



**TO: TEXCO MEMBERS, DISTRICT AND FACILITY MANAGERS
PARTNER ORGANISATIONS**

Dear Colleagues

CIRCULAR H204 / 2021: WCGH: COVID-19 FOURTH WAVE RESURGENCE PLAN

As you are aware, the province is seeing a resurgence in Covid-19 cases and admissions in recent days like some of sister provinces and we may well be heading towards a fully - fledged fourth wave in the coming days to weeks. We have learnt important lessons from the previous waves which has informed our preparation for the fourth wave.

It is important that we act now to mitigate the intensity of the fourth wave. The Resurgence plan provides broad parameters along six domains viz.:

- (1) Change community behavior to prevent infections
- (2) Surveillance and outbreak response
- (3) Support and maintain mass vaccination campaign
- (4) Titrate health platform COVID-19 capacity
- (5) Maintain comprehensive health services, and
- (6) Safeguard the well-being of health care workers

These are guidelines, that must be appropriately adapted to your specific context, for operational planning and implementation at a local level.

Yours sincerely

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HEAD OF HEALTH: WESTERN CAPE GOVERNMENT
DATE: 7 DECEMBER 2021





Western Cape
Government
Health

Fourth Wave Resurgence Plan

Managing the COVID-19 Epidemic

December 2021

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List of acronyms

CAN	Community Action Networks
CBO	Community Based Organisations
CHW	Community Health Worker
COCT	City of Cape Town
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Coronavirus disease 2019
DEDAT	Department of Economic Development and Tourism
DOCS	Department of Community Safety
HCW	Health Care Worker
HIV	Human Immunodeficiency Virus
ICT	Information and Communication Technology
ICU	Intensive Care Unit
IPC	Infection Prevention and Control
MEC	Member of the Executive Council
MHS	Metro Health Services
NDOH	National Department of Health
NGO	Non-Governmental Organisations
NHLS	National Health Laboratory Services
NICD	National Institute for Communicable Diseases
NIOH	National Institute of Occupational Health
OHS	Occupational Health and Safety
PCR	Polymerase Chain Reaction
PHC	Primary Health Care
PPE	Personal Protective Equipment
SAPS	South African Police Service
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SCM	Supply Chain Management
SPV	Single Patient Viewer
STAG	Surveillance and Testing Advisory Group
TB	Tuberculosis
VTU	Virus Testing Units
WCG	Western Cape Government
WHO	World Health Organisation

Executive Summary

The province has been through three previous COVID-19 waves and has learnt many lessons, which have been distilled through deliberate reflective conversations. This has served us well and helped to better prepare for the next wave.

The Department has been closely monitoring the evidence around a new variant, Omicron, and its implications and the COVID-19 cases, admissions and deaths and will continue to do so until which time our indicators for resurgence for the 4th wave have been met and we adjust our strategic response to COVID-19 whilst limiting the impact on other sectors and services as far as possible.

Of equal importance, whilst we await signs of resurgence, we need to ensure that adherence to social public health measures like wearing of masks, social distancing, restricting the size of gatherings, ensuring good ventilation and hand washing or sanitization. Most importantly, we need to make every effort to increase vaccination, especially in the elderly and those with comorbidities, in order to reduce the risk of a 4th wave resulting in admissions and deaths that could overwhelm health services. Several countries have demonstrated that high levels of vaccine coverage in those most at risk of severe COVID-19 substantially reduces the risk of an overwhelming increase in admissions, even if COVID-19 infections increase. While we will continue to remain vigilant of COVID-19 cases and have an agile health service response, the focus will be on mitigation of a resurgence should it result in an increase in hospital admissions or deaths. Once an increase in admissions has been identified we need to act with urgency to ensure that our response is timeous, informed and appropriate to the level of risk. This requires a whole of society approach and for each one of us to commit to.

The Department has developed a six - point plan to address the fourth wave. This includes:

- (1) Change community behaviour to prevent infections
- (2) Ongoing COVID-19 Surveillance, particularly hospitalizations
- (3) Support, maintain and scale-up the mass vaccination campaign
- (4) Titrate health platform COVID-19 capacity
- (5) Maintain comprehensive health services, and
- (6) Safeguard the well-being of health care workers

This fourth wave resurgence plan is a dynamic and deeply collaborative effort in order to consolidate our preparedness as a province. The health system's response requires agility and adaptiveness and needs to be data led and evidence informed in all aspects from communication through to titration of the COVID-19 health platform. Triggers have been suggested to titrate the health system response. Local management teams can and should adjust their response, aligned to the strategies outlined above, and in accordance with their local context to ensure relevance, appropriateness and an adequate response to a potential COVID-19 fourth wave. The fourth wave plan must also be seen against a context of recovery and reset of the medium to long term transformation agenda of the Department.

Key updates for the fourth wave

- The context of the fourth wave will be different to that of previous waves considering the impact of higher vaccine coverage and the increasing seroprevalence after three waves of COVID-19.
- This resurgence plan considers vaccinations as a key lever to reduce the impact of a severe 4th wave.
- Whilst we will remain vigilant of COVID-19 cases, the focus in the fourth wave will mainly consider mitigating the increase in hospitalizations and deaths from COVID-19.
- The 6-Point Plan as articulated has been amended to account for this.
- Our approach to resurgence metrics has also taken this into account to shift the focus towards the hospital service platform impact with case-based surveillance triggering further public messaging
- Certain low-value, high-cost initiatives from previous waves have been looked at in terms of opportunity cost and resources shifted towards other areas such as vaccinations.
- We reflect on some of the lessons from the third wave as well as some of the transversal areas such as communication and governance in order to hold on to good practises as we approach the fourth wave.
- Detailed description of the status of the vaccine programme and strategic approach and direction towards the December period has been clearly articulated.
- Lastly, this resurgence plan has held onto the need to balance the demand for COVID-19 with other health conditions that also require attention and hence align with our recovery and reset strategy for holistic healthcare service provision for the province.

Background

The first case of COVID-19 in the Western Cape Province, South Africa was reported on 11 March 2020. This was followed by a gradual increase in cases and a transition from initially imported cases to sustained community transmission. On a national level, the country has been in State of Disaster since the 27th March 2020, having transitioned between various alert levels depending on the course of the pandemic. By November 2021, the province had experienced three established COVID-19 waves and is now in full preparation for a potential fourth wave. This document will outline the consolidated strategic resurgence plan for the potential fourth wave of COVID-19.

Epidemiological Profile of COVID-19 in the Western Cape

Current Epidemic Status

Table 1: Summary of Current Epidemic Status in the Western Cape (as of 09 November 2021)

Key COVID-19 Indicator	Total No.
Confirmed COVID-19 infections	523,369
Individuals infected with COVID-19	516,631
Reinfections	6,738
Tests Done (PCR and Antigen)	2,571,091
COVID-19 related deaths	20,166

As of 9 November 2021, there have been 523,369 confirmed COVID-19 infections in 516,631 individuals diagnosed in the Western Cape. These infections include 6,738 reinfections (defined as ≥ 90 days between positive SARS-CoV-2 tests, with or without a negative test in between). This comes from a total of 2,571,091 tests that have been conducted in the Western Cape across both the public and private sectors, which includes polymerase chain reaction (PCR) and point-of-care antigen testing.

The Western Cape has also sadly reported 20,166 deaths due to COVID-19 as of 9 November 2021. These deaths are confirmed via numerous sources and predominantly include deaths in public and private sector hospitals. Deaths confirmed via case and contact tracing are also included in this total. Since mid-March 2021, deceased individuals identified via the National Population Register with a confirmed COVID-19 test conducted in the province are also included. Deaths are reported as due to COVID-19 if they occurred within 28 days of diagnosis, or within 14 days of discharge where individuals were admitted, with no documented non-COVID-19 cause of death. The South Africa Medical Research Council (SA-MRC) have been reporting on excess mortality (due to natural causes of death), and for the Western Cape have reported 27,774 excess deaths between 3 May 2020 and 6 November 2021¹. The SA-MRC estimates that 85-95% of excess natural deaths can be attributed to COVID-19, although this does differ per province². A comparison of the reported COVID-19 deaths and excess natural deaths for the Western Cape can be seen in figure 1.

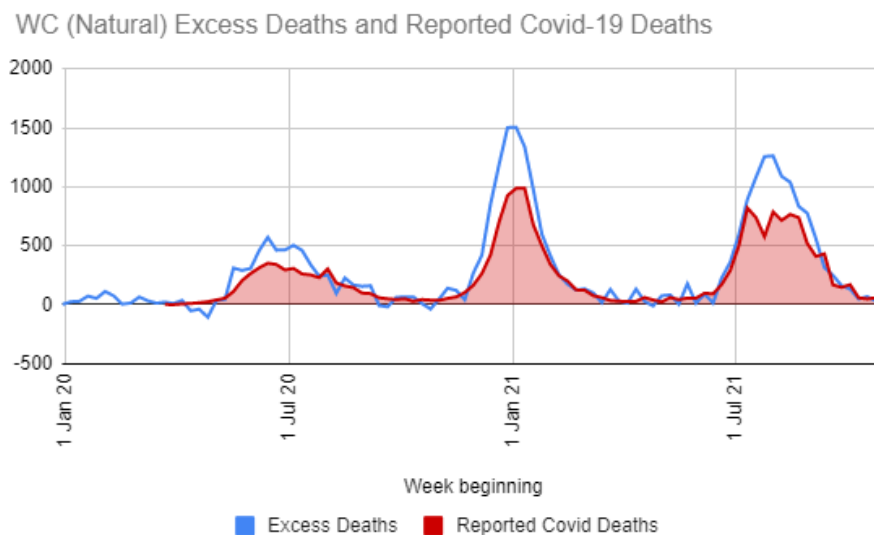


Figure 1: Western Cape excess mortality (SA-MRC) through to 6 November 2021

¹ <https://www.samrc.ac.za/sites/default/files/files/2021-11-10/weekly6Nov2021.pdf>

² <https://www.samrc.ac.za/sites/default/files/files/2021-03-03/CorrelationExcessDeaths.pdf>

Western Cape COVID-19 Evolution

Figure 2 details several metrics used to track the COVID-19 epidemic in the province. The graph clearly shows three waves for all metrics to date. The wave periods as experienced in the province are detailed in table 2.

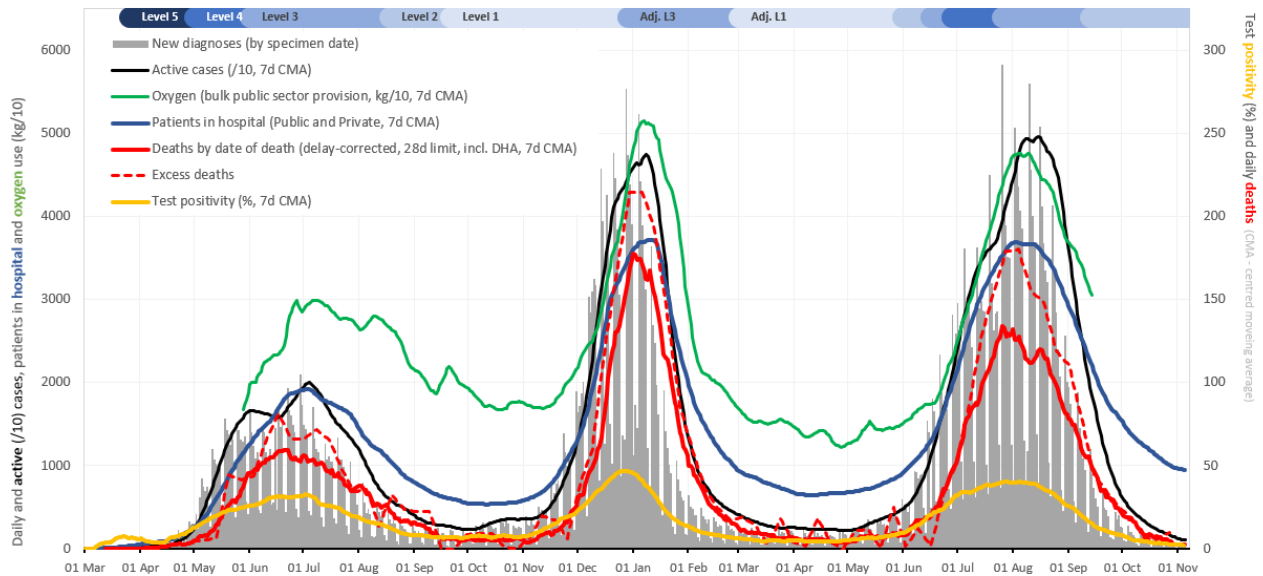


Figure 2: Western Cape COVID-19 Epidemic (to 9 November 2021)

Table 2: Western Cape COVID-19 estimated wave periods

Wave	Time period
Early wave 1	10 March 2020 – 31 May 2020
Late wave 1	1 June 2020 – 31 August 2020
Inter-wave (1)	1 September 2020 – 15 October 2020
Wave 2	16 October 2020 – 28 February 2021
Inter-wave (2)	1 March 2021 – 10 June 2021
Wave 3	11 June 2021 – 23 September 2021
Interwave (3)	24 September 2021 – present

In terms of test positivity for the Province, (i.e., the number of cases diagnosed divided by the number of tests conducted on any given day) the first wave peak saw proportions as high as ~ 40% (mid-June 2020) and just under 50% at the peak of the second wave (end-December 2020) before the country moved to an adjusted alert level 3.

Like the first two waves which showed differences at provincial level in terms of timing and size, the third wave also had a unique pattern. The increase in national alert levels in late May 2021 aimed to mitigate the effects of the steep increase in case numbers in Gauteng which experienced a rapid increase in incident cases and resultant third wave twice the size of the second wave at its peak.

The Western Cape was still in the inter-wave period when the country moved to an adjusted alert level 2 on 31 May 2021 and had just entered the third wave shortly before the increase to an adjusted alert level 4 on 16 June 2021. This likely slowed down infections in the province and effectively “flattened the curve”. However, the rapid decline in incident COVID-19 cases in July 2021 following the peak in Gauteng resulted in a decrease in the adjusted alert levels despite the Western Cape and other provinces not having reached their peaks. As a result, the third wave in the province was more protracted than the second. In addition, taxi

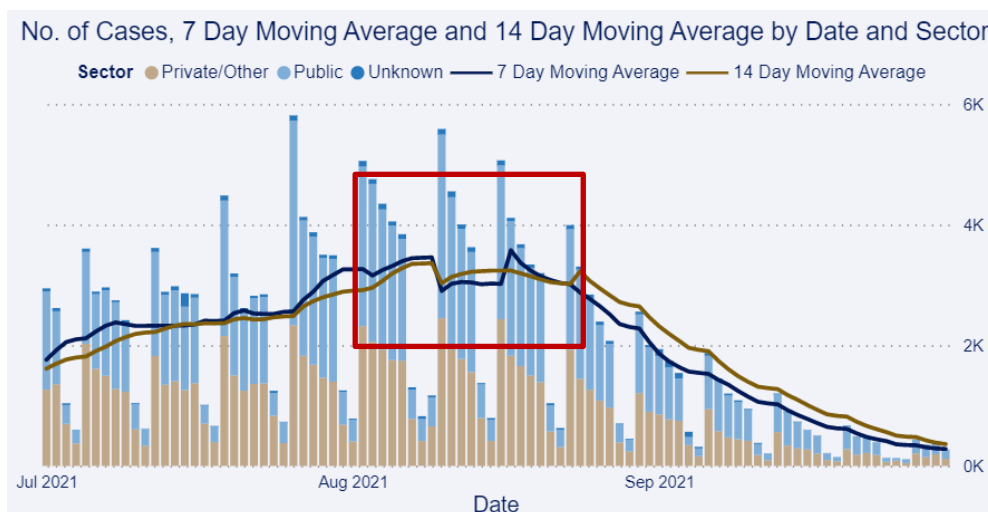


Figure 3: Western Cape epidemic curve with change in shape coinciding with change in alert level and taxi violence

violence experienced in the Province resulted in a decrease in mobility with less people accessing healthcare during that time. Figure 3 shows the resultant “crater” at the peak of the third wave in the Western Cape owing to these factors.

Overall, the country saw a more severe third wave which was largely driven by the introduction of the Delta variant³. The resurgence has since subsided with all nine provinces having exited the third wave, and the country remains on an adjusted alert level 1.

Districts

When reviewing the six districts in the province there is considerable variation in epidemic curves noted (Figure 4). In terms of rural Western Cape districts (Figure 5), they all experienced a more protracted third wave compared to the first and second waves. The timing of the start of each wave was found to be staggered per district, with Cape Winelands and West Coast seeing an increase in cases early in May 2021, whereas the increase in the Garden Route district started in early June 2021.

³ <https://www.nicd.ac.za/covid-19-its-time-to-look-at-the-finer-details-of-south-africas-pandemic-picture/>

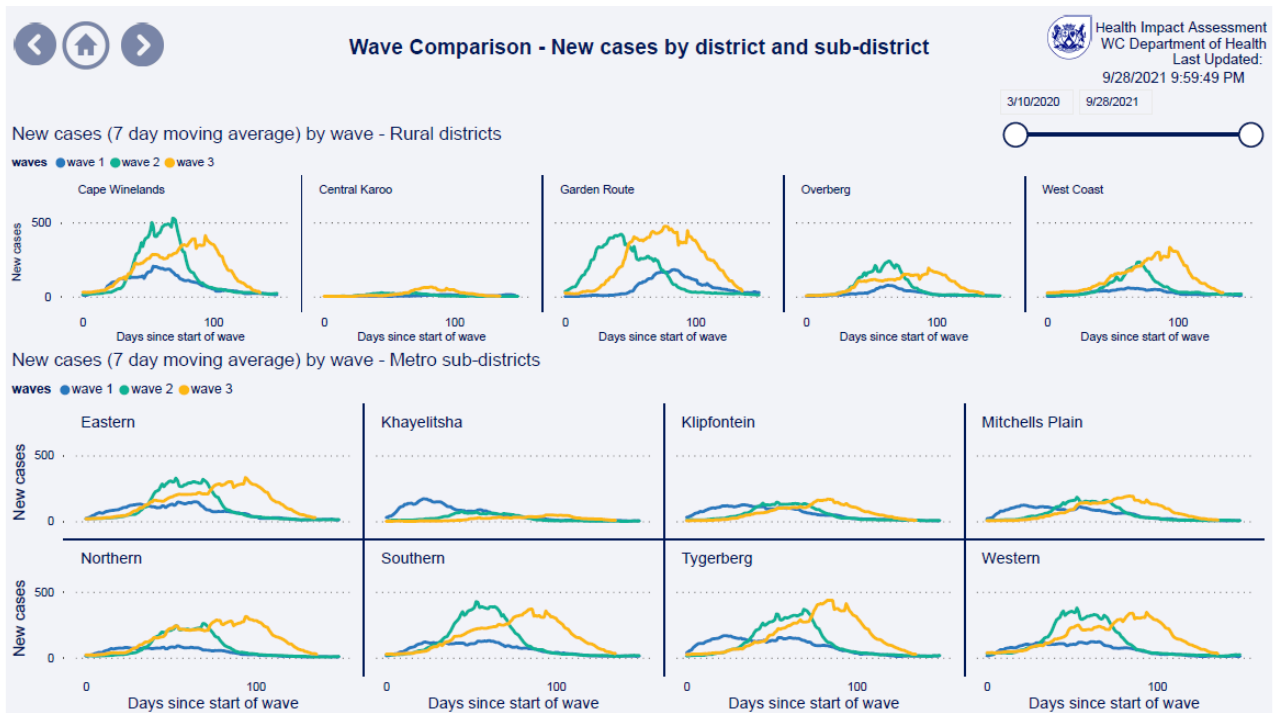


Figure 4: Comparison of the three waves superimposed, by district and subdistrict

Looking to the Cape Metro district (Figure 6), cases started increasing from early May 2021 for the third wave, with a sustained increase from the start of June 2021. Khayelitsha had a significantly smaller third wave compared to the other subdistricts, possibly due to protection conferred by higher seroprevalence in the community by the end of the first and second waves.

In the Cape Metro district it is also notable that private sector testing is higher in wealthier subdistricts viz. Northern, Southern and Western. However, individuals may test in private yet still receive care in the public sector, including hospital admission. When split between sectors, the wave patterns differed between private and public sector, with the third wave commencing and reaching its peak earlier in the private sector in keeping with an imported variant which would initially be introduced by wealthier people who travel internationally (Figure 7).

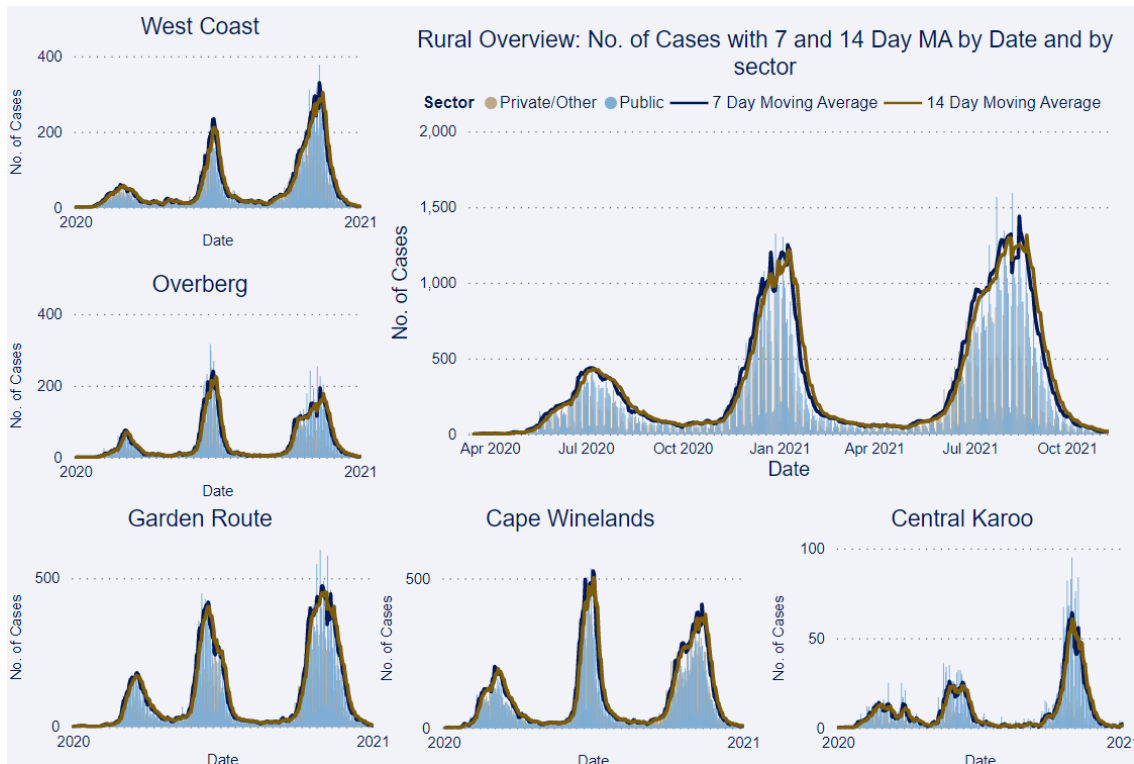


Figure 5: Rural districts COVID-19 cases, 7- and 14-day moving averages over time

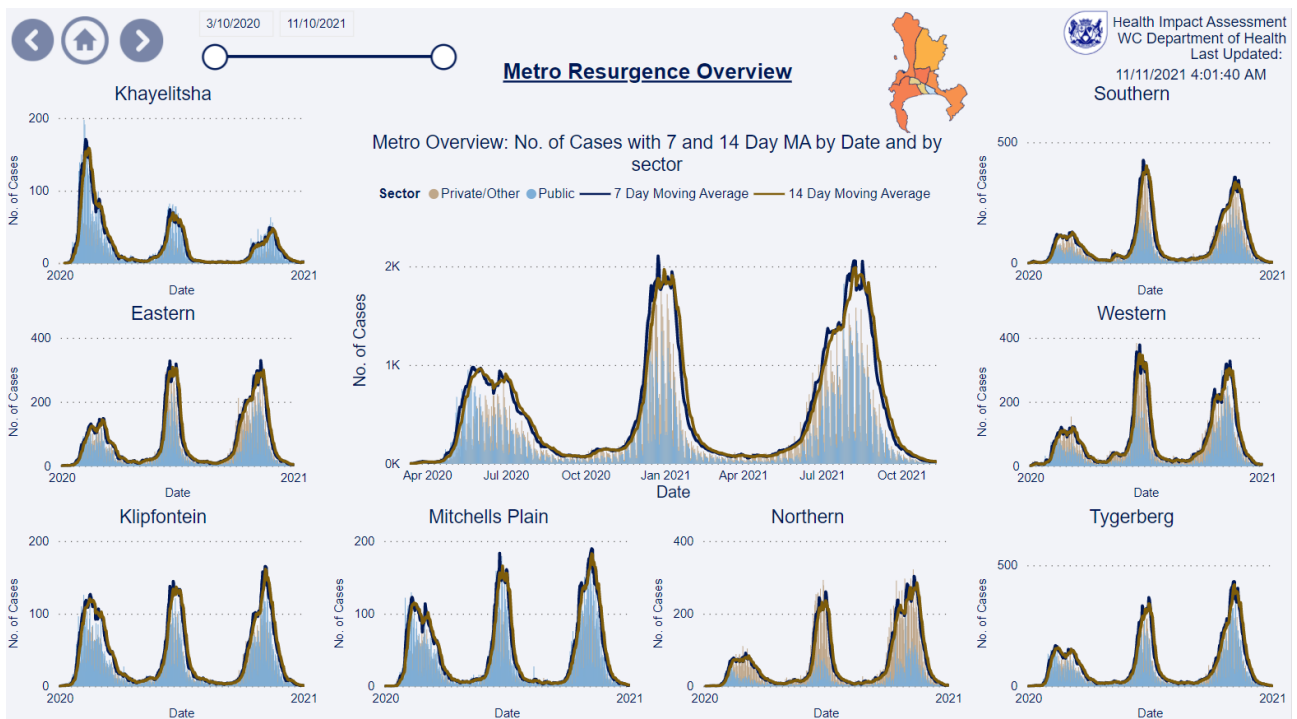


Figure 6: Cape Metro subdistricts COVID-19 cases 7- and 14-day moving averages over time

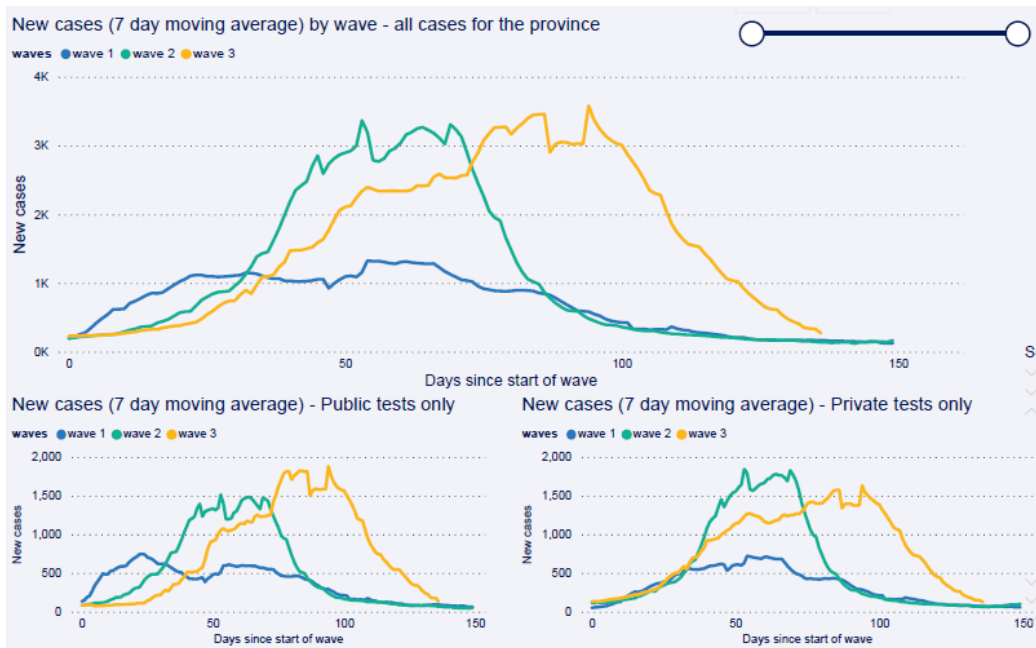


Figure 7: Wave comparison using 7-day moving average of cases by sector

Hospitalisations

Hospitalisation and deaths due to COVID-19 are considered lagging indicators for tracking the epidemic. In Figure 2 this is clear when comparing cases (grey bars, diagnoses by test date) to hospitalisations (blue line) and deaths (red line(s)). Both the metro and rural districts experienced fewer peak daily new hospitalisations during the third wave compared to the second but experienced high admission pressure over a longer period of time than in the first two waves. Rural districts varied with their experience of hospital admission numbers, with Garden Route and West Coast seeing more new admissions in the third wave than the first two waves.

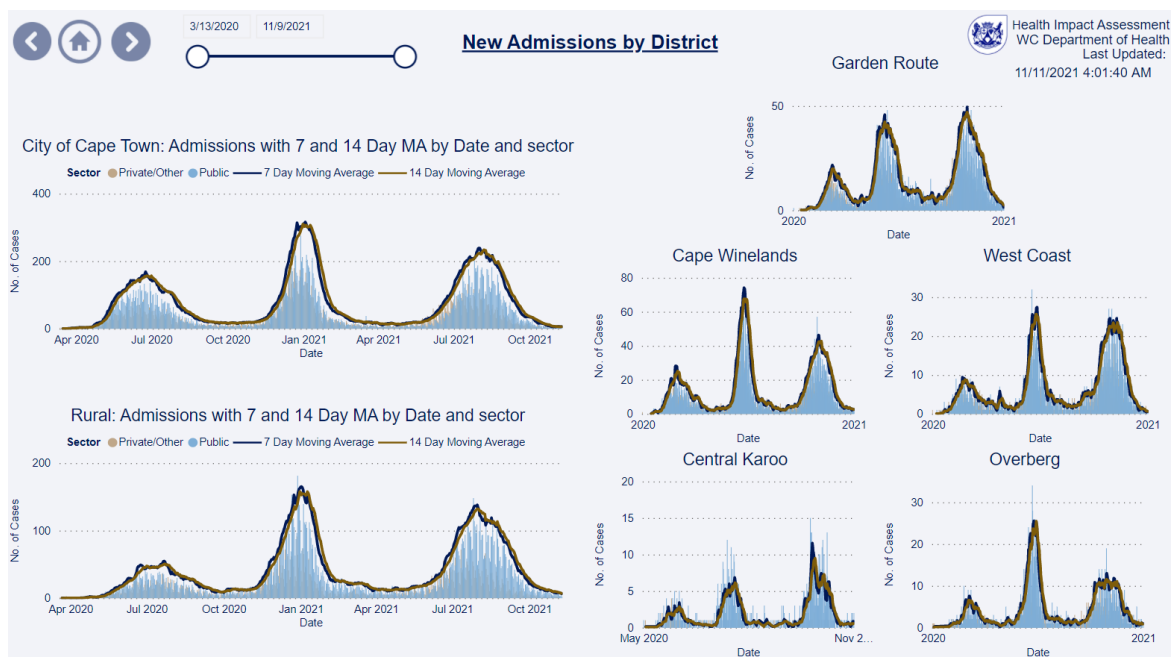


Figure 8: Western Cape hospitalisations due to COVID-19 (7- and 14-day moving averages)

Healthcare workers

Healthcare worker infections follow a similar pattern to the epidemic experienced in the Western Cape but were somewhat attenuated relative to the previous wave. This is likely due to a combination of vaccination (>60% of Western Cape Government Health employees were vaccinated by

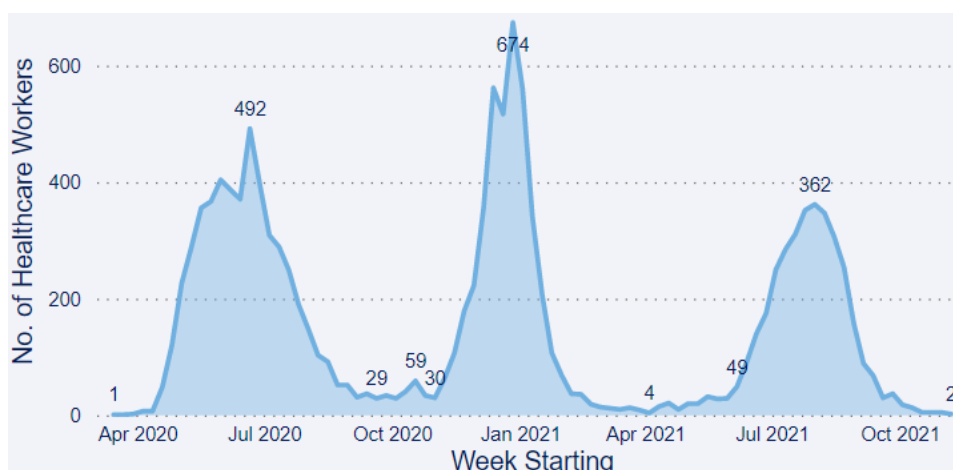


Figure 9: Healthcare worker infections by week in the Western Cape (through to 9 November 2021)

the start of the third wave) and immunity from prior infection but were somewhat attenuated relative to the previous wave. It is important to note that not all healthcare worker infections are acquired in the workplace, and many may be acquired in communities due to widespread community transmission. Identifying the point of exposure is difficult, particularly in the context of community transmission.

Vaccinations

Vaccines against SARS-CoV-2 infection (COVID-19) became available globally, with many countries authorising emergency use via the relevant regulatory organisations. In South Africa, the Johnson & Johnson (Janssen) vaccine was made available to healthcare workers across the country via emergency use and a Phase 3b open label clinical trial conducted by the South African Medical Research Council (Sisonke) with roll-out having started in February 2021⁴, and 479,768 health care workers vaccinated through Sisonke by mid-May 2021. The roll-out to the rest of the population started on 17 May 2021 with a combination of the Pfizer and Janssen vaccines depending on supply and access, starting with the over 60s, with additional age bands included with each progression in vaccination roll-out phase. The most recent age band of 12-17 years were included as of 20 October 2021 for a single dose of the Pfizer vaccine⁵.

As of 8 November 2021, the Western Cape has administered 3,792,446 vaccinations across Metro and Rural districts (Figure 10). The recent slowing down in rate of vaccination is a concern, which the Province will need to put particular focus on to mitigate the effects of the fourth wave.

⁴ <https://www.samrc.ac.za/media-release/south-africa-commences-early-access-vaccine-rollout-healthcare-workers-sisonke>

⁵ <https://sacoronavirus.co.za/2021/10/19/media-statement-health-department-commence-with-vaccine-rollout-for-12-17-year-olds/>

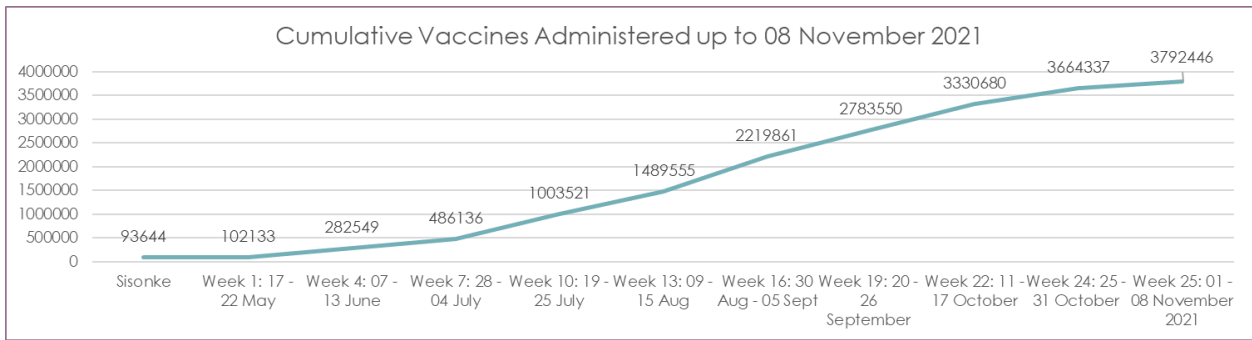


Figure 10: No. of Vaccines Administered in the Western Cape

Seroprevalence

The province conducted sentinel surveillance at the end of the first and second waves using a convenience sample of residual specimens from diabetics undergoing glycosylated haemoglobin tests (HbA1c) assumed to be attending health services for non-COVID-19 reasons. Across districts, at this point in time seroprevalence ranged from 33% in West Coast to 47% in the Cape Town Metro. Within the Cape Town Metro, seroprevalence ranged widely across subdistricts from 57% in Southern to 68% in Khayelitsha and was only 26% in the private sector. Seroprevalence was higher in poorer subdistricts and was inversely correlated with the ratio of wave 3 deaths to deaths in the previous two waves, suggesting that subdistricts with high seroprevalence due to a severe first wave were relatively protected in wave 3 (Figure 11).

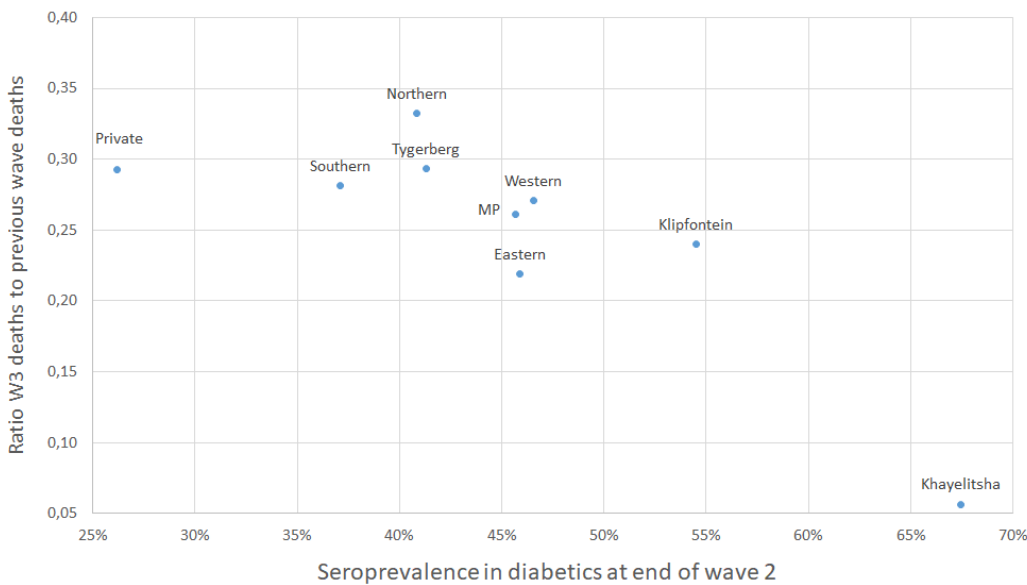


Figure 11: Inverse correlation between subdistrict SARS-CoV-2 seroprevalence at the end of wave 2 and the ratio of wave 3 to previous wave deaths

Seroprevalence was consistently lower in older vs. younger adults, supporting the prioritization of those >60 years for early vaccination (Figure 12).

Resurgence and expectations for a fourth wave

The SA COVID-19 Modelling Consortium (SACMC) has predicted that, in the absence of emergence or introduction of a new COVID-19 variant, the Western Cape can expect that the intensity of the fourth wave will be less severe than the third wave. Importantly, the health

service burden of the fourth wave in terms of admissions and mortality can be substantially reduced by achieving 70% vaccine coverage in those ≥ 60 years and, should admissions increase, a fast, early and strong non-pharmaceutical intervention (NPI) response to early resurgence metrics.

With the increased uptake and promotion of rapid antigen testing for the Western Cape, we will likely rely less on case-based resurgence metrics, and instead focus more on indicators such as hospital admissions which have tracked alongside our cases and may become a more reliable indicator of a resurgence, particularly in the context of widespread vaccine uptake.

Omicron (B1.1.529) variant:

Our scientists in South Africa have announced the discovery of a new variant, Omicron with several mutations. It has been detected in several provinces and was first noticed in the Western Cape on the 17th November. To date it has been discovered in more than 20 countries. Evidence is still emerging about its transmissibility, severity, reinfections, and effectiveness of the vaccines against it. Current data seems to point to it becoming the dominant variant in the 4th wave. Data is already showing an increase in cases in many districts in the Western Cape. The Department will closely track the emerging evidence and titrate our health system response and level of service provision for COVID-19 accordingly. In the meantime, all of the social preventive measures such as mask wearing, social distancing and limited gatherings, hand washing and encouraging people to vaccinate remain firmly in place.

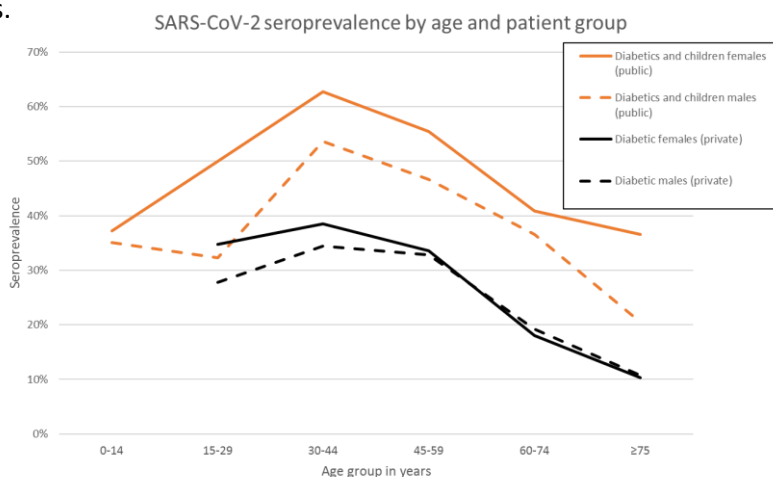


Figure 12: SARS-CoV-2 seroprevalence at the end of wave 2 by age group from testing of convenience samples children, public sector and private sector diabetic patients

Lessons from the first wave

A series of reviews were conducted between August and September 2020 to surface lessons learnt from the first wave of the epidemic. Some of the most notable lessons include:

- A strong theme of stewardship and leadership emerged with clear reflection of a sense of shared and collective purpose. This was critical to help catalyse action across the system.
- The establishment of the hotspot strategy has been invaluable in ensuring that distributed leadership, which was shared through a whole of government and societal approach to responding reactively and proactively to this pandemic.
- Staff were, and still are, the central pillar of the epidemic response often having to take on much more duties than their usual job description within routine health service delivery. The emotional and mental impact of service pressures, loss of life of both patients as well as loved ones in their families and communities took a major toll on staff and required them to be emotionally supported.
- Data had become the lifeblood of the health system response and the value of a focus on data to lead departmental and provincial level decision-making were key to guiding an informed and appropriately titrated response. This coupled with innovations in ICT, which includes the COVID-19 and PPE dashboards, leveraged data not only for management decisions but even directly for individual behaviour and citizen transparency and accountability.
- Early planning in infrastructure led to various innovations and rapid turnaround times in setting up virus testing units (VTU's), field hospitals and preparing existing facilities for the epidemic.
- A strong working relationship between Supply Chain Management (SCM) and Infrastructure helped to fast-track procurement usually processed through Department of Public Works, in preparation for the epidemic surge. This was further supported by multiple flexible governance structures allowing for cross departmental collaboration to flourish.
- Local research and global partnerships between clinicians led to rapid learning in how best to manage COVID-19 patients and this was supported within an agile, adaptive and responsive health system.
- The rapid development of policies was identified as an enabling factor to guide staff during unprecedented times, but this needs to be streamlined as not to overwhelm local managers.

Areas for growth identified at this point included:

- Improvements in stakeholder management, particularly the provincial/national interface, private sector collaboration and community engagement.
- Initial limited epidemic preparedness for an infectious disease outbreak was a challenge.
- In addition, Infection and Prevention Control (IPC) and Occupational Health and Safety (OHS) were identified as areas requiring urgent attention and strengthening.

Lessons from the second wave

The speed and severity of the second wave demanded a rapid response and considerable agility to adequately sustain the service delivery platform to mitigate against the number of hospitalizations, the need for oxygen and the sheer volume of COVID-19 deaths. As a result, and after having had come down from the second wave several lessons emerged as follows:

- An important consideration was to not re-escalate routine health services too rapidly after a wave. The first wave of COVID-19 had a significant impact on the provision of TB and HIV care, immunizations and other routine primary and acute care services. As a result, after coming off the first wave we quickly scaled up these services again. Unfortunately, when the second wave hit, we had to then de-escalate our primary and acute care services rapidly. A titrated pre-emptive approach would have allowed for a more coordinated response.
- Intermediate Care Capacity is a vital means of managing and maintaining a surge capacity to down-refer stable COVID-19 cases from acute care hospitals. Therefore, this resource was identified as an important service resource to be protected and sustained in anticipation for the third wave.
- The second wave further highlighted the impact of alcohol-related trauma and injury on service capacity and provision. This was managed with national policy just prior to the peak of the second wave and has been increasing with each relaxation of regulation.
- Our healthcare workers experienced significant psychological trauma in terms of colleagues being affected by and dying from COVID-19 as well as the sheer volume of COVID-19 patients that required management during the peak of the second wave. We needed to ensure that we used the post-wave period to heal our staff, and allow adequate leave to be taken by all staff in order to recover from the second wave.
- An important strength was the ability to titrate our response with evidence informed and data led intelligence. Dashboards providing data in real time and convening huddles of relevant role players played a critical role in managing oxygen provision, bed capacity, testing capacity, surveillance and outbreak responses.
- The role of Emergency Medical Services (EMS) in ensuring equitable distribution of COVID-19 patients was also highlighted as a key enabler and strength.
- The provision of high flow oxygen as a treatment modality proved cost effective and helped take the pressure off the limited number of critical care beds.
- The adoption of antigen testing, and widespread use of steroids also further supported service provision and will likely continue to support our response moving forward.

Areas for growth identified at this point included:

- The gap in provision of palliative care as HCWs were not adequately capacitated for this, particularly amidst the rate at which patients (and colleagues) were dying.
- The need for an earlier titrated de-escalation at the first signs of a new wave

Lessons from the third wave

The width, severity, and prolonged nature of the third wave coupled with competing demands to maintain routine healthcare services, maximize and scale up COVID-19 vaccine delivery and limit the extensive economic impact on other sectors proved to be an enormous balancing task. This stretched people both within and outside of the department in terms of their resilience to uphold momentum more than one year into the epidemic. As we exit the third wave, there are a number of lessons that have subsequently emerged. These include:

- The continuous unpredictable nature of the pandemic, particularly in the presence of new viral variants.
- The impact and timing of lockdown regulations in terms of the progression of an epidemic wave.
- The effectiveness of vaccines in limiting the impact of the wave, particularly seen in healthcare workers, and the clear need to adequately extend this benefit to the entire population.
- The importance of titrating the healthcare service platform according to a set, transparent and well communicated number of resurgence metrics.
- It is important to acknowledge the challenge when it comes to fatiguing health and science communication in the face of rapidly emerging and changing research. This could be seen across all spheres from vaccine (mis)information, to arbitrary pharmaceutical interventions to the changing understanding of viral transmission.
- The importance of re-establishing routine health care services within the context of the epidemic as the cumulative risk of neglecting other healthcare demands is starting to emerge.
- The clear correlation between alcohol availability and alcohol-related trauma presentations has been once again demonstrated throughout the level 4 lockdown period. The institution of this regulation within the Disaster Management Act (DMA) needs to, though, consider the differential timing of epidemic progression across different provinces to be sharp and effective.
- The need to consider a consistently pressured healthcare staff compliment and allow for intentional healing and recovery, both psychologically and physical with a special leave period post the third wave.
- The importance of appropriate data and evidence to guide the understanding of epidemic progression and applying it to the variable need for additional bed, oxygen, PPE and staff capacity.

The epidemic has taught us that rapid change is reliant on being network centric, human centred, tech savvy and agile if we are to get a broad range of stakeholders to act collectively in the face of adversity (Figure 13). There is a clear need to continue to build a health system that is agile in its response to emergent needs by being able to ‘innovate and learn’ (dynamic efficiency); ‘mobilise a broad range of stakeholders’ to act in the best interest of the health and wellbeing of the people (govern for health); ‘make the right choices’ about what to do (allocative efficiency) and then ‘doing it well’ (technical efficiency).

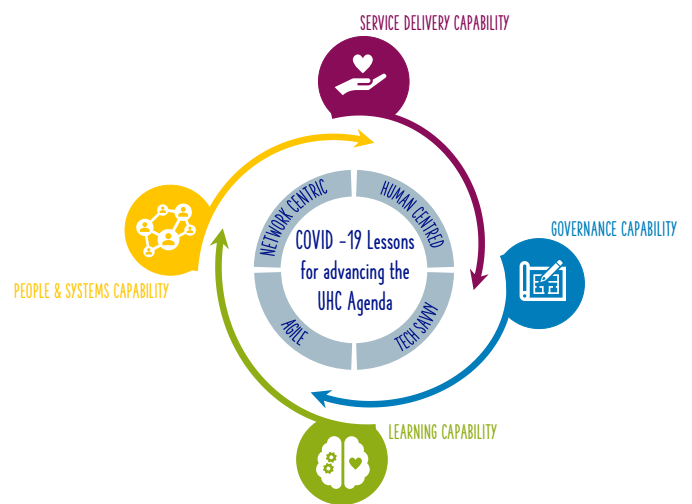


Figure 13: Catalysts for change

Transversal areas across all three waves

Communication and Messaging

The COVID-19 pandemic across, all three waves thus far, demanded a strong, regular, up to date and accurate communication strategy in order to manage the varying levels of public anxiety and concern. This had to be dynamic and be informed by the latest emerging evidence of COVID-19 or the subsequent vaccines that followed. Messaging needed to be aligned from a national, provincial and local level to ensure coherence and trust.

One of the key means of driving a scientific approach to public health communication was to leverage a weekly space between the HOD and the Premier known as the Digicon or Digital Conference. This was to regularly inform mainstream media houses and their audiences of the current situation within the Western Cape as well as epidemic progression, healthcare capacity constraints and future planning.

Communication teams within health and outside health collaborated to develop online and physical marketing material to share information about the pandemic. Websites were developed as single portals for accurate health information. This was supplemented by public COVID-19 and vaccination dashboards which are still operational and will help continue to ensure public trust as we approach the fourth wave.

Communication messaging was titrated according to both the trajectory of the epidemic and the media cycle that the province was experiencing at the time. It was also titrated according to level of influence be it at a local community level or at a provincial level. As we look towards the fourth wave many of these lessons will be taken forward whilst new campaigns will need to be explored to adequately fight societal fatigue towards COVID-19 messaging.

Governance

Another transversal area that should be brought to the fore is that of governance. Within the past 18-month COVID-19 period there was a need and a clear response to the need for distributed leadership at multiple levels including senior management, clinicians, public health and technical specialists. This was complimented by the ability to be true stewards for health by actively collaborating with other sectors and other departments to actively leverage opportunities to influence public policy (e.g. local and national restrictions, alcohol legislation within the DMA). This stands us in good stead as we move forward and look towards addressing the social determinants of health as part of the WCG Recovery Plan.

One of the symptoms of good governance that clearly emerged across the waves was the agility for decision-making in informed spaces. This could be seen during the many huddles that were data-led and evidence-informed for everything from oxygen, surveillance and outbreak response to the entire clinical and health platform. Furthermore, the creation of strategic huddle with clear focus areas, quality speakers and a wide audience with virtual attendance from staff across the department helped provide a reflective and learning space for continuous improvement. This level of distributed governance led to various areas of growth in leadership capacity within health and will bode the department well moving into the future.

A framework for action: 6 Point Plan

A 6-point COVID-19 Fourth Wave Resurgence Strategy (Figure 14) has been developed to guide service delivery in the province, which includes:

- (1) Change community behaviour to prevent infections
- (2) Ongoing Surveillance, particularly hospitalizations
- (3) Support and maintain mass vaccination campaign
- (4) Titrate health platform COVID-19 capacity
- (5) Maintain comprehensive health services, and
- (6) Safeguard the well-being of health care workers



Figure 14: 6-Point COVID-19 Resurgence Strategy

1

Change community behaviour to prevent infection

The principal mode by which people become infected with COVID-19 is through exposure to respiratory aerosols carrying the infectious virus. These aerosols are produced during exhalation (e.g. breathing, speaking, singing, coughing, sneezing). Available data indicate that COVID-19 is more infectious than influenza but less infectious than measles, although transmissibility varies according to the characteristics of each viral variant, with the delta variant being approximately twice as infectious as ancestral strains. The most recent variant, omicron, is showing early evidence of even higher transmissibility which further emphasizes the need to ensure adequate behaviour change to limit this. Regardless of variant type, airborne transmission of COVID-19 often tends to occur in overcrowded, enclosed spaces, with little or no ventilation, where there is prolonged exposure to respiratory aerosols, particularly in high density housing settings, social gatherings, and places of employment. This needs to be emphasised as we enter into the Festive Season, with specific tailored advice to the public about behaviour and ongoing safety precautions.

Social Marketing and Mobilization to limit COVID-19 spread

Minimising the likelihood of transmission means being mindful about who we share our 'air space' with, keeping our distance, ventilation, and mask wearing. A strong social marketing strategy that continues to promote and enable these personal protective behaviours still remains important in containing the epidemic. Messaging needs to be context sensitive and nuanced for local epidemic scenarios to support and enable safer choices. This is achieved by a combination of mass media and more localized mediums, with a focus on public area activations, public transport messages and youth focused social media campaigns.

The three Cs, **crowded** places, **close** contact settings and **confined** enclosed spaces, are indicators of likely super spreader events and central to the Department's 'making safer choices' campaign (Figure 15). Agility remains a key feature of the communications response to ensure rapid flow of information to close the gap to contain local outbreaks. This agility is enabled by maintaining strong links with health teams, local government enforcement agencies and other relevant partners.

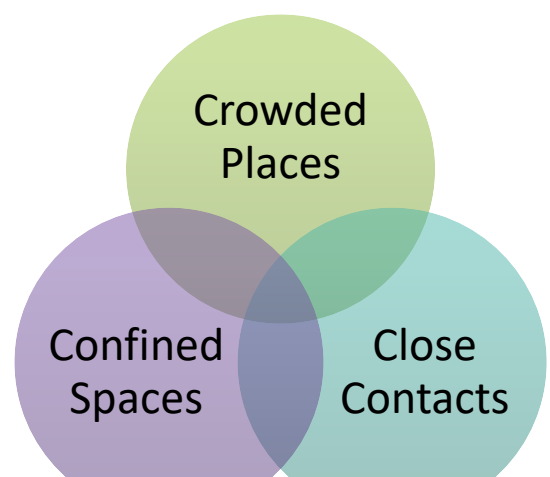


Figure 15: The three C's as indicators for super spreader events

Health Communication messages and material:

Based on the latest available scientific data, a series of simple messages and resources will be updated to emphasise ongoing safety behaviour and public vigilance for the festive season. This will be made available on public platforms and acts as advice to other sectors (Transport, Economic Development and Tourism, Education etc.)

The Community sector is engaged via the provincial Vaccine Steercom to ensure that the messages are landed, distributed and disseminated at local and community level. Vaccination uptake is part of ongoing safety and promoted as part of behavioural response to COVID-19.

COVID-19 vaccine communication and addressing misinformation

Vaccines remain the cornerstone of controlling the epidemic. Social marketing and mobilization will, therefore, also play a fundamental role in supporting the process of registration through to vaccination, and addressing narratives that may drive vaccine hesitancy.

There are several differentiated and targeted initiatives that are being utilized and further expanded to address this challenge. These are divided into various target groups, according to the polling research made available by the Department of the Premier:

The group which are **“vaccine lazy** – or have not got there yet” - the approach would be to try and motivate vaccination uptake by:

- Regular public communication regarding vaccine site operating hours, pop-up sites and weekend vaccination site availability
- Mass communication regarding Vooma weekends to encourage activation during peak periods in the month and supported by national government
- Regular public communication about localized vaccine effectiveness data and evidence, specifically targeting elderly at risk individuals
- Communication regarding risk mitigation and timeous access to vaccines prior to the 4th wave e.g. “Save our Summer” campaign

People with **genuine concerns** (“**vaccine hesitant**”)

- Face to face access to trusted information through multiple direct public engagements with knowledgeable professionals and trusted sources. This includes the “Ask a Dr” campaign with healthcare professionals directly addressing public concerns and linking them to a pop-up vaccine site as well as engagements with economic sectors through the Department of Economic Development and Tourism (DEDAT).

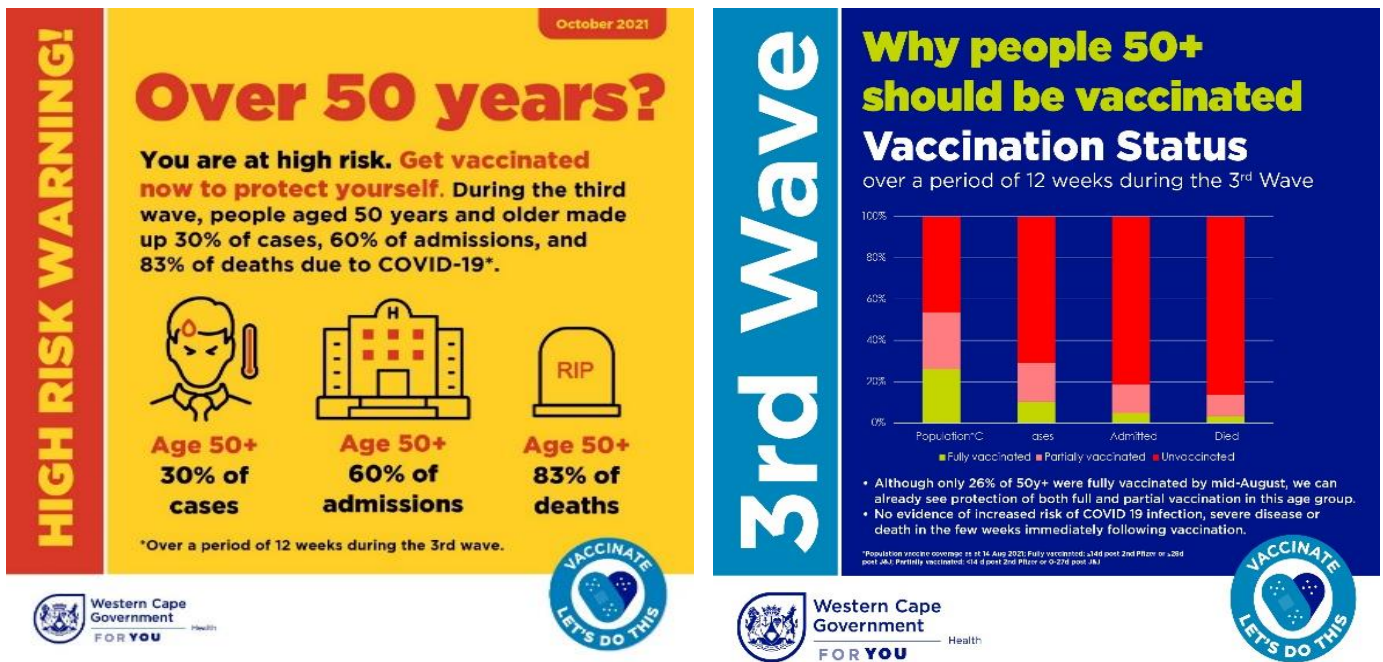


Figure 16: Public communication regarding vaccine effectiveness and elderly risk

Anti-vaxxer sentiment: real “vaccine resistant” community – countering misinformation

It is acknowledged that there is a percentage of vaccine resistant people in our communities. The communication plan is ensuring that misinformation is countered and corrected by providing a trusted and accurate source of official information. We do this in the form of trusted digital platforms:

- The vaccine website <https://coronavirus.westerncape.gov.za/vaccine/>
- Departmental social media: <https://www.facebook.com/WCGHealth/> and WCG portals, where information is shared, and we can use for direct public responses.

Legislation and Policy

The behaviour change strategy also requires a strong element of regulation and enforcement, which will continue to be co-ordinated via the Joint Operation Centres (JOCs), located in the Provincial and District Disaster Management Centres. The JOCs will co-ordinate the deployment of law enforcement agencies and environmental health practitioners, in targeted geographic areas or high-risk events to enforce responsible behaviour.

Advisories to policies within the context of the national Disaster Management Act offer some of the most effective means of mitigating against the severity of another COVID-19 wave. The goal of advisories when there are early signs that a new wave might be beginning is containment to reduce transmission and attempting to slow down and reduce the size of the peak of the wave.

An early warning system (with pre-defined triggers and responses) will allow for:

- a) Transparent communication and planning enabling public understanding and trust e.g. the resurgence monitor on the Western Cape COVID-19 dashboard.
- b) Staged, incremental, dynamic interventions to slow down the increase of infections (flatten the curve) that may ultimately overwhelm the healthcare system.
- c) Reinforcement of community interventions to strengthen the response.

Widespread restrictive measures have 2 main purposes:

- a) During the **early phase of a COVID-19 wave, restrictions aim to limit transmission, ensure NPI adherence and contain COVID-19** to reduce the speed at which new infections occur (flatten the curve) and prevent the health service from being overwhelmed. Examples of such measures are restrictions on gatherings and travel.
- b) Once there is a **threat of health services being overwhelmed, restrictive measures aim to mitigate the impact of the COVID-19 wave on health services, and free up hospital capacity to treat COVID-19 patients by reducing the non-COVID-19 burden.** This is the major purpose of measures such as curfews and alcohol sales restrictions. Trauma (interpersonal violence and road traffic injuries) contributes substantially to the Western Cape healthcare burden, frequently occurring at night, on weekends and is often related to alcohol. While these restrictions also limit COVID-19 transmission by limiting the time to congregate socially in larger numbers and to consume alcohol in groups with consequent reduced adherence to NPIs, their main purpose is to reduce non-COVID-19 health service burden. Their introduction should therefore be based on concerns about health service capacity and not only on COVID-19 surveillance metrics.

Previous restrictive measures have had severe negative impacts on the economy, education, mental health and social wellbeing, and it is for these reasons that it is important to balance lives and livelihoods. However, limited early containment measures to reduce COVID-19 transmission and flatten the curve may obviate the need for subsequent more extreme mitigation measures to reduce health service demand at the peak of a severe COVID-19 wave, such as curfews and alcohol bans, and thus limit consequent damage on the economy.

It is important to note that the resurgence metrics for the fourth wave will be different to that of previous waves as the vaccine rollout has gained momentum and significant numbers of individuals have been fully vaccinated. International evidence shows that countries with high vaccine coverage have experienced large waves of COVID-19 cases, but with substantially attenuated minimal numbers of hospital admissions and deaths. Nationally and provincially, while we will continue to monitor and be vigilant of increases in COVID-19 cases diagnosed, metrics for triggering restrictions will likely look to

focussing on the impact on the service platform (e.g. hospitalizations and deaths) as opposed to purely looking at case-based PCR/antigen diagnoses.

Increasing vaccine coverage continues to be our best means of decreasing the risk of overwhelming our health system for subsequent COVID-19 waves, and thus reducing the need for future restrictions to prevent COVID-19 transmission. Ensuring that the vaccine rollout is optimally, and efficiently maximized prior to the fourth wave is paramount. This may eliminate the need for future restrictions or allow for them to be more flexible and lenient and thus limit the long term economic and social damage.

Ongoing surveillance, particularly hospitalizations

Surveillance

A key underlying principle of the approach to COVID-19 surveillance is to **use, adapt and strengthen existing surveillance and data systems, and build surveillance capacity in the long-term**. Surveillance enables a better understanding of infection risk, likelihood of a resurgence (based on regional baseline seroprevalence post the most recent wave) and potential impact on the health service platform in the presence of rising COVID-19 admissions. The key objectives of surveillance for COVID-19 in the fourth wave includes:

- Enabling rapid detection, testing, appropriate escalation, and management of high-risk cases.
- Guiding implementation and adjustment of targeted control measures, while enabling safe resumption of economic and social activities.
- Detecting and containing outbreaks among vulnerable populations. (Note: this could include settings with people at high risk of severe COVID-19 outcomes or closed/semi-closed settings with high risk of transmission such as long-term care facilities, prisons, health facilities, workplaces and schools.)
- Evaluating the impact of the pandemic on health-care systems and society.
- Monitoring longer term epidemiologic trends and evolution of the COVID-19 pandemic.

Different surveillance approaches are used for different purposes and their usefulness will vary at different stages in the epidemic. The following approaches will be considered:

- Case-based surveillance:
 - A shift away from confirmed COVID-19 cases, and a focus on COVID-19 hospital admissions, and COVID-19 deaths
 - Likely COVID-19 related episodes e.g. surveillance of all excess natural-cause deaths
- Sentinel and population-based seroprevalence surveillance to understand the burden of previous infection in different communities and the extent of possible immunity and hence risk of subsequent COVID-19 waves in different groups or geographic areas.
- Molecular surveillance of viruses causing infection by time and place to track evolution of the virus, identify variants driving transmission and investigate cluster outbreaks and vaccine breakthrough infections.
- Environmental and wastewater surveillance as a means of identifying areas where SARS-CoV-2 infections are present, especially if testing reduces.

An Intelligence System

The Provincial Health Data Centre (PHDC) integrates data from multiple sources and can generate a range of real-time reports down to a granular level of detail, with automated analytics. The Western Cape Public Dashboard, a product of the PHDC, provides comprehensive information to the public, that is updated

daily. An internal dashboard has also been created, which provides information on resurgence metrics, testing, infection rates, hospitalisations, and deaths. This information enables the identification of trends in transmission and the pinpointing of geographical hotspots. This enables a data led ongoing titration of the health system response both provincially and locally in keeping with emerging patterns of transmission.

Surveillance indicators for response

The Epidemiology and Surveillance team have explored and unpacked various indicators to guide response to the fourth wave. The following warning indicators (Table 3) will be used in the interest of being able to easily assess and respond to increasing COVID-19 transmission. However, many of the first and second warning indicators for the third wave were based on case numbers only which may not result in increased hospital admission service pressure due to protection from relatively high vaccine coverage of those ≥ 50 years and will no longer. While we will continue to monitor case metrics, these will not trigger restrictions or expansion of hospital capacity, which will only be triggered by increases in hospital service pressure.

Table 3 Indicators of increasing COVID-19 transmission and expected increase in service demand and recommended actions

Indicator	Resurgence Metric	Recommended action
<p>First warning indicator: Increase in health service demand expected in 14-21 days.</p> <p>(Note: Metrics in italics will only trigger public messaging about the increase in cases, increased genomic surveillance and further promotion of first time and booster vaccination as per national guidelines.)</p>	<p>Hospital service pressure metrics</p> <ul style="list-style-type: none"> • >10% of beds occupied by COVID-19 patients • >50% increase in pre-COVID-19 baseline of oxygen consumption by hospitals (>18.3 tons per day) for ≥3 days <p><i>Case-based metrics</i></p> <ul style="list-style-type: none"> • <i>Large week-on-week increase in the incidence of cases (increase in 7day moving average for ≥ 1week of ≥ 20%) and moderate case numbers (200-300 new cases/day)</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Moderate week-on-week increase in the incidence of cases (increase for ≥ 1week of ≥ 10%) when case numbers already high (>300 new cases per day)</i> <p>OR</p> <ul style="list-style-type: none"> • <i>Facility-based PCR test positivity >15%</i> • <i>Overall 7 day moving average of PCR test positivity >7% for >1 week</i> 	<ul style="list-style-type: none"> • Strong public messaging about increasing cases and the need for stricter NPI adherence, including customised messages for local areas/suburbs on local case numbers. • Publish ceilings of second warning hospital service pressure indicators with restriction expectations if breached. • Notification of mobilization of resources needed to support a substantial surge: <ul style="list-style-type: none"> ○ Expand acute hospital general COVID-19 beds by 30% of maximum wave 2 peak beds (to 545 beds) by decreasing non-urgent OPD visits. ○ Expand acute hospital critical care COVID-19 beds to 30% of maximum wave peak beds (to 37 beds) by decreasing elective surgery to 80% of usual capacity. ○ Expand intermediate beds to 50% capacity (minimum 250 beds). ○ Ensure equitable spread of patients across hospitals: temporarily shift referral paths diverting acutely ill patients away from hospitals with >10% of COVID-19 patients to those with <10% COVID-19 patients. ○ Utilise private sector EMS transport as required. ○ Further increase each type of COVID-19 beds (acute, critical, intermediate) if bed occupancy of designated COVID-19 beds increases beyond 80% for 3 days in a row. ○ Alert oxygen production company about need to increase supply and transport. ○ Refill oxygen tanks every second day/as required. • Further drive the increased rate of first time and booster vaccinations as per national guidelines in the general population and healthcare worker cohort, as far as possible. • Targeted sequencing of virus from areas driving increases in case incidence. • Recommend restrictions: gatherings, curfew, travel (see below).

<p>Second warning indicator. Increase in health service demand expected in 7-14 days.</p>	<p>Hospital service pressure metrics</p> <ul style="list-style-type: none"> • >20% of beds occupied by COVID-19 patients • >15% week-on-week increase in 7 day moving average of current admissions • >75% increase in pre-COVID-19 baseline of oxygen consumption by hospitals (>21.4 tons per day) for ≥3 days • >10% week-on-week increase in 7 day moving average of current admissions. <p><i>Case-based and testing metrics</i></p> <ul style="list-style-type: none"> • Overall PCR test positivity (7 day moving average) >15% • 7 day moving average of new cases is >10% more than the 40-day moving average of new cases for ≥ 14 consecutive days if the 40 day moving average is > 10 new cases/week/100,000 (100 new cases per day) • Testing numbers approach 80% of maximum capacity • Testing Turnaround time (TAT) is >24 hours for urgent cases (those requiring hospitalisation) and >48 hours for non-urgent cases for 2 consecutive days in conjunction with 	<ul style="list-style-type: none"> • Strong public messaging about increasing cases and the need for stricter NPI adherence. Expand customised local messages to affected suburbs/areas. • Publish ceilings of third warning hospital service pressure indicators with restriction expectations if breached. • Limiting testing numbers via stricter testing criteria. • Mobilization of resources needed to support a substantial surge within 7 to 14 days: <ul style="list-style-type: none"> ○ Expand acute hospital general COVID-19 beds to 60% of maximum wave 2 peak beds (to 1090 beds) by further decreasing non-urgent OPD visits. ○ Expand acute hospital critical care COVID-19 beds to 60% of maximum wave 2 peak beds (to 75 beds) by decreasing elective surgery to 70% of usual capacity. ○ Expand intermediate beds to 100% capacity (500 beds). ○ Ensure equitable spread of patients across hospitals: temporarily shift referral paths diverting acutely ill patients away from hospitals with >10% of COVID-19 patients to those with <10% COVID-19 patients. ○ Utilise private sector EMS transport as required. ○ Further increase each type of COVID-19 beds (acute, critical, intermediate) if bed occupancy of designated COVID-19 beds increases beyond 80% for 3 days in a row. ○ Alert oxygen production company about need to maximise supply and transport. ○ Refill oxygen tanks daily. • Continue to increase rate of vaccination and conduct targeted sequencing of virus as above. • Recommend further restrictions: gatherings, curfew, travel (see below).
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Table 3 Indicators of increasing COVID-19 transmission and expected increase in service demand and recommended actions

Indicator	Resurgence Metric	Recommended action
	increased new cases and test positivity >5%	
Third warning indicator. Increase in health service demand expected in 2-7 days.	<ul style="list-style-type: none"> See "4: Titrate health platform COVID-19 capacity" below for details 	<ul style="list-style-type: none"> See "4: Titrate health platform COVID-19 capacity" below for details
Health service capacity close to overwhelmed	<ul style="list-style-type: none"> See "4: Titrate health platform COVID-19 capacity" below for details 	<ul style="list-style-type: none"> See "4: Titrate health platform COVID-19 capacity" below for details

It is important that the above case-based surveillance indicators provide relative guidance as to epidemic progression but with increasing vaccine coverage should be viewed in relation to hospital-based indicators. Case-based indicators can be monitored for context but response in terms of restrictions should only be instituted if hospital-based indicators start to rise. In relation to this, based on the SA Modelling Consortium fourth wave scenarios, the probability that hospital indicators will be met in the context of relatively high vaccine coverage in the elderly population and high levels of prior infection in the population is seen to be very low. That is with the assumption of limited further viral evolution and the non-development of a variant with significant immune escape from the current COVID-19 vaccines.

Shifting the emphasis from contact tracing to severe disease support

The utility of contact tracing as a means of mitigating transmission and spread, particularly in a context of natural population immunity from three previous waves as well as the presence of high vaccine coverage is unclear and does not provide a sufficient benefit in terms of epidemic containment to justify the resources required. Given the concurrent financial pressures going forward, we need to ensure value adding and cost-effective interventions are prioritised. Having come through three waves of COVID-19 and ensuring adequate communication regarding isolation and quarantine of contacts we will rely on patient agency for those that are vaccinated and get mild symptoms of COVID-19. The subsequent resources that are freed up may be pivoted towards supporting patient families of those that are hospitalized by providing adequate communication between care providers, patients and their families as well as limited contact tracing for exposed family members that have not been vaccinated as yet.

Contact tracing may still be effective in cluster case scenarios of an epidemic or in high-risk settings such as old-age homes, prisons and closed workplaces. In these scenarios the application of contact process may still be appropriate.

Regardless of the approach employed the province’s contact centre has been identified as a key component of ensuring adequate additional capacity for this arm of support during the fourth wave.

Testing

The current available testing capacity for COVID-19 diagnostic purposes continues to be maintained at approximately 30, 000 PCR tests per week in the Public Sector. During the current inter-wave period the public sector is performing approximately 8,000-10,000 COVID-19 PCR tests and there are sufficient testing kits and resources available to accommodate this need. At this point in the epidemic, it is important to acknowledge the limited value of on-going widespread testing of cases. This, coupled with the costs associated with each PCR test, shifts the focus to hospital-based PCR testing and outpatient antigen testing as required. This ensures adequate use of resources whilst maintaining sufficient ability to continue hospital-based surveillance of confirmed COVID-19 cases.

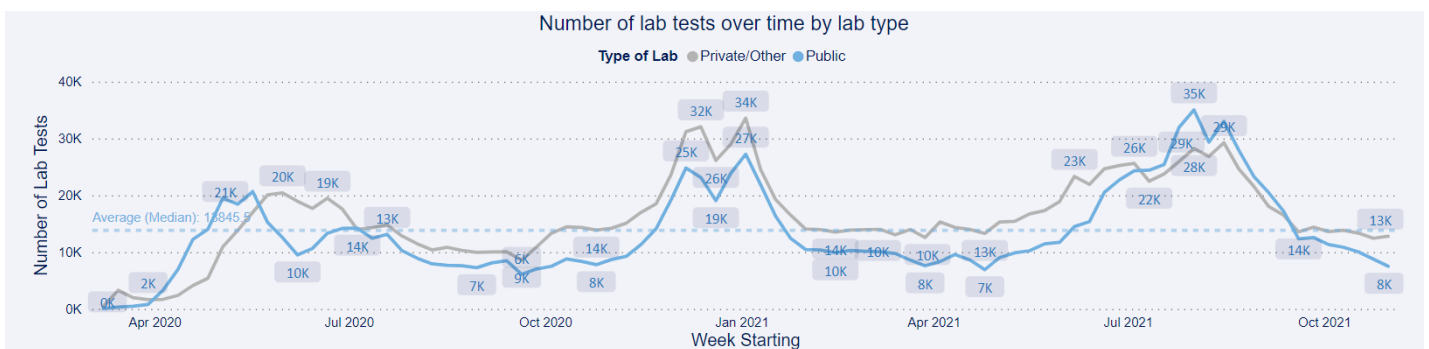


Figure 17: Number of COVID-19 lab tests over time by week and by sector

There is a surveillance and testing advisory group (STAG) comprising of technical experts from, amongst others, public health, virology, and infectious disease clinicians. The group constantly reviews the criteria for testing in keeping with the emerging patterns of transmission and risks as well as the capacity of the whole health ecosystem required for testing. This includes swabbing, staff levels, logistics including transport of specimens, laboratory capacity, and supply of reagents.

Part of the expansion of available testing capacity has been the introduction and scale-up of rapid antigen testing. This has brought about significant value in terms of substantially reduced cost and rapid turnaround of results and is particularly useful during testing in high-risk congregate settings in which there is a concern of localized outbreaks occurring. In addition, it provides value in terms of rapidly managing the movement of COVID-19 patient cohorts that are under investigation and require admission to segregated wards. It is important to note that antigen tests do have lower sensitivities compared to SARS-CoV-2 PCR testing and the latter still remains as the gold standard test methodology particularly for hospitalized patients. In addition,

since antigen tests are done at point of care with no automatic laboratory electronic record of results, there have been some challenges experienced in terms of reporting of these results for oversight, outbreak management and surveillance. The heterogeneity across sites in terms of reporting patterns may confer potential bias toward positive results as opposed to all results and in order to encourage the use of PCR tests, the province no longer requires reporting of negative test results as this can be burdensome especially outside of wave periods. We will therefore only use the proportion of positive PCR tests as a surveillance metric, as recorded antigen tests will be strongly biased towards positive results. Nonetheless, we continue to reinforce the importance of this as a testing tool as well as have all positive results adequately reported on via the appropriate portals.

The testing approach can be seen summarized in Table 4 below:

Table 4: Summary of Testing Approach

Testing during interwave period	<ul style="list-style-type: none"> - Shift to Antigen testing primarily - Test all symptomatic patients and isolate those who test positive - Test asymptomatic people only for outbreak control within congregate settings
Testing during the fourth wave	<ul style="list-style-type: none"> - Restrict testing to those at high risk of severe disease (elderly, comorbidities, those admitted) - Mix of PCR and Antigen testing

Quarantine & Isolation

While all positive cases should isolate, and all contacts of a confirmed case should quarantine to limit the spread of the virus and protect vulnerable individuals, in the context of high population sero-prevalence from previous infection and vaccine coverage provision of quarantine and isolation facilities and case and contact tracing to ensure isolation and quarantine is likely to yield limited value for the resources required. The experience from previous waves also showed poor uptake by communities despite a significant investment in provision of facilities. Quarantine and isolation requirements will be communicated on diagnosis but rely on patient agency to ensure adequate and appropriate action occurs with limited provision of state and/or private facilities.

Outbreak Response Teams

Decentralised outbreak response teams within sub districts are the primary agents to respond to local high-risk outbreaks, including those in high-risk settings such as old age homes and schools as well as those attributed to super spreader events. They work in conjunction with a range of other stakeholders including the Provincial Epidemiology and Surveillance teams as well as the local Joint Operation Committee and hotspot teams. These local teams are also supported from the centre with the provision of data and additional call centre capacity.

3 Support and maintain the mass vaccine campaign

Background

Vaccinations are considered one of the most cost-effective public health interventions and are key to the primary prevention of infectious diseases such as COVID-19. Individuals who receive any of the COVID-19 vaccines will develop an immune response and be protected from severe disease, hospitalization, and death. A successful and

Age Group	Total Adult Population [18 Years & Older]	Total Number of Individuals Vaccinated	Individuals Vaccinated as a % of the Adult Population
18-34 Years	2,057,781	734,037	35.67%
35-49 Years	1,511,813	764,222	50.55%
50-59 Years	684,149	406,637	59.44%
60+ Years	723,160	500,437	69.20%
Unidentified	0	259	0.00%
Total	4,976,903	2,405,592	48.34%

Figure 18: Population coverage of COVID-19 vaccinations by age for at least 1 dose

continued COVID-19 vaccination programme would, therefore, be pivotal in ensuring that we reduce the impact of any future COVID-19 waves on the citizens of the Western Cape. This programme needs to, as far as possible, continue throughout the pandemic to limit the impact on those most at risk of severe disease. As of 13th November 2021, the Western Cape had administered a total of 3,878,768 doses to a total of 2,405,592 individuals. Population coverage, to date, differs across the various age bands with the highest coverage being in the >60 year age band at 69.2% for all individuals who have received at least 1 dose (Figure 18).

Strategic Focus and Aim

The provincial strategy for the vaccine programme has a three-pronged approach as follows:

- **Promoting Equity**
 - Achieved by:
 - Increasing access to registration and vaccination sites
 - Increasing community-level interventions
 - Targeting certain identified geographic areas
- **Demand Creation**
 - Achieved by:
 - Retaining focus on >50 years as the most vulnerable population group
 - Neutralising misinformation and strengthening pro-vaccine trusted voices
 - Targeting Business, Government & Civil Society with specific daily targets

– Targeted Approach

– Achieved by:

- Focusing on **geographic areas** with low vaccine uptake
- Maximising reach and efficiencies through **increased outreach** services and **pop-up** sites
- **Rationalise and retain** fixed vaccination sites with high throughput and **where appropriately placed**

Vaccine Program Progress

The Western Cape’s vaccination programme has been, from the outset, aligned to the national approach of a phased implementation with prioritization initially for healthcare workers and thereafter for citizens stratified according to age and risk. The experience thus far has been of increased demand during opening of age band cohorts with subsequent waning of demand thereafter. By November, all age band groups have been allowed to access their vaccination, including children aged 12-17 years old. The cumulative total of vaccines administered can be seen in Figure 19 below.

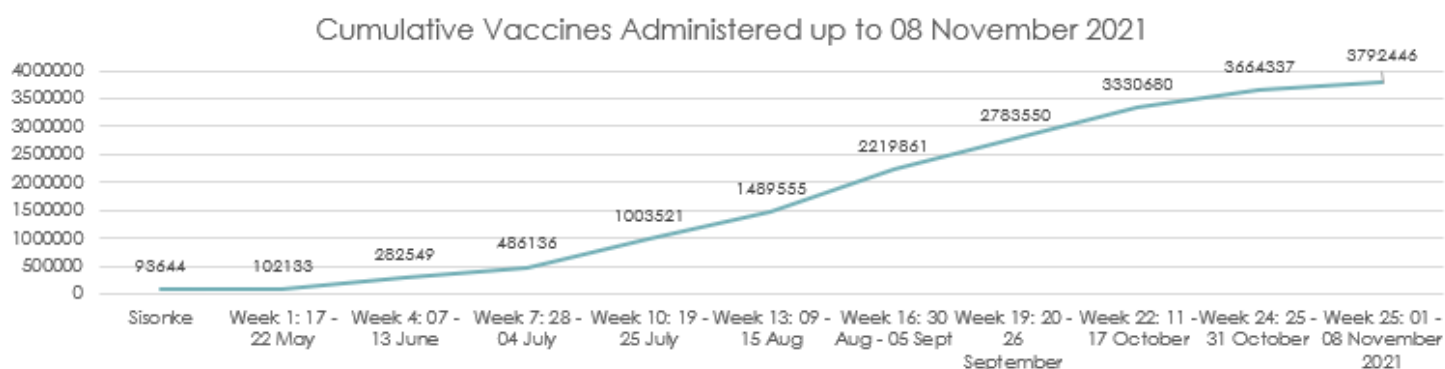


Figure 19 Cumulative number of vaccines administered by week

Phase 1/Sisonke Clinical Trial

The Phase 1 vaccination programme was facilitated as part of a national clinical effectiveness trial lead by the SA-MRC and known as the Sisonke Trial. This trial ran from the 17th February 2021 to the 15th May 2021, with an interim pause in April to review the protocol as evidence emerged regarding rare blood clots as a possible side effect. The Western Cape received a total 95 880 doses of the Johnson and Johnson’s Janssen vaccine to vaccinate healthcare workers as part of the Sisonke Programme. Phase 1b to mop up remaining healthcare workers had commenced on the 17th May 2021 in parallel with the launch of Phase 2.

Phase 2/National Vaccine Programme

Phase 2 commenced on the 17th May 2021 and had overlapped with the vaccination of the remaining healthcare workers who have not been vaccinated as part of the Sisonke Programme.

Social mobilization in partnership with other departments, sectors and civil society was and continues to be a key part of this phase to increase demand for vaccines. Phase 2 required a massive scale up of operations and additional sites to come online weekly. The National Vaccine Programme largely utilizes the 2 dose Pfizer vaccine with J&J vaccines given to certain groups based on supply and need. Importantly, citizens can access vaccines regardless of sector and income bracket at all sites and no fees for the vaccine itself will be expected from citizens at point of administration. The collaboration between the public and private sector has been a vital component in order to ensure adequate coverage of the largest vaccine programme in the province.

All sites have agreed to leverage the national EVDS system ensuring adequate oversight and governance of vaccine administration and equity across both the public and private sector. With the utilization of the system there is a need to have patient-level information from the system accessible at a provincial and sub-district level. Initial access had been provisioned allowing adequate titration of a local response according to need. Access to this data has subsequently been rescinded and has blinded the province as to a granular understanding of the vaccine programme. This has limited its ability to target areas with low uptake and address issues of vaccine misinformation rife in certain areas. The province waits, in anticipation, for reinstatement of access to data for vaccines that have been administered in the province, in keeping with its role as a health service provider and curation of electronic health records by the province of all medications dispensed to public sector patients. Lack of access to this key service provision data will likely result in an inadequate ability to effectively protect the vulnerable population from the effects of the fourth wave.

Sisonke II:

The Sisonke 2 programme is being conducted as a Phase 3b implementation study and healthcare workers will be required to provide informed consent indicating that they agree to participate in this phase of the study. Implementation commenced on 10 November 2021 at selected vaccination sites. As on 25 November 2021, 43 516 healthcare workers in the Western Cape had received a J&J booster dose.

All eligible HCWs who opt out of Sisonke 2 as well as HCWs who were vaccinated with J&J after 17 May 2021, will be able to access a Pfizer booster dose once all necessary approvals have been granted by SAHPRA and NDoH.

Impact of the fourth wave on the mass vaccine programme

The province has trained internal and additional staff to support the mass vaccination campaign. While every effort will be made to ensure that high levels of vaccine coverage are achieved before a fourth wave, especially amongst the most vulnerable, we will aim to maintain the rate and delivery of COVID-19 vaccines

as far as possible if needed throughout any resurgence and fourth wave. This will include delivery of booster vaccines should these be indicated. Since vaccines are the cornerstone of mitigating the impact of disease severity, the programme needs to be protected and allowed to continue through the fourth wave.

4

Titrate health platform COVID-19 capacity

Central to point 4 of the resurgence strategy is a health platform that is agile, and able to expand and contract in line with the COVID-19 care demand. This means that at times of high COVID-19 demand other health services will have to be scaled down; this is particularly true in the context of hospital bed availability. This agility is enabled not only by flexible infrastructural arrangements but also evidence informed, data led decision-making. The Department has embraced a geographic based approach and the COVID-19 care continuum is thus organized accordingly with aligned governance arrangements, see Table 5. Senior managers have twice weekly huddles during the waves, with daily operational huddles on the Primary Health Care (PHC) and hospital platforms.

Table 5: COVID care continuum governance arrangements

District Teams	
Cape Winelands District	Dr. L. Phillips together with her management team to co-ordinate PHC services for COVID-19
Central Karoo & Garden Route Districts	Mr. Z. Brickles together with his management team to co-ordinate PHC services for COVID-19
Overberg District	Ms. W. Kamfer together with her management team to co-ordinate PHC services for COVID-19
West Coast District	Ms. C. Bester together with her management team to co-ordinate PHC services for COVID-19
Khayelitsha/Eastern Sub-structure	Mr. J. Kruger together with his management team to co-ordinate PHC services for COVID-19
Klipfontein/Mitchell's Plain Sub-structure	Ms. P. Olckers together with her management team to co-ordinate PHC services for COVID-19
Northern/Tygerberg Sub-structure	Dr. M. Phillips together with her management team to co-ordinate PHC services for COVID-19
Southern/Western Sub-structure	Dr. K. Grammer together with her management team to co-ordinate PHC services for COVID-19
Hospital Teams	
City of Cape Town District	Dr. Perez together with the relevant sub-structure and hospital managers to co-ordinate inpatient services for COVID-19 in this area
George hospital geographical area	The rural Chief Director together with the hospital CEOs and relevant district managers to co-ordinate the inpatient services for COVID-19 in this area
Paarl hospital geographical area	The rural Chief Director together with the hospital CEOs and relevant district managers to co-ordinate the inpatient services for COVID-19 in this area
Worcester hospital geographical area	The rural Chief Director together with the hospital CEOs and relevant district managers to co-ordinate the inpatient services for COVID-19 in this area

Data and Surveillance to support titration of health platform COVID-19 capacity

Aligned to the surveillance triggers for the fourth wave, the health platform requires specific triggers in order to respond and adjust its capacity and escalation/de-escalation plans according to the trajectory, severity and impact of the fourth wave as well. This is summarized in Table 5 below.

Table 6: Indicators of increasing COVID-19 transmission and expected increase in service demand and recommended actions

Indicator	Resurgence Metric	Recommended action
<p>Third warning indicator: Increase in health service demand expected in 2-7 days.</p>	<p>Hospital service pressure metrics</p> <ul style="list-style-type: none"> • >20% week-on-week increase in 7 day moving average of current admissions. • >50% bed occupancy of available high care, intensive care and high flow nasal oxygen COVID-19 beds. • COVID-19 patients occupy >30% of beds • >100% increase in pre-COVID-19 baseline of oxygen consumption by hospitals (or >24.4 tons per day) for ≥ 3 days. 	<ul style="list-style-type: none"> • Strong public messaging about increasing cases and the need for stricter NPI adherence. • Publish potential increase of restriction expectations should systems be overwhelmed. • Active mobilization of resources needed to support a substantial surge within 2 days: <ul style="list-style-type: none"> ○ Expand acute hospital general COVID-19 beds to 100% of maximum wave 2 peak beds (to 1820 beds) by strictly decreasing non-urgent OPD visits. ○ Expand acute hospital critical care COVID-19 beds to 60% of maximum wave 2 peak beds (to 125 beds) by decreasing elective surgery to 60% of usual capacity. ○ Increase intermediate beds to >100% of capacity (>500 beds) if possible. ○ Ensure equitable spread of patients across hospitals: temporarily shift referral paths diverting acutely ill patients away from hospitals with >10% of COVID-19 patients to those with <10% COVID-19 patients. ○ Utilise private sector EMS transport as required. ○ Further increase each type of COVID-19 beds (acute, critical, intermediate) if bed occupancy of designated COVID-19 beds increases beyond 100%. ○ Divert patients to private sector hospitals where possible. ○ Alert oxygen production company about need to truck in supply and transport to hospitals more frequently. ○ Refill oxygen tanks daily or twice daily if tanks drop <50% capacity during same day after being filled. ○ Expand mass fatality centre capacity incrementally when it reaches >50% usage per day. • Continue to increase rate of vaccination and conducted targeted sequencing of virus as above. • Recommend further restrictions: gatherings, curfew, travel, alcohol (see below).

<p>Health service capacity close to overwhelmed</p>	<p>Hospital service pressure metrics</p> <ul style="list-style-type: none"> • A sustained increase of probable/confirmed cases needing hospital admission (as per first, second and third warning indicator) • Absolute current COVID-19 hospitalization >2800 • BUR % for designated COVID-19 general beds >70% in a district/province • BUR % for designated COVID-19 critical care beds (High care, intensive care and high flow nasal oxygen) >80% • Oxygen consumption/supply >200% baseline pre-COVID-19 reference level (or >36.6 tons/day) 	<ul style="list-style-type: none"> • Additional recommended actions: <ul style="list-style-type: none"> ○ Publish increased expectations for additional restrictions ○ Advocate for urgent restrictions to be put in place in terms of gatherings, curfew, travel, and complete alcohol ban • Continue maximal expansion COVID-19 beds • Continue restricting non-urgent OPD services and non-urgent admissions • Maintain daily governance structures to ensure maintenance and equity of the service platform pressures • Continue leveraging EMS capacity to evenly spread the COVID-19 burden across the service platform • Ensure and maintain adequate oxygen supply from supplier to all COVID-19 facilities
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PHC

The focus on the Primary Health Care (PHC) platform remains primary and secondary prevention which includes screening; educating communities about the virus; and enabling protective behaviours. The platform will ensure access to COVID-19 antigen testing for symptomatic patients, including triage and support for self-management or appropriate referral for those with more severe symptoms. As the numbers of confirmed COVID-19 cases increase, the PHC teams will advise younger patients with no co-morbidities to isolate and self-manage their likely mild illness, while avoiding contact with older people and people with co-morbidities, and particularly those not vaccinated as yet.

Inpatient Care

The surge in hospitalizations during the second wave has necessitated retaining the additional bed capacity created such as the Brackengate Intermediate Care facility, Freesia Ward attached to Mitchells Plain Hospital, Sonstraal Hospital, Hermanus Hospital, Vredendal Hospital and Harry Comay in George. In addition, hospitals are required to de-escalate their non-COVID-19 services to manage the additional COVID-19 demand. This is estimated to be between 30-40% of their operational bed capacity in general. The range of COVID-19 capacity provision per geographic area is shown in Table 6. These bed numbers are indicative and will be reviewed and nuanced at facility level in line with changes in the patterns of the epidemic and changes in local conditions on a daily basis. The capacity to de-escalate services is constrained by the increased trauma load fueled by the access to alcohol since the lifting of alcohol restrictions, as well as the urgency to attend to certain non-COVID-19 services for which a backlog was created in the response to the first, second and third wave.

Table 7: Acute COVID-19 bed capacity

City of Cape Town District Bed Capacity	810 – 1 078
George Drainage Area Bed Capacity	169 - 227
Paarl Drainage Area Bed Capacity	179 - 239
Worcester Drainage Area Bed Capacity	130 - 173

¹ Groote Schuur Hospital and Tygerberg Hospital are included in the City of Cape Town Drainage Area.

² The range of bed numbers are indicative of de-escalation between 30-40%.

The critical bed capacity for the province which includes intensive care beds and high care beds is managed on a day-to-day basis in keeping with the variable demand that flows through our doors, be it for COVID-19, trauma or non-COVID-19 conditions. In addition to the existing capacity of approximately 230 critical care beds (excluding maternity, neonatal, psychiatric and paediatric beds), an additional 135 beds were added to bolster critical care capacity during the second and third wave.

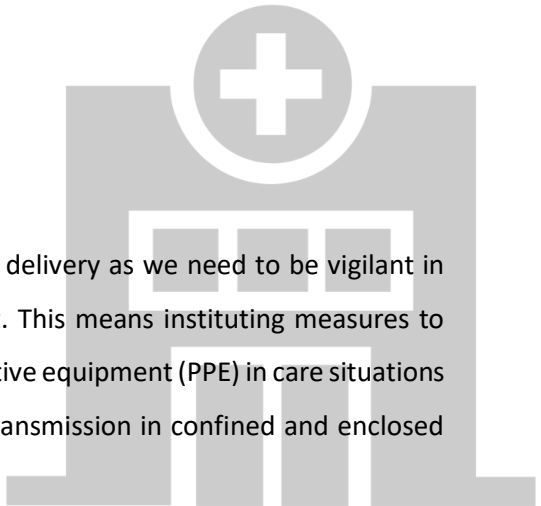
The services team have developed geographic and hospital-specific plans to expand COVID-19 bed capacity in a phased manner, with specific trigger points for each phase. Oxygen supply availability, required PPE, and additional staffing deployment are the key corporate support measures that will be instituted in line with the escalation plans. Much of the additional staff that were employed during the second and third wave, equating to a total of 1117 and 835 staff respectively, has been collectively retained and contracts extended until the end of March 2022. This ensures adequate healthcare worker capacity to manage the pressure of the vaccine programme and additional burden from COVID-19. The oxygen supply capacity has been significantly increased including HFNO and ventilator points increased from 262 in the first wave to 371 in the second wave to 414 for the third wave. Oxygen generating capacity increased from 50 Tons/day to 70 Tons/day and storage for cylinder filling capacity from 26.5 Tons to 62.5 Tons. The use of daily huddles to discuss optimal utilization of available bed capacity, is also a key coordinating mechanism in the different geographic areas.

Emphasis should be placed on the need by each institution to ensure adequate multi-disciplinary teams with sufficient palliative care training be in place. This is particularly important owing to the fact that there is an expected case and admission fatality rate with COVID-19, which often tends to worsen at peaks of waves when pressure on admission and access to ventilation in critical care increases.

The private hospital sector is also being engaged to ensure that adequate capacity exists to manage a fourth wave with the agility to de-escalate and manage increases equitably across the entire public and private platform.

5

Maintain comprehensive services



Maintaining comprehensive services requires the re-design of service delivery as we need to be vigilant in managing the risk of virus transmission within our built environment. This means instituting measures to prevent over-crowding within health facilities; utilizing personal protective equipment (PPE) in care situations where there is close contact; and measures to minimize the risk of transmission in confined and enclosed service delivery spaces that can't be avoided.

How we provide health care will need to accommodate these measures and thus the re-introduction of comprehensive care is premised on the re-design of the modes of health care delivery. While minimizing the risk for health workers means maintaining high standards of infection prevention control within the workplace. The re-introduction of low risk/ high impact services, such as immunizations, TB case detection and treatment, HIV testing and treatment, mental health counselling and treatment and elective surgery within acute hospitals has been prioritized over the past 3-6 months and will continue to be prioritized as far as possible going forward.

However, given our reality of a possible 4th wave, non-COVID-19 services may need to be downscaled again to minimize the risk of exposure and to create capacity on the delivery platform to meet the demands of the epidemic. This is done in a stepwise fashion: stopping all planned expansion of non-COVID-19 services; actively de-escalating non-COVID-19 services and titrating the response as per the trigger points highlighted above.

The key non-COVID-19 service challenge is the impact of alcohol-related trauma on emergency centres, in-patient ward and critical care capacity. The Department has implemented a Sentinel Trauma Report since April 2020, which has tracked the direct impact of the various levels of the alcohol ban and subsequent restrictions, on trauma cases in 4 emergency centres where the HECTIS application has been implemented. The number of HECTIS sites has now been increased to 17. This will continue to be monitored as a means of rapidly freeing up capacity through upstream policy should the health service platform become completely overwhelmed in a severe 4th wave.

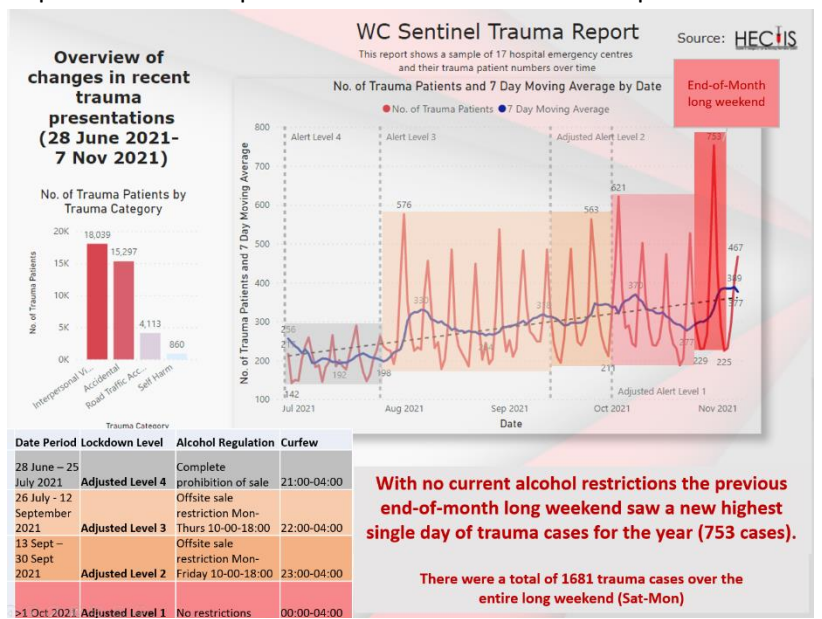


Figure 20: Trauma presentations to emergency centres (WC Sentinel Trauma Report)

6 Safeguard & protect the well-being of health care workers

As at the 12th November 2021, a total of 12,935 known health care workers have been infected since the start of the epidemic in the Western Cape. Of these, 12,703 have recovered and 9 are currently active. A total of 202 health care workers have sadly passed on from COVID-19.

Employee Safety

Employee safety is key to a resilient health system in the face of an epidemic and thus the department has developed a strategic framework for employee safety, see figure 22. Interventions include the following:

- The Occupational Health & Safety Policy has been revised.
- Relationships with organized labour especially at the provincial level have been strengthened through a regular engagement where information is shared, and issues frankly discussed.
- The National Institute of Occupational Health (NIOH) has undertaken an occupational health and safety (OHS) verification audit of public and private facilities and this will form an important basis to improve and strengthen OHS.
- The number of COVID-19 infected health care workers (HCWs) across the province is monitored daily
- An Occupational Health information system from NIOH is in the process of being procured and implemented.
- Occupational Health Governance arrangements have been strengthened by the establishment of a technical committee which includes members of organized labour, People Management and occupational health academics and is chaired by the Chief Director: Infrastructure.
- The province is also represented on a national OHS committee.
- The Department has developed an electronic tool that combines data from various inventory management systems like MEDSAS, SYSPRO & LOGIS to track stock availability of PPE across the Province down to facility level. Recent reports indicate that there is adequate PPE stock.
- The Department has created a learning collaborative with the aim of ensuring a healthy and functional workforce that is emotionally strong, with zero virus transmission between health workers and staff absenteeism of less than 10%.

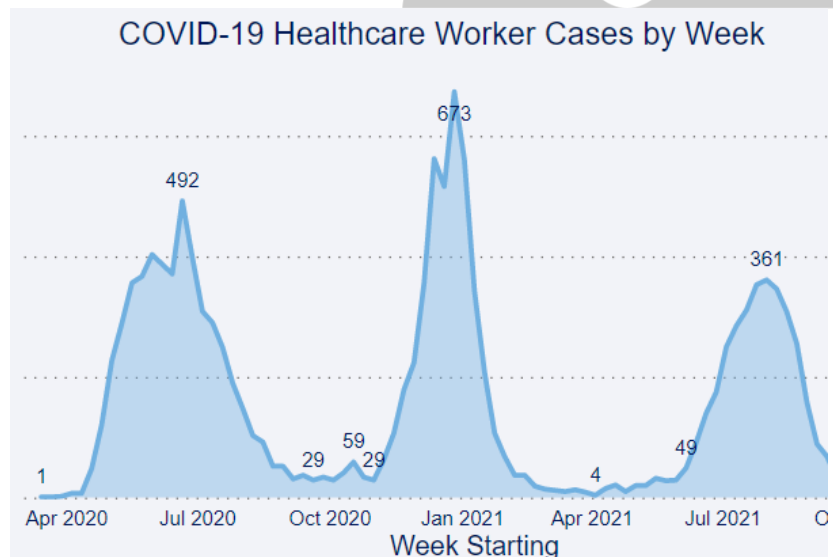


Figure 21: Health Care Worker Infections over time





Figure 22: Strategic Framework for Employee Safety

Employee Health and Well-being

COVID-19 has had a profound impact on the mental and physical health of all people, including our employees. Our Employee Health and Wellness Programme (EHWP) includes interventions to address these impacts and is informed by the National Department of Health policy, Psychosocial Support for Health Workers during the COVID-19 Response. There are 3 components to the service available to employees, which includes preventive interventions; supportive interventions like psychological first aid for those employees who are symptomatic; and appropriate treatment and referral as required. The Department is committed to ensuring there is adequate support for employees who are struggling with the impact of the COVID-19 epidemic.

Employee Wellness post vaccine implementation

A key advantage in terms of preparation for the fourth wave is that the large majority of healthcare workers in the province have received their single dose J&J COVID-19 vaccine. This will, undoubtedly, stand us in good stead as we enter a potential fourth wave with better physical and psychological resilience to weather another wave for those that have received their vaccine. It is important to acknowledge, though, that adequate PPE still needs to be maintained and complacency should not prevail as breakthrough infections can and have been occurring and no vaccine is 100% effective. The Sisonke 2 Trial has also commenced and encourages healthcare workers who have received their JnJ vaccine through the initial trial to return for a booster dose prior to the onset of the fourth wave. This will ensure limited transmission in the face of potential waning from the initial regimen.

Conclusion

This fourth wave resurgence plan is a dynamic and deeply collaborative effort to consolidate our preparedness as a province. The health system's response to resurgence requires agility and adaptiveness and needs to be data led and evidence informed in all aspects from communication through to COVID-19 health platform titration. Local management teams can and should adjust their response, aligned to the strategies outlined above, and in accordance with their local context to ensure relevance, appropriateness, and an adequate response to a potential COVID-19 fourth wave. The resurgence plan should be seen in a context of recovery and reset of the transformation agenda in the medium to long term as we try to mainstream the health system response to COVID-19 given its likelihood of it becoming an endemic condition.