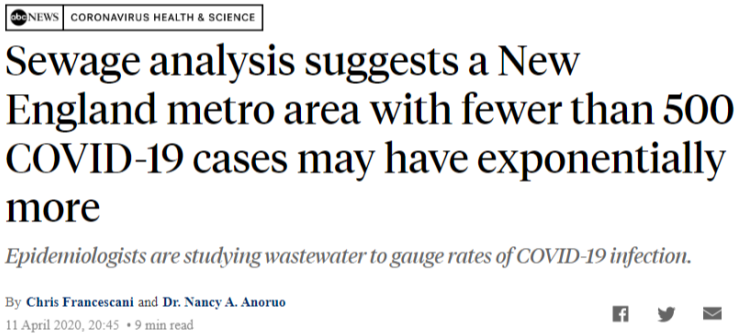
Principles for expanding testing criteria:

- Clear rationale with individual and/or group benefit
- Estimate additional number of tests needed and assess:
  - adequacy of laboratory testing capacity
  - effect on numbers and logistics of swabbing
  - effect on lab turn-around time
- Staggered approach and assess effect of implementing some criteria before expanding more

Preliminary proposals for revised criteria

- Pre-op testing asymptomatic patients
  - ↑ morbidity/mortality if surgery during acute C-19
  - ↓ theatre time for C-19 negative patients
  - ↓ admission of C-19 positive patients for elective surgery
- Natural cause-deaths at home
  - Track COVID-19 deaths and mortality rate
- Public sector "essential workers" with C-19 symptoms e.g. SAPS, correctional services, ambulance
  - ↓ prolonged sick leave
- Incarcerated people with C-19 symptoms
  - Identify & contain potential outbreaks in high risk transmission settings
- Schools: learners & staff with C-19 symptoms
  - Identify & contain potential outbreaks in confined settings;
  - Track infections in schools
- Workplaces: workers with C-19 symptoms
  - ↓ prolonged sick leave
  - Identify & contain potential outbreaks in confined settings
  - Track infections in workplaces
- ?All symptomatic patients presenting to health facilities
  - Improve containment & epidemic tracking

WBE: SARS CoV-2 Surveillar


abc NEWS | CORONAVIRUS HEALTH & SCIENCE

Sewage analysis suggests a New England metro area with fewer than 500 COVID-19 cases may have exponentially more

Epidemiologists are studying wastewater to gauge rates of COVID-19 infection.

By Chris Francescani and Dr. Nancy A. Anoruo
11 April 2020, 20:45 • 9 min read

WBE used in surveillance of a number of infectious diseases

Ongoing progress in isolating SARS-CoV-2 from wastewater

<u>SACCESS network:</u> South African Collaborative Covid-19 Environmental Surveillance System

Technical/Lab Stream → Epidemiology Stream → Municipal Stakeholders → Data Stream

Acute service platform response

Western Cape Government

Acute service platform – general comments

1. The COVID pressure has eased off considerably in the Cape Metro and also more recently in the Rural Districts.

2. Cape Metro acute hospitals are beginning to decrease their COVID bed capacity and are beginning to re-introduce normal comprehensive clinical (non-COVID) services.

3. Thusong and CTICC Hospital of Hope have been closed; Brackengate (renamed Hospital of Hope) currently has 29 patients and Sonstraal has 4 patients.

4. Nurses and doctors from the Metropole are assisting the colleagues in the rural districts with their COVID response.

5. The Diabetic project continue to achieve good results: for cases assigned to the VECTOR team who present early, the mortality is very low (4.5 %), compared to 28% mortality pre-intervention.

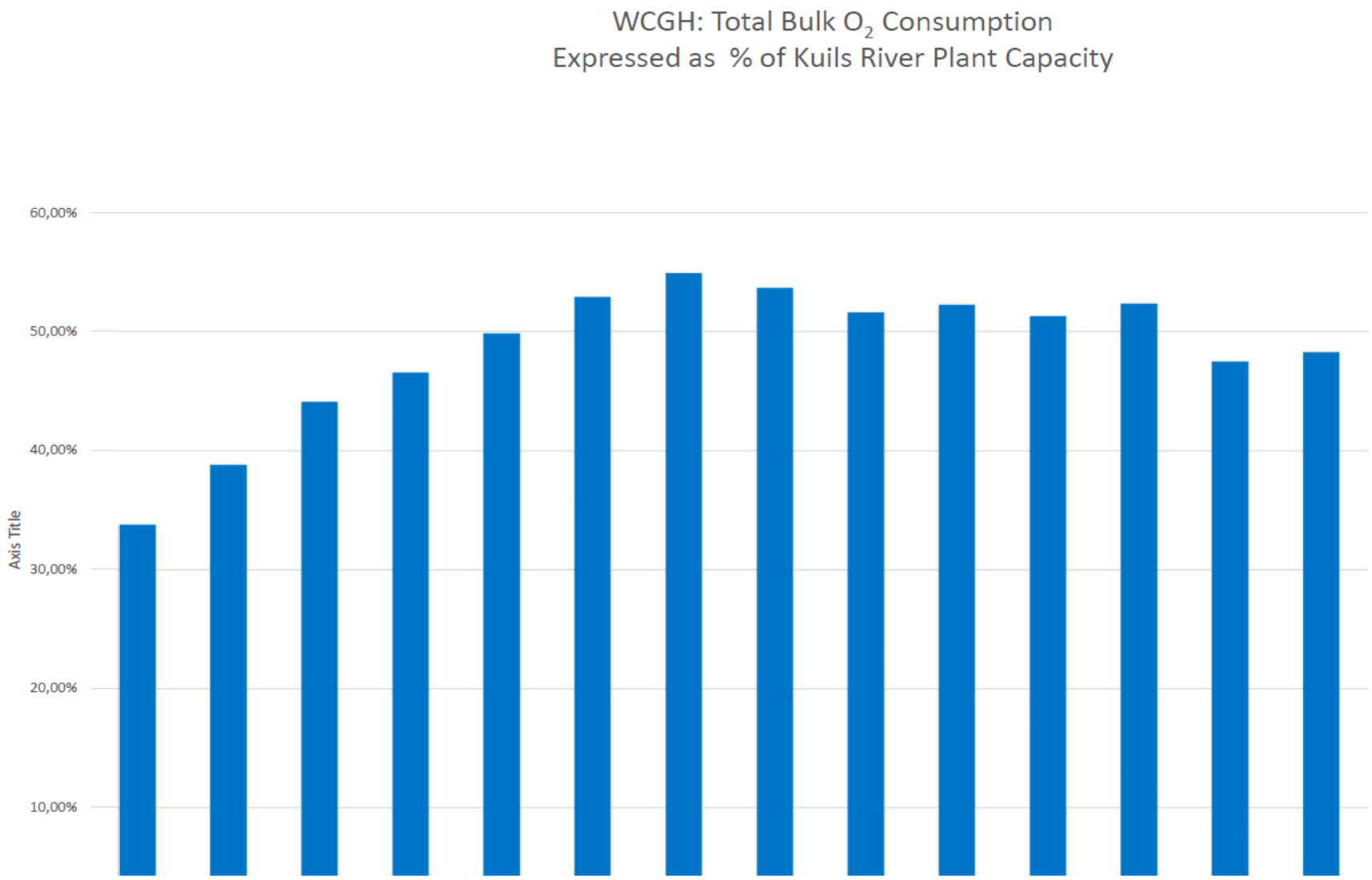
Metro Acute Hospital utilisation rates

WCG Health: Metropole Acute Care Availability and Utilisation (Covid and Non-Covid) at 9/9/2020 15:35:03

	Operational Beds	Filled Beds	Available Beds	BUR %
TBH - Tygerberg Hospital	1,233	957	276	78%
GSH - Groote Schuur Hospital	825	575	250	70%
RXH - Red Cross War Memorial Children's Hospital	191	154	37	81%
NSH - New Somerset Hospital	328	249	79	76%
ERH - Eerste River Hospital	185	119	66	64%
FBH - False Bay Hospital	76	42	34	55%
HHH - Helderberg Hospital	196	156	40	80%
KHA - Khayelitsha Hospital	341	287	54	84%
KBH - Karl Bremer Hospital	360	292	68	81%
MPH - Mitchells Plain Hospital	426	332	94	78%
VHW - Victoria Hospital	178	156	22	88%
WFH - Wesfleur Hospital	50	25	25	50%
Totals	4,389	3,344	1,045	76%

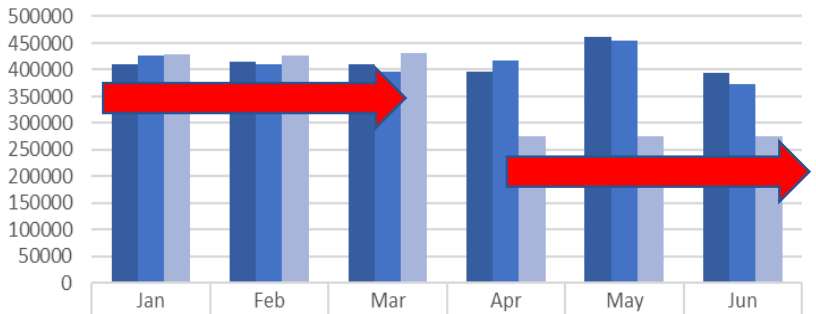
Operational Beds = Beds that are Equipped and Staffed
Bed Utilisation Rate = % Operational Beds Occupied

Provincial oxygen consumption at 46.78 % of total capacity



Re-introduction of comprehensive clinical services

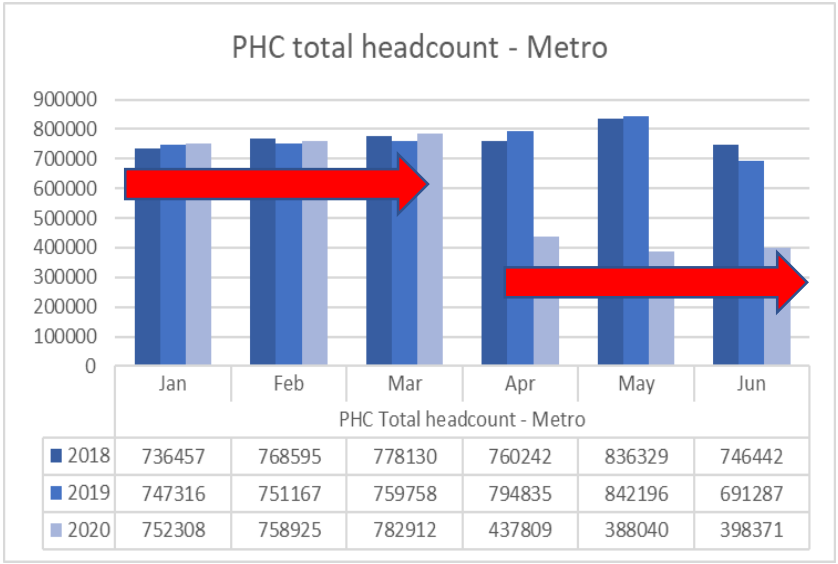
PHC facility attendance



	Jan	Feb	Mar	Apr	May	Jun
	PHC Total headcount - Rural					
2018	411333	415406	409975	395904	460929	394773
2019	426629	411127	397430	417912	455180	373747
2020	428707	427740	430386	275324	275102	274381

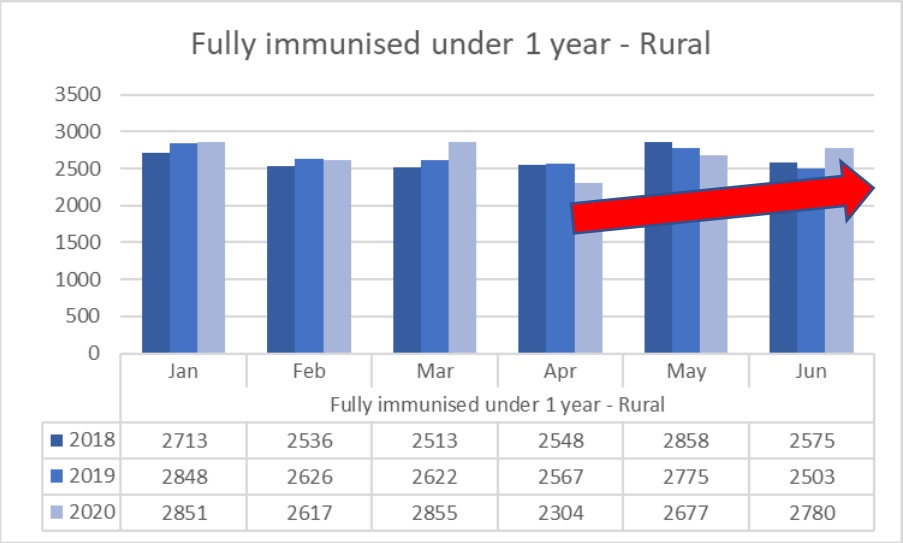
PHC headcounts dropped by 26.6 % in rural when comparing June 2020 vs June 2019

PHC headcounts dropped by 42.4 % in the metro when comparing June 2020 vs June 2019



	Jan	Feb	Mar	Apr	May	Jun
	PHC Total headcount - Metro					
2018	736457	768595	778130	760242	836329	746442
2019	747316	751167	759758	794835	842196	691287
2020	752308	758925	782912	437809	388040	398371

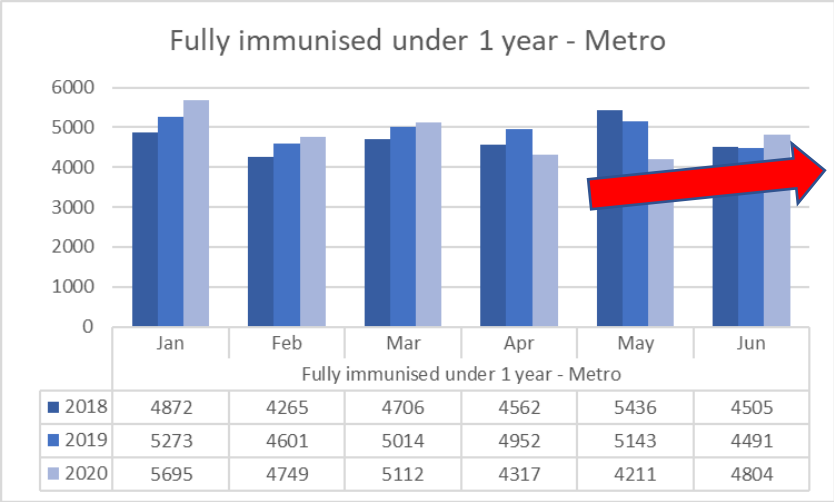
Immunizations



	Jan	Feb	Mar	Apr	May	Jun
2018	2713	2536	2513	2548	2858	2575
2019	2848	2626	2622	2567	2775	2503
2020	2851	2617	2855	2304	2677	2780

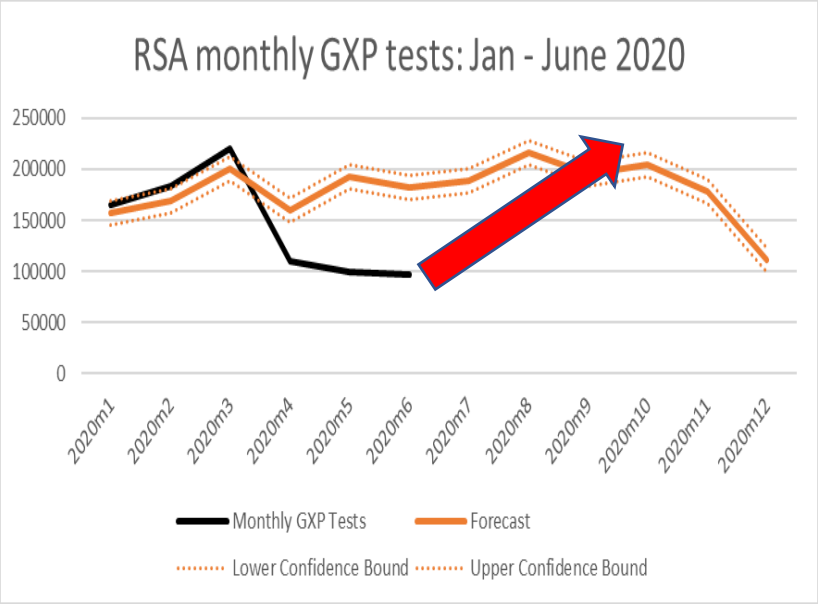
Immunisations dropped by 10,2% in Rural when comparing April 2020 vs April 2019, but increased in May and June 2020

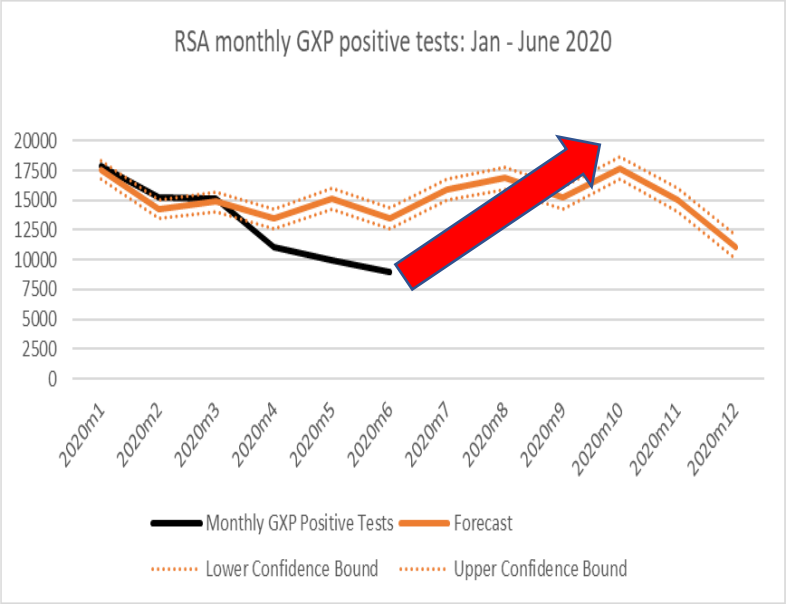
Immunisations dropped by 12.8 % in the Metro when comparing April 2020 vs April 2019, but increased by June 2020



	Jan	Feb	Mar	Apr	May	Jun
2018	4872	4265	4706	4562	5436	4505
2019	5273	4601	5014	4952	5143	4491
2020	5695	4749	5112	4317	4211	4804

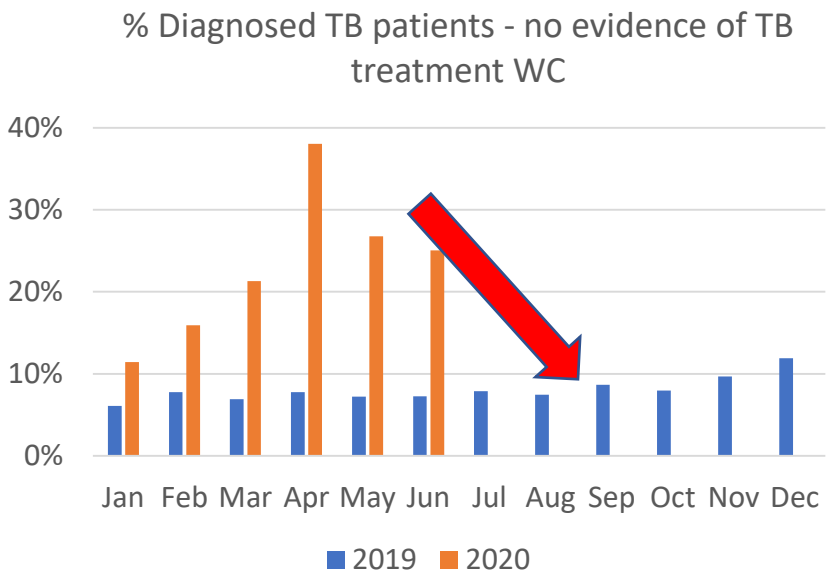
Impact of Covid & lockdown on TB testing, CF & linkage

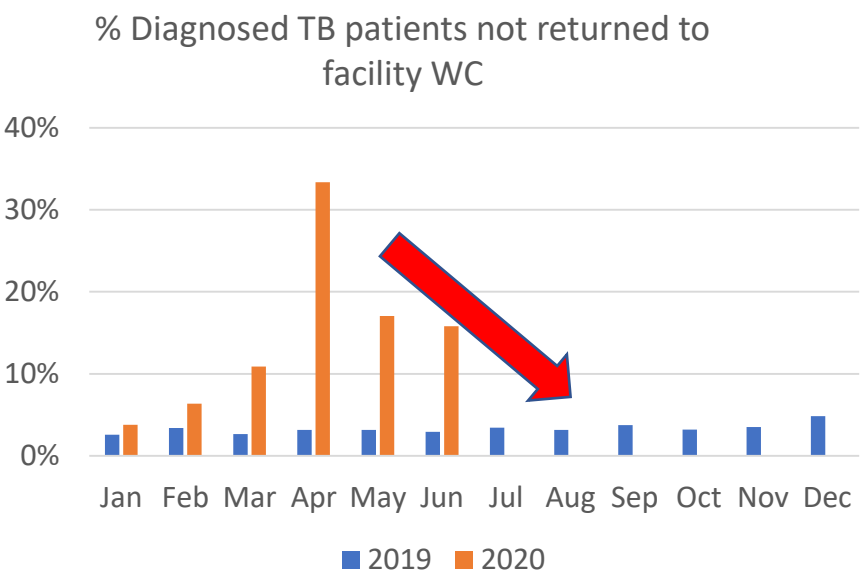




- 47% decline in TB testing and 33% decline in number diagnosed in June 2020 (compared to historic medians)
- Plan to increase GXP testing over the next 6 months, to increase number of TB cases detected (in partnership with NHLS and other partners)

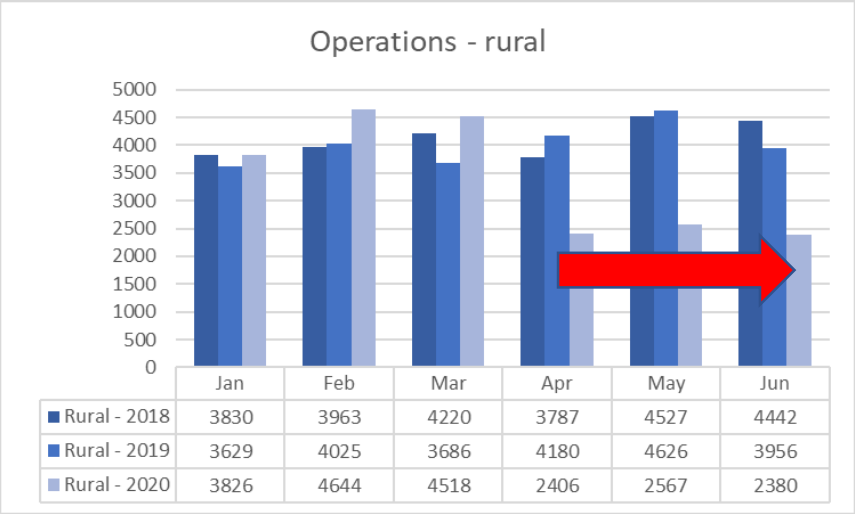
Linkage to TB treatment WC





- Reports of “No evidence of TB treatment” could reflect delays in completion of TB register in areas where daily digitisation not taking place
- As of 03 August, about 15% of TB patients diagnosed in June had not returned to health facilities and another 10% have returned and have either not started treatment or have not yet been registered on treatment

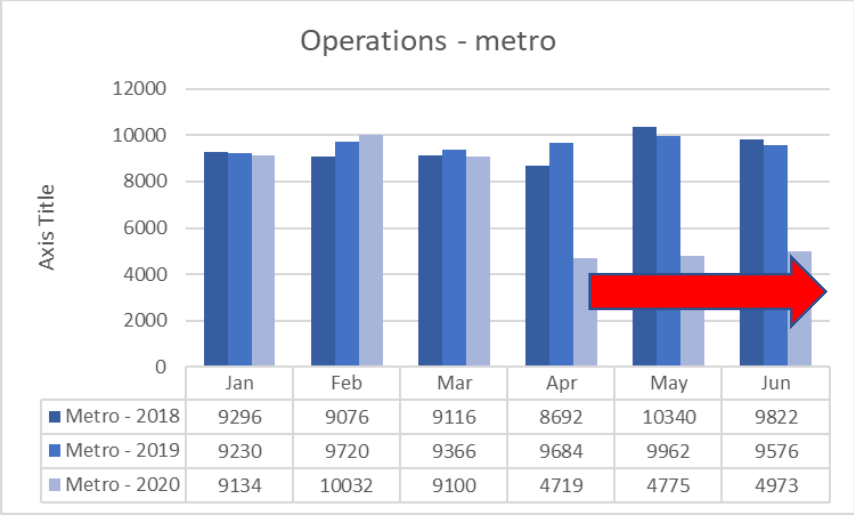
Hospital Operations



	Jan	Feb	Mar	Apr	May	Jun
Rural - 2018	3830	3963	4220	3787	4527	4442
Rural - 2019	3629	4025	3686	4180	4626	3956
Rural - 2020	3826	4644	4518	2406	2567	2380

Operations in Rural dropped by 39.8 % when comparing June 2020 vs June 2019

Operations in Metro dropped by 48 % when comparing June 2020 vs June 2019



	Jan	Feb	Mar	Apr	May	Jun
Metro - 2018	9296	9076	9116	8692	10340	9822
Metro - 2019	9230	9720	9366	9684	9962	9576
Metro - 2020	9134	10032	9100	4719	4775	4973

Key tenets of the re-introduction of comprehensive services

1. The community-oriented primary care (COPC) approach and the gains made in various geographic areas will be leveraged.
2. Each service sector will implement service plans based on the life-course approach (in line with the "restoring well-being" priority).
3. The re-introduction of comprehensive services across the platform will enhance the implementation of Universal Health Coverage (UHC) in the province.
4. The gains made during the 'Whole of Government' (hotspot strategy) as well as 'Whole of Society Approach', will be leveraged to introduce healthy lifestyle and prevention approaches across all sectors.

Principles guiding the re-introduction of comprehensive clinical services

1. The following principles will guide the re-introduction of the clinical services:

   a) Evidence-based, data driven approach

   b) Activities that represent a low (COVID) risk yet have a significant impact on population outcomes will be prioritised, e.g. immunisations, increasing TB testing, etc.

   c) Clinical services will be phased in: short – medium – long term

   d) Utilise the positive opportunities of Covid-19 platform innovation and build on good practices that had been developed e.g. there is a clear role for the call centre/ telemedicine (Diabetic project) for ongoing patient care post COVID-19

   e) Optimise use of technology in order to support service delivery e.g. delivery of chronic home medication

   f) Re-introduction of academic activities have begun in a staggered manner

   g) Build and maintain relationships to provide a seamless continuity of care across the health care continuum (public and private)

Conclusions

Western Cape Government

Concluding remarks

1. The case, mortality & hospitalisation data continue to stabilise.
2. The health platform has coped with the cases requiring admission, during this initial surge.
3. We remain in a position to contract with the private sector if required.
4. We started scaling up comprehensive heath services in a balanced manner, building on the innovations from the last 5 months.
5. It is essential to ensure a strong focus on surveillance and containment for the next 18-24 months.
6. We are finalising a formal review process to develop a coherent plan for the next 18-24 months, based on our collective learnings.

Thank you

Western Cape Government

Health