

COVID-19 HOSPITAL SURVEILLANCE UPDATE: WEEK 48, 2021

Overview of report

This report summarises data of COVID-19 cases admitted to DATCOV hospital surveillance sites in all provinces. The report is based on data collected from 5 March 2020 to 4 December 2021.

Highlights

- As of 4 December 2021, 440,787 COVID-19 admissions and 94,720 in-hospital deaths were reported to DATCOV from 665 facilities (407 public-sector and 258 private-sector) in all nine provinces of South Africa.
- There has been an increase in weekly COVID-19 admissions in Gauteng in both private and public sectors. The increase in admissions was first observed in City of Tshwane Metro in week 45 and in all other Gauteng districts in week 46. There has also been an increase in admissions in North West, Mpumalanga, Limpopo and Eastern Cape provinces since week 46, and in Free State, KwaZulu-Natal and Western Cape since week 47.
- In Gauteng, 9% of all admissions in the last three weeks were in children younger than 5 years. However, this trend is changing and the proportion of admissions in children younger than 5 years has decreased from 14% (week 46) to 11% (week 47) to 8% (week 48).
- In City of Tshwane Metro, from 14 November-8 December 2021, 1,633 admissions and 39 deaths were reported from the public and private health sectors. Among patients who already had a hospital outcome and were no longer still in hospital, during the early second wave 66% of COVID-19 admissions were severe, during the early third wave 67% were severe, and during the early fourth wave, 31% were severe. It must be noted that severity data has several limitations at the early phase of the wave when numbers are small, mild patients are more likely to be admitted as a precaution, patients are diagnosed with SARS-CoV-2 incidentally when admitted for other reasons, and because there has not been sufficient follow-up time for severity and outcomes to have accumulated.



Methods

Data on hospitalisation was accessed from DATCOV, a hospital surveillance system for COVID-19 admissions, initiated on the 1 April 2020. A COVID-19 case was defined as a person with a positive reverse transcriptase polymerase chain reaction (RT-PCR) assay for SARS-CoV-2 or a person who had a positive SARS-CoV-2 antigen test who was admitted to hospital.

Data on SARS-CoV-2 cases diagnosed in public and private laboratories submitted to the NICD were reported from the line list on the NMCSS.

Case fatality ratio (CFR) was calculated for all closed cases, i.e. COVID-19 deaths divided by COVID-19 deaths plus COVID-19 discharges, excluding individuals who are still admitted in hospital. For the calculation of cumulative incidence risks, StatsSA mid-year population estimates for 2020 were utilised. For comparisons of change in admission, we used 14-day daily average admissions in the current 14-day period compared to the previous 14-day period.

Severity was defined as patients receiving oxygen or invasive ventilation, treated in high care or intensive care wards, developing acute respiratory distress syndrome, or died. While oxygen, ventilation and ward of stay variables are updated daily for all admissions in the private sector, there may be delays with the data being updated in the public sector. Also, as patients remain in hospital their condition may change and percentage of severity may change over time.

Data are submitted by public and private hospitals that have agreed to report COVID-19 admissions through DATCOV surveillance in all nine provinces of South Africa. On 15 July 2020, the National Health Council decided that all hospitals should report to DATCOV. As of 4 December 2021, a total of 665 facilities submitted data on hospitalised COVID-19 cases, 407 from public sector and 258 from private sector (Table 1). This reflects 100% coverage of all public and private hospitals that have had COVID-19 admissions. As new hospitals join the surveillance system, they have retrospectively captured all admissions recorded although there may be some backlogs in retrospective data capture.



Table 1: Number of hospitals reporting data on COVID-19 admissions by province and sector, South Africa, 5 March 2020-4 December 2021.

Facilities reporting	Public	Private
Eastern Cape	86	18
Free State	35	20
Gauteng	40	94
KwaZulu-Natal	69	47
Limpopo	41	7
Mpumalanga	31	9
North West	17	13
Northern Cape	29	6
Western Cape	59	44
South Africa	407	258

Results

Epidemiological and geographic trends in admissions

From 5 March 2020 to 4 December 2021, a total of 440,787 COVID-19 admissions were reported from 665 facilities in all nine provinces of South Africa. South Africa experienced three waves of the COVID-19 pandemic. There has been an increase in admissions in both sectors since week 45 of 2021 (Figure 1).

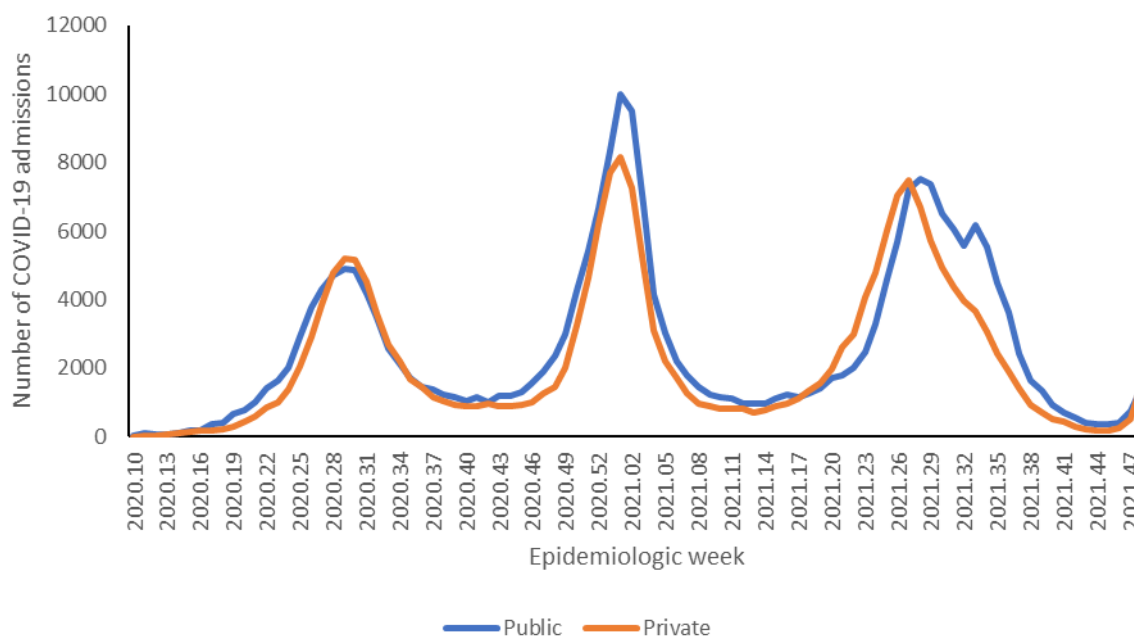


Figure 1: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, South Africa, 5 March 2020-4 December 2021, N=440,787



The majority of admissions were recorded in four provinces, Gauteng 128,652 (29%), Western Cape 98,589 (22%), KwaZulu-Natal 70,245 (16%) and Eastern Cape 41,611 (9%) provinces. The weekly COVID-19 admissions have increased in Gauteng since week 45 (Figures 2a and 2b).

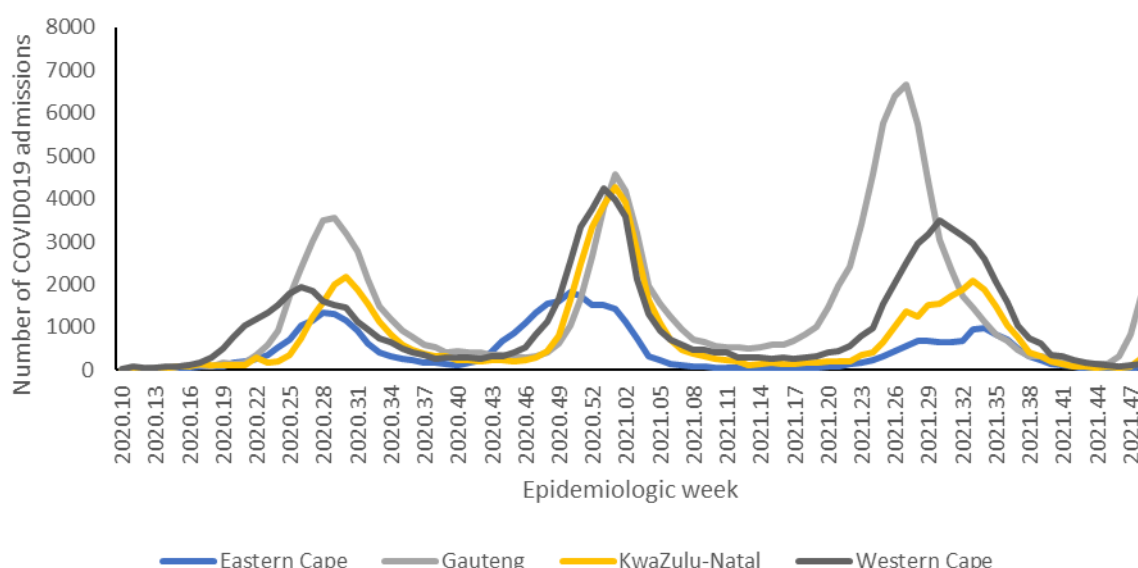


Figure 2a: Number of reported COVID-19 admissions, by provinces with highest admissions and epidemiologic week of diagnosis, South Africa, 5 March 2020-4 December 2021, N=440,787

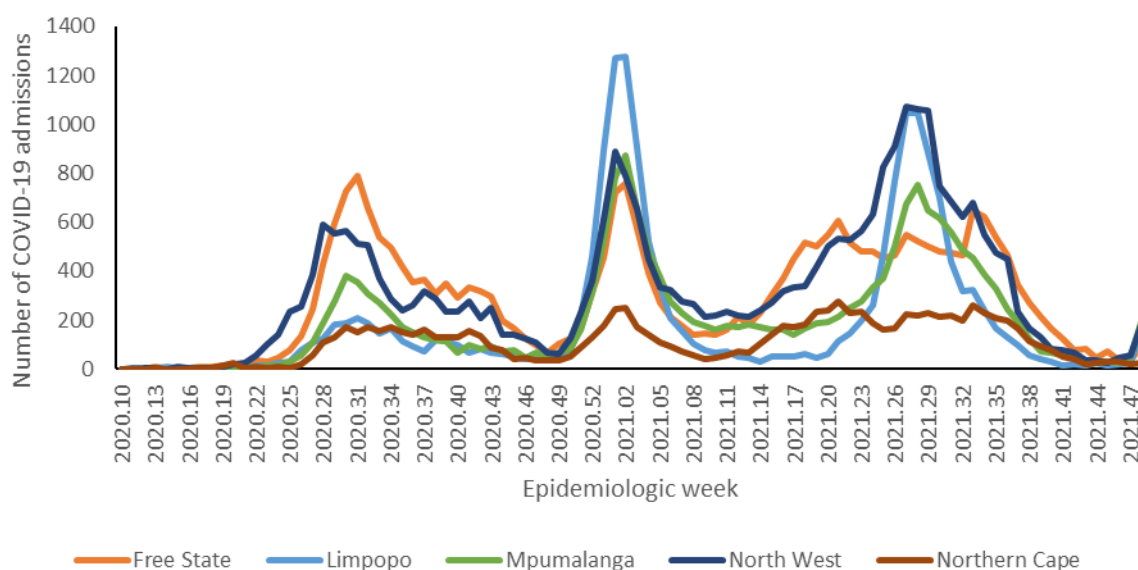


Figure 2b: Number of reported COVID-19 admissions, by provinces with lowest admissions and epidemiologic week of diagnosis, South Africa, 5 March 2020-4 December 2021, N=440,787





Epidemiological and geographic trends in in-hospital mortality

A total of 94,720 COVID-19 in-hospital deaths were reported in all nine provinces of South Africa. More deaths have been reported in the public sector in all three waves. There has been a sustained decrease in in-hospital COVID-19 deaths in both sectors since the third wave peak (Figure 3).

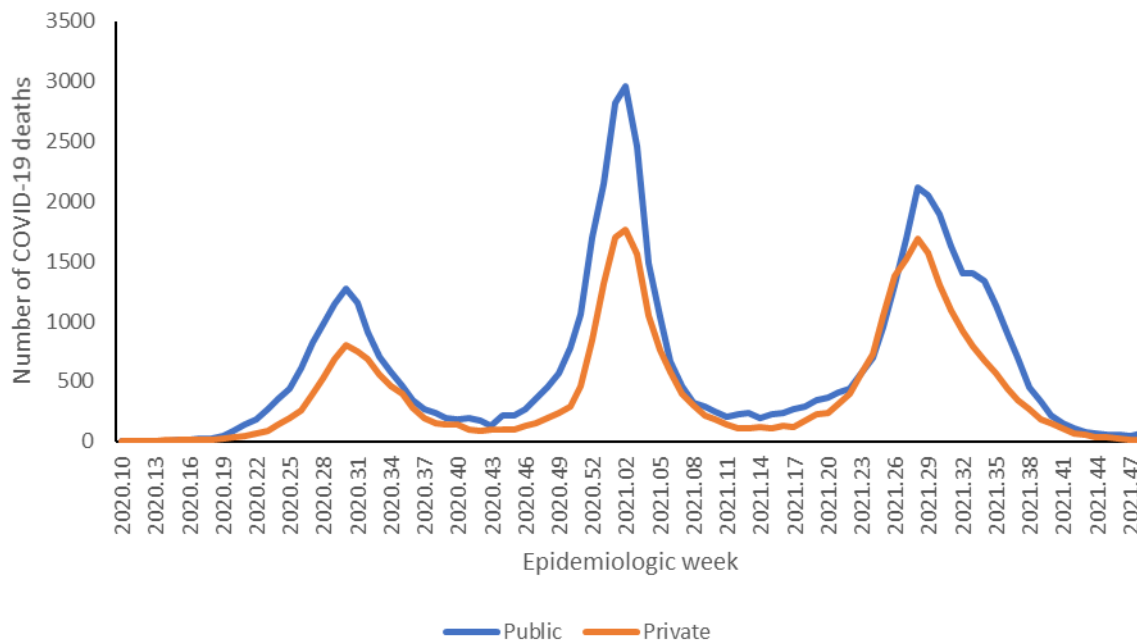


Figure 3: Number of reported COVID-19 in-hospital deaths, by health sector and epidemiologic week, South Africa, 5 March 2020-4 December 2021, N=94,720

Most deaths were reported in Gauteng 27,831 (29%), Western Cape 17,214 (18%), KwaZulu-Natal 15,750 (17%), and Eastern Cape 12,203 (13%). There has been a small increase in deaths in Gauteng in the past week. (Figures 4a and 4b).



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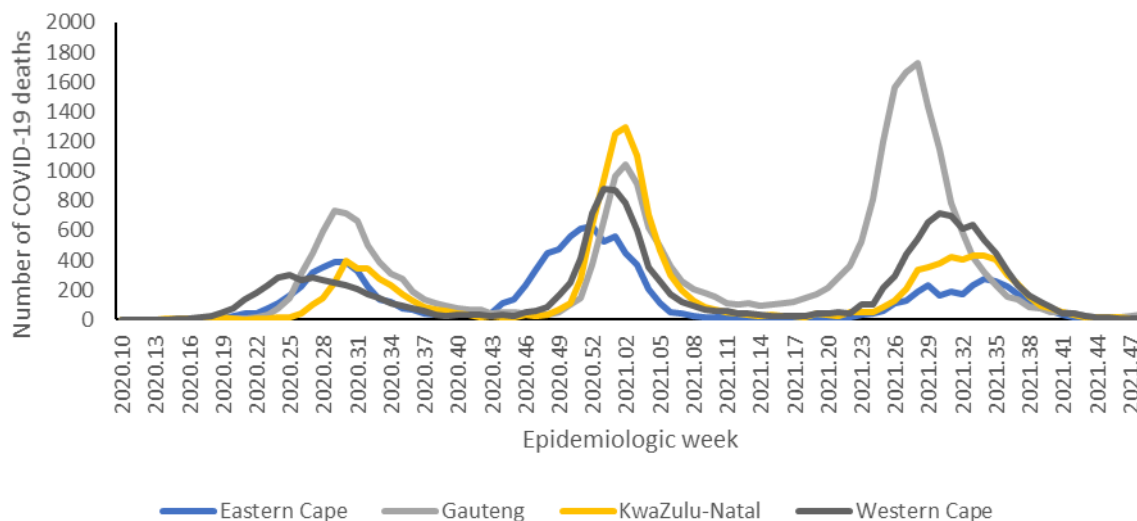


Figure 4a: Number of reported COVID-19 in-hospital deaths, by province with highest deaths and epidemiologic week of death, South Africa, 5 March 2020-4 December 2021, N=94,720

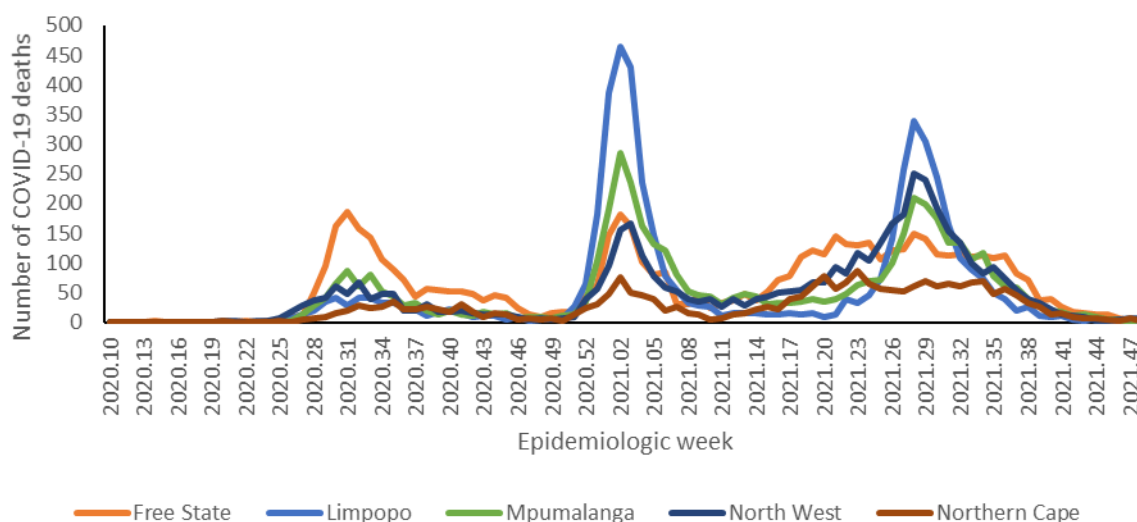


Figure 4b: Number of reported COVID-19 in-hospital deaths, by province with lowest deaths and epidemiologic week of death, South Africa, 5 March 2020-4 December 2021, N=94,720

The cumulative incidence risks of COVID-19 admissions and in-hospital deaths were highest in Western Cape, Free State and Gauteng provinces (Table 2).



Table 2: Number and cumulative incidence risk of COVID-19 hospitalisations and in-hospital deaths per 100,000 persons by province, South Africa, 5 March 2020-4 December 2021.

Province	Provincial Population mid 2020*	Cumulative admissions	Cumulative incidence risk of admissions / 100,000	Cumulative deaths	Cumulative incidence risk of deaths / 100,000
Eastern Cape	6734001	41611	617.9	12203	181.2
Free State	2928903	26603	908.3	5601	191.2
Gauteng	15488137	128 652	830.6	27831	179.7
KwaZulu-Natal	11531628	70245	609.2	15748	136.6
Limpopo	5852553	17462	298.4	4871	83.2
Mpumalanga	4679786	18678	399.1	4520	96.6
North West	4108816	28 958	704.8	4453	108.4
Northern Cape	1292786	9 989	772.7	2277	176.1
Western Cape	7005741	98 589	1407.3	17213	245.7
South Africa	59622350	440 787	739.3	94 717	158.9

*StatsSA mid-year population estimates 2020

Provincial trends

There has been an increase in the average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in all province except Northern Cape, and an increase in the average daily COVID-19 deaths in Gauteng, North West and Northern Cape (Table 3).





Table 3: Previous 14 days and current 14 days daily average COVID-19 admissions and deaths and percentage changes, South Africa, 6 November-4 December 2021.

Province	Hospital admissions		Percentage change in admissions	Hospital deaths		Percentage change in deaths
	Previous 14 days average admissions	Current 14 days average admissions		Previous 14 days average deaths	Current 14 days average deaths	
Eastern Cape	4.86	8.14	67.65	1.14	0.79	-31.25
Free State	7.71	9.43	22.22	1.36	0.57	-57.89
Gauteng	32.57	181.07	455.92	2.50	4.21	68.57
KwaZulu-Natal	10.07	24.86	146.81	1.86	1.21	-34.62
Limpopo	2.21	13.36	503.23	0.36	0.21	-40.00
Mpumalanga	3.71	16.71	350.00	0.64	0.50	-22.22
North West	5.21	16.64	219.18	0.50	1.00	100.00
Northern Cape	4.00	3.14	-21.43	0.50	0.71	42.86
Western Cape	13.71	18.36	33.85	2.07	0.50	-75.86

* Reporting of new admissions in the most recent week may be delayed

Gauteng

In all three waves there were higher numbers of admissions in the private sector. Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in both sectors. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of the second wave in both sectors (Figure 5). There has been an increase in admissions in both sectors since week 45.



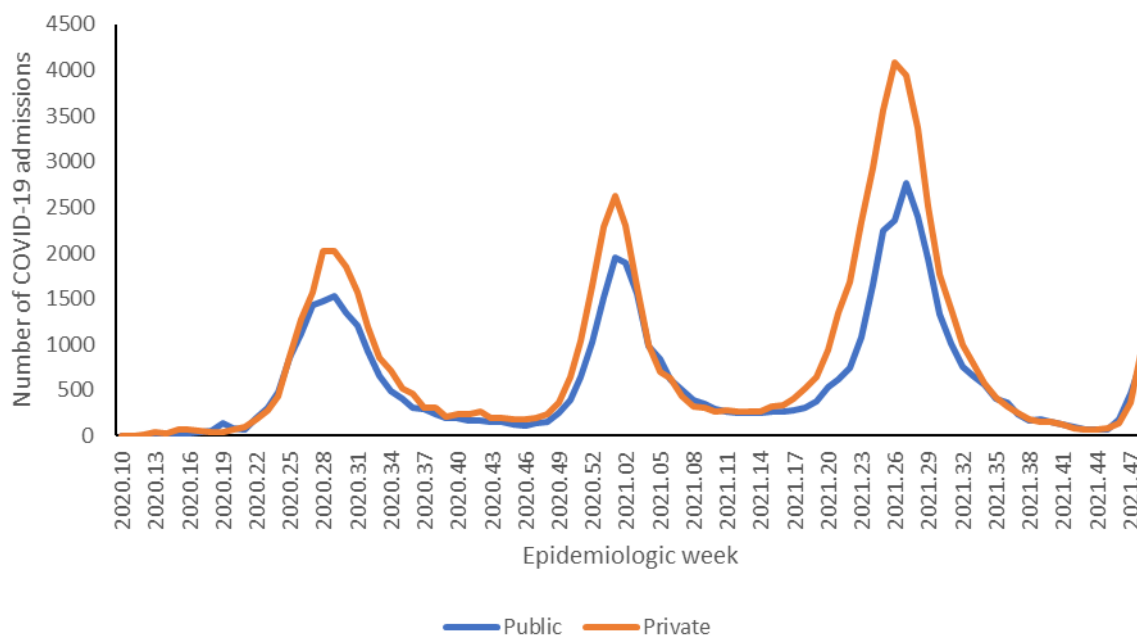


Figure 5: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Gauteng, 5 March 2020-4 December 2021, N=128,652

There has been an increase in admissions in City of Tshwane Metro since week 45, City of Johannesburg Metro, Ekurhuleni Metro, Sedibeng and West Rand since week 46 (Figure 6).

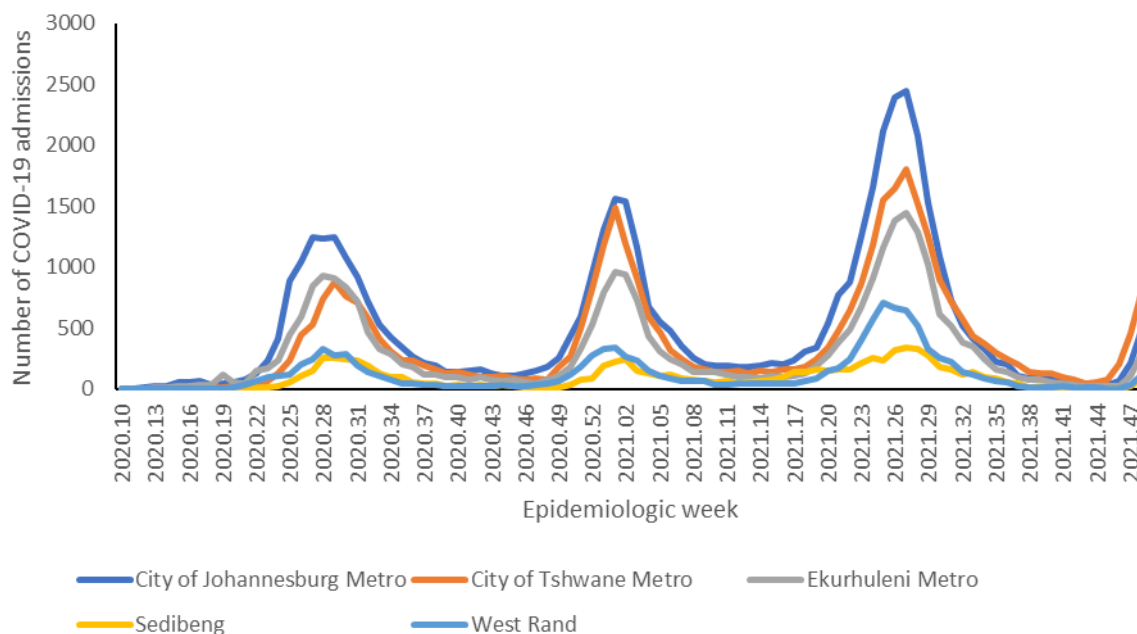


Figure 6: Number of reported COVID-19 admissions, by district and epidemiologic week, Gauteng, 5 March 2020-4 December 2021, N=128,652



There has been a small increase in deaths in City of Tshwane Metro since week 46 (Figure 7).

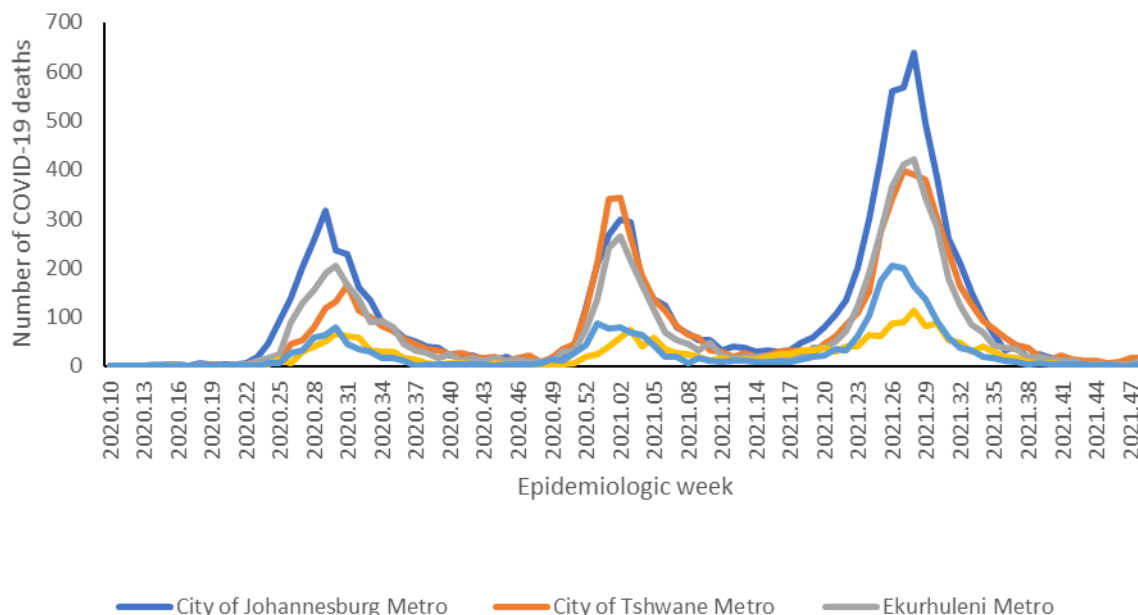


Figure 7: Number of reported COVID-19 in-hospital deaths, by district and epidemiologic week, Gauteng, 5 March 2020-4 December 2021, N=27,831

There has been an increase in average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in all districts, and an increase in average daily COVID-19 in-hospital deaths in City of Tshwane Metro, Ekurhuleni Metro and West Rand (Table 4).

Table 4: Previous 14 days and current 14 days average COVID-19 admissions and deaths and percentage changes, Gauteng, 6 November-4 December 2021.

District	Previous 14 days admissions average	Current 14 days admissions average	Percentage change in admissions	Previous 14 days deaths average	Current 14 days deaths average	Percentage change in deaths
City of Johannesburg Metro	7.07	48.86	590.91	0.71	0.71	0.00
City of Tshwane Metro	20.29	87.64	332.04	1.07	2.14	100.00
Ekurhuleni Metro	3.29	27.64	741.30	0.43	0.93	116.67
Sedibeng	0.93	6.71	623.08	0.07	0.07	0.00
West Rand	1.00	10.21	921.43	0.21	0.36	66.67



Across the three waves, the incidence risk for COVID-19 admissions increased with age, with the highest incidence risk for admissions being in individuals over 60 years and lowest in children ≤ 18 years (Figure 8).

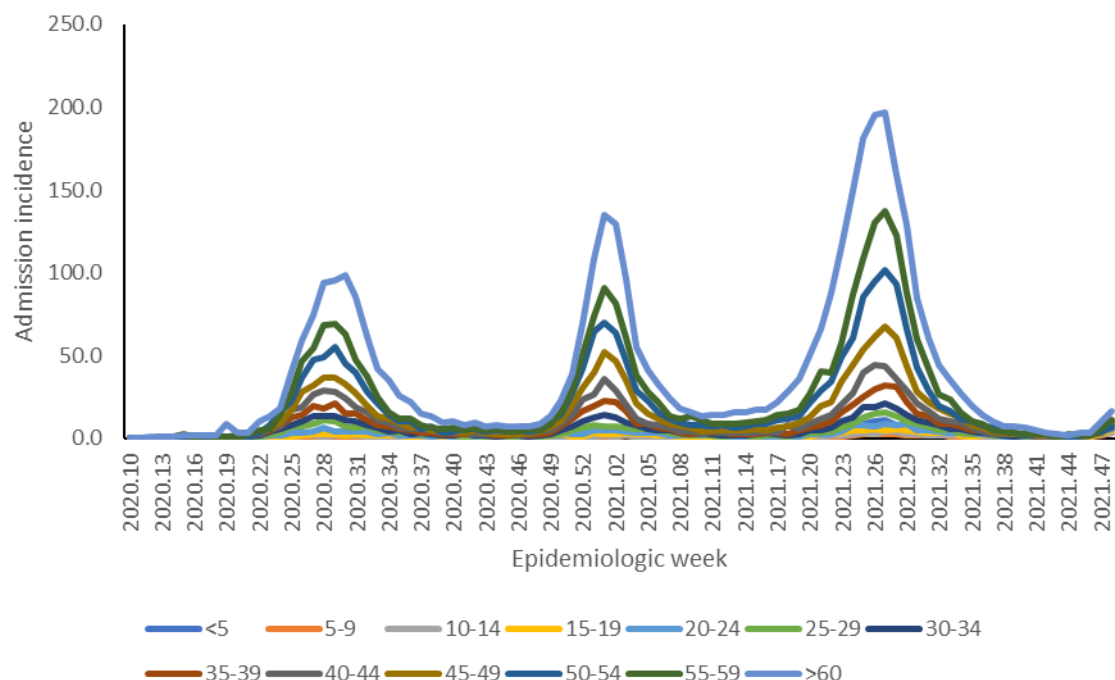


Figure 8: Incidence risk of COVID-19 admissions (per 100,000), by age group and epidemiologic week, Gauteng, 5 March 2020-4 December 2021

However, an increased incidence risk of admissions amongst children <5 years has been observed in the early fourth wave in Gauteng, and incidence risk in week 48 of 2021 in children <5 years is 10.7 admissions per 100,000 compared to the incidence risk of 14.4 in 50-59 years and 22.6 in >60 years per 100,000 (Table 5).

Table 5: Incidence risk of COVID-19 admissions (per 100,000), by age group and epidemiologic week, Gauteng, weeks 43-48 of 2021

Epiweek	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	>60
2021.43	0,5	0,2	0,1	0,2	0,4	0,8	1,0	1,1	1,4	1,1	0,6	0,5	2,7
2021.44	0,8	0,1	0,1	0,3	0,4	0,4	1,0	1,1	1,5	0,8	1,3	2,3	1,9
2021.45	0,8	0,4	0,2	0,7	0,5	0,7	0,9	1,0	0,7	0,7	1,1	1,5	3,1
2021.46	3,4	0,9	0,8	1,1	1,7	1,9	2,5	2,0	1,8	1,5	2,8	2,0	3,2
2021.47	6,8	1,8	2,8	3,2	4,3	6,1	6,9	6,7	5,1	3,6	4,2	6,0	10,2
2021.48	10,7	3,8	4,9	5,9	8,9	11,1	13,3	14,0	9,8	11,3	10,6	14,4	22,6



This pattern has changed over the three weeks of the early fourth wave in Gauteng, and the proportion of admissions in children <5 years compared to total admissions in the week, has decreased from 14% (week 46) to 11% (week 47) to 8% (week 48). Proportions of admissions in older age groups has increased (Figure 9).

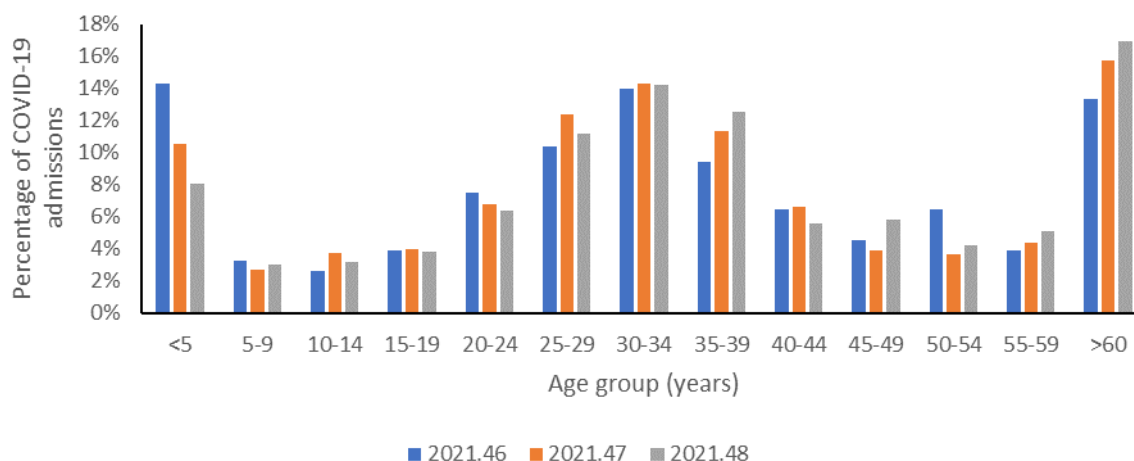


Figure 9: Percentage of COVID-19 admissions by age group, Gauteng, weeks 46-48 of 2021

Resurgence City of Tshwane Metro, Gauteng

There has been a sharp increase in SARS-CoV-2 cases and COVID-19 admissions in City of Tshwane Metro since week 45 (Figure 10). From 14 November-4 December 2021, there were 15,896 SARS-CoV-2 cases and 1,633 admissions in City of Tshwane Metro, 877 (53.7%) in the public sector and 756 (46.3%) in the private sector. The overall proportion of cases admitted was 10.3%. Among patients admitted, 937 (57.4%) were discharged alive, 85 (5.2%) transferred to another facility, 39 (2.4%) died, and 555 (34.0%) were still in hospital.



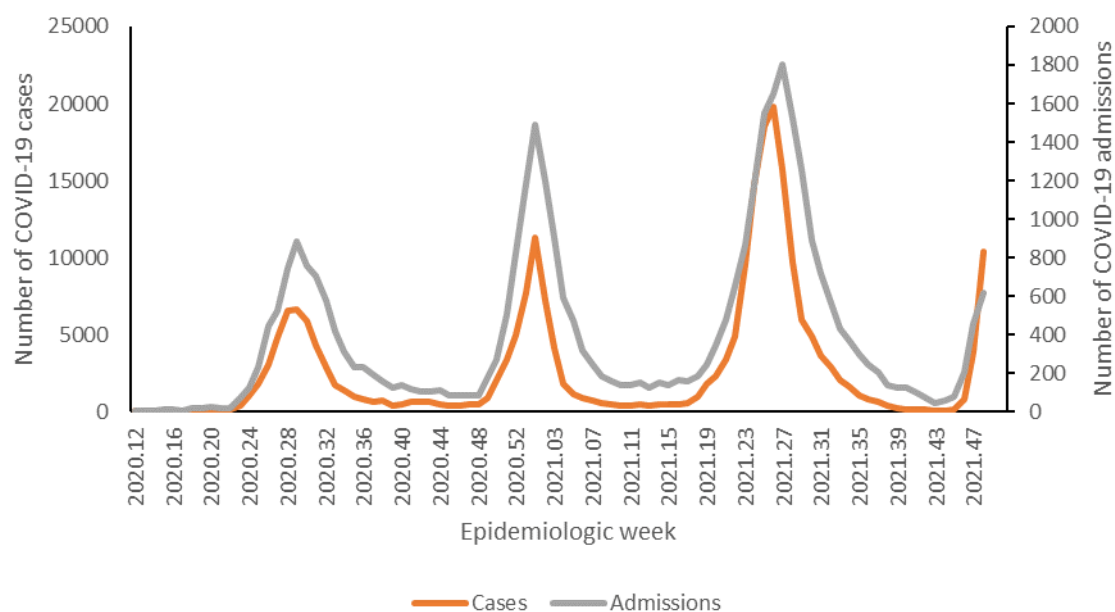


Figure 10: Number of SARS-CoV-2 cases and COVID-19 admissions, by epidemiologic week, City of Tshwane Metro, 5 March 2020-4 December 2021

The prevalence of comorbidities was highest in older individuals while patients younger than 40 years had low prevalence (<10%) of comorbidities. The median length of stay was 3 days for younger patients 0-9 years and was 4-6 days among patients >30 years (Table 6).

Table 6: Description of COVID-19 admissions, City of Tshwane Metro, 14 November-8 December 2021

Characteristic	Age group in years									
	0-4	5-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Number of admissions	198	58	105	267	380	178	153	140	83	71
Percent with comorbidities	1%	9%	4%	7%	10%	21%	20%	24%	35%	23%
Average LOS (days)	3	3	4	3	4	4	4	4	5	6



Children younger than 2 years (144/1,633) comprised 8.8% of all admissions while children 18 years and younger (347/1,633) comprised 21.2% of all admissions during this period (Figure 11).

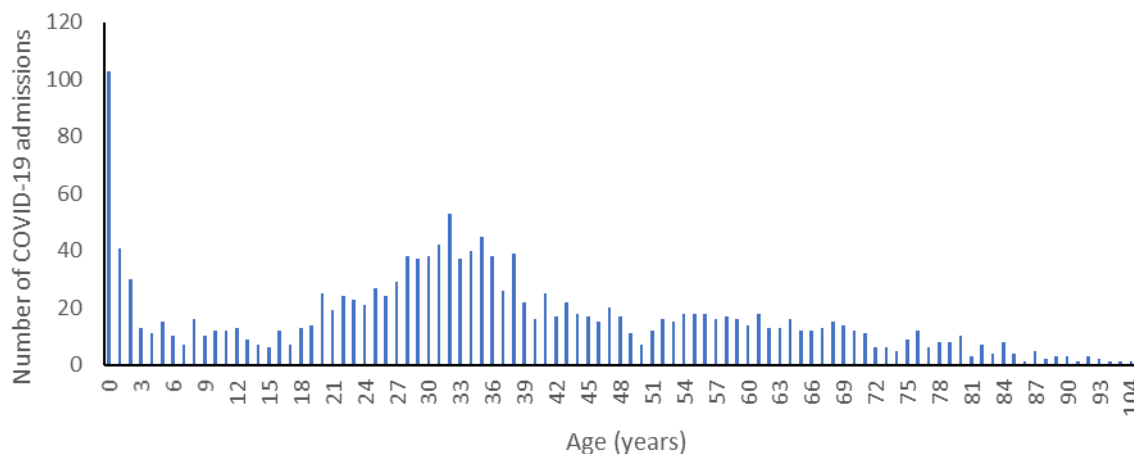


Figure 11: Number of COVID-19 admissions by age in years, City of Tshwane Metro, 11 November-8 December 2021 (N=1,633)

The reason for admission was available for 973 (59.6%) admissions. Most patients (873, 89.7%) were reported to be admitted for COVID-19 symptoms, while 25 (2.6%) were admitted for isolation and 75 (7.7%) tested SARS-CoV-2 positive incidentally when admitted for other reasons (Figure 12).

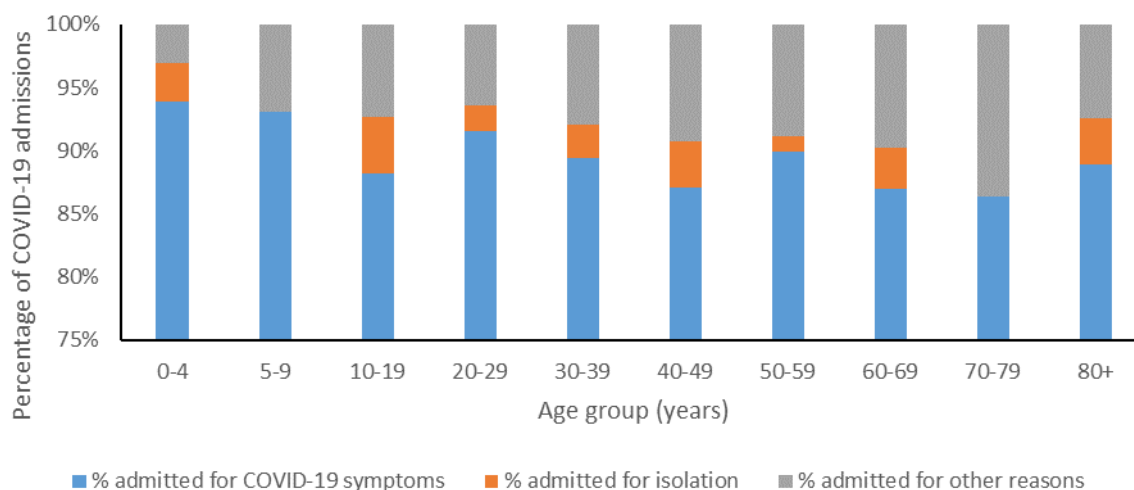


Figure 12: Reason for admission among patients admitted and tested SARS-CoV-2 positive, by age group (in years), City of Tshwane Metro, 14 November-4 December 2021 (N=973)





The numbers of COVID-19 admissions in City of Tshwane Metro during the first 25 days of the second (15 November-9 December 2020), third wave (9-2 June 2021) and the fourth wave (14 November-8 December 2021) were compared. There were 479 admissions in the early second wave, 1,413 admissions in the early third wave and 1,633 admissions in the early fourth wave. During the early second wave (251/479, 52.4%) and early third wave (906/1,413, 64.1%), most admissions were in older age groups >50 years, while during the early fourth wave, most admissions (1,008/1,633, 61.7%) were in younger age groups <40 years (Figure 13).

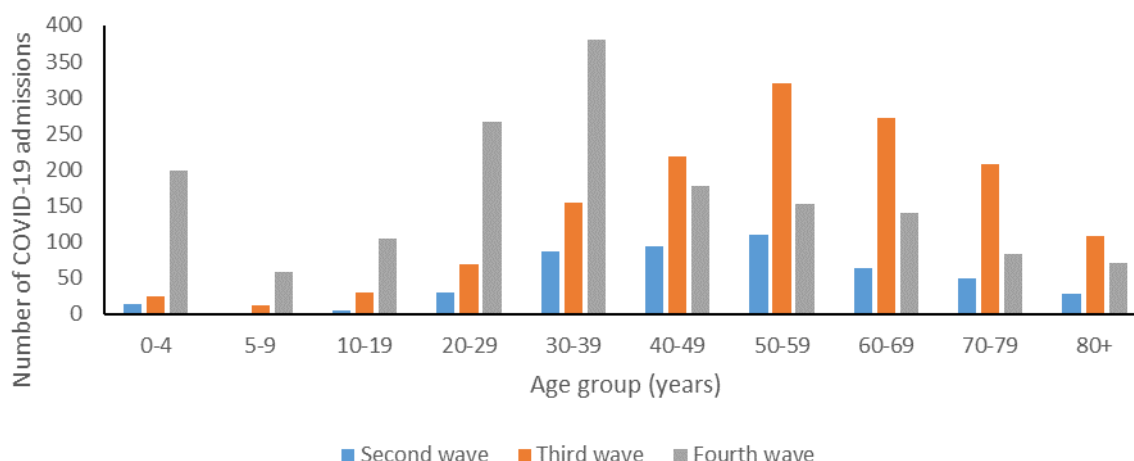


Figure 13: Number of COVID-19 admissions in first 25 days of second, third and fourth wave, by age group in years, City of Tshwane Metro, 15 November-9 December 2020, 9 May-2 June 2021 and 14 November-8 December 2021

Among patients who already had a hospital outcome and were no longer still in hospital, during the early second wave, 316/478 (66.1%) COVID-19 admissions were severe, during the early third wave, 943/1,408 (67.0%) of COVID-19 admissions were severe, and during the early fourth wave, 324/1,061 (30.5%) were severe. This differed by age group, with lower percentage of severe admissions among adults older than 30 years in the fourth wave (Figure 14).

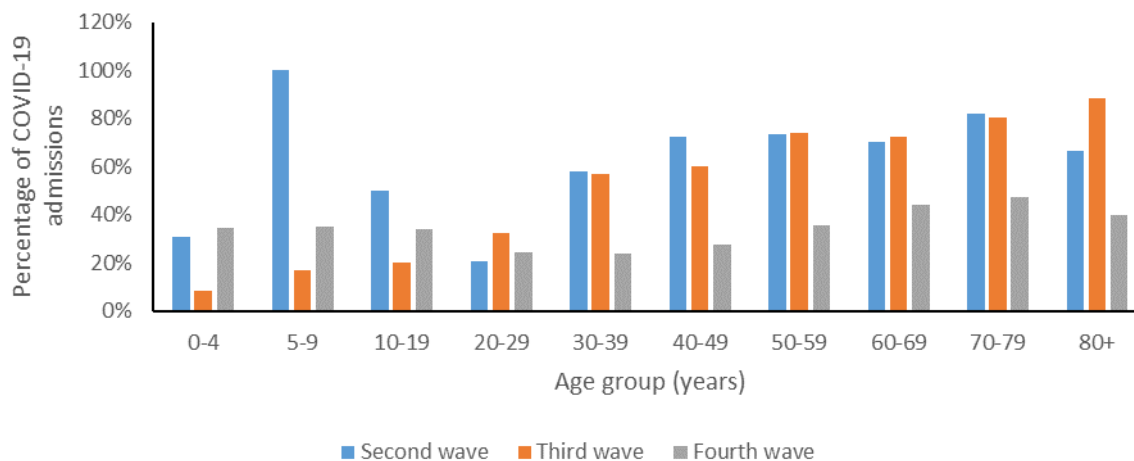


Figure 14: Percentage of COVID-19 admissions that were severe in first 25 days of second, third and fourth wave, amongst patients with outcome, by age group in years, City of Tshwane Metro, 15 November-9 December 2020, 9 May-2 June 2021 and 14 November-8 December 2021

Among patients who already had a hospital outcome and were no longer still in hospital, during the early second wave 92/478 (19.2%) of COVID-19 admissions died, during the early third wave 297/1,408 (21.1%) of COVID-19 admissions died, and during the early fourth wave 39/1,061 (3.7%) died. This trend of lower CFR in the early fourth wave was consistent across all age groups (Figure 15).

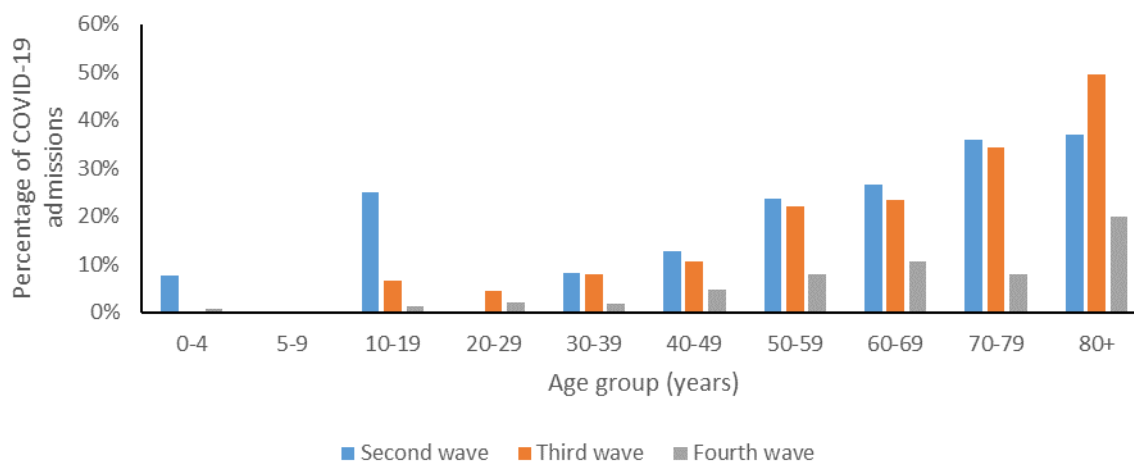


Figure 15: COVID-19 in-hospital case fatality ratio in first 25 days of third and fourth wave, amongst patients with outcome, by age group in years, City of Tshwane Metro, 15 November-9 December 2020, 9 May-2 June 2021 and 14 November-8 December 2021



Among patients who already had a hospital outcome and were no longer still in hospital, the average length of stay during the early fourth wave was lower compared to the second and third waves, for every age group (Figure 16).

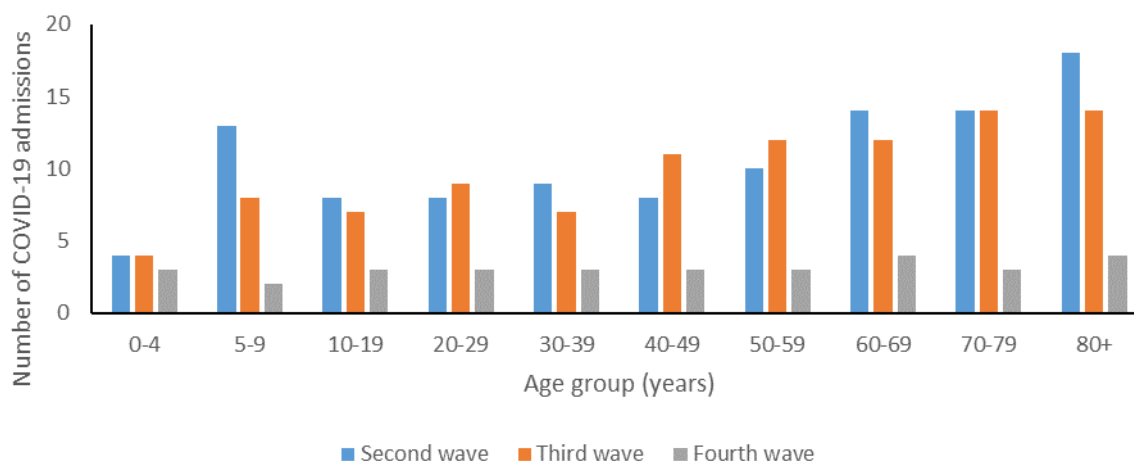


Figure 16: COVID-19 average length of stay in first 25 days of second, third and fourth wave, amongst patients with outcome, by age group in years, City of Tshwane Metro, 15 November-9 December 2020, 9 May-2 June 2021 and 14 November-8 December 2021

To understand the trend in severity of COVID-19 admissions, the private sector data for City of Tshwane Metro was analysed, only among patients who already had a hospital outcome. The average of the monthly proportion of severe admissions in the private sector across all age groups for the entire pandemic period was 65.1%, while in November 2021 it had decreased to 22.3% (Figure 17 and Table 6).

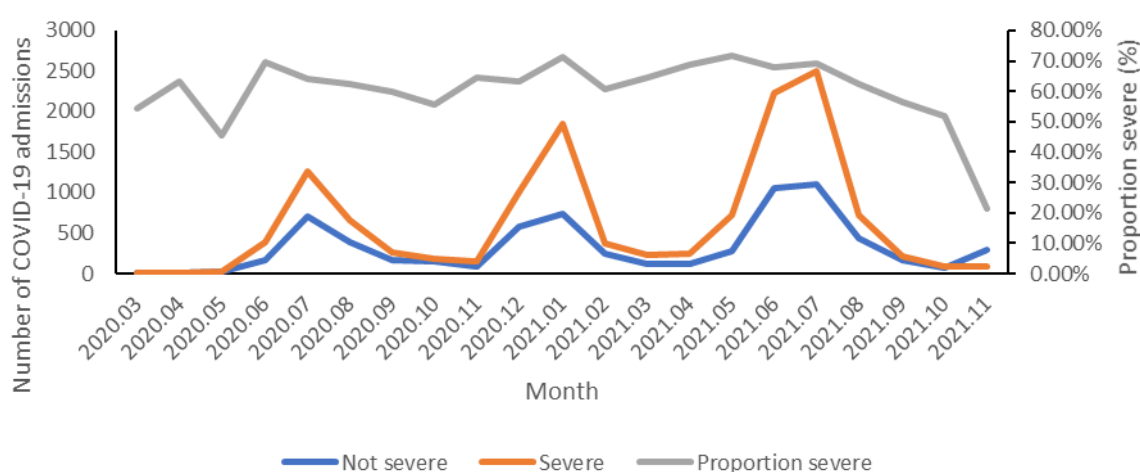


Figure 17: Number and proportion of COVID-19 admissions with severe disease amongst patients with outcome, by month, Tshwane Metro private sector, 5 March 2020-4 December 2021 (N=20,310)



This trend was similar across each age group, with lower percentage severe in November 2021 compared to the average across the pandemic (Table 7). As expected, across the first three waves, the percentage who were severe increased with age. However, in November the percentage severe was higher in children <20 years than in adults 20-34 years.

Table 7: Number and percentage of COVID-19 admissions with severe disease amongst patients with outcome, by age group, Tshwane Metro private sector, 5 March 2020 – 8 December 2021

Age group	Total percentage severe n/N (%)	November 2021 percentage severe n/N (%)
<20 years	288/1,033 (27.9%)	23/132 (17.4%)
20-34 years	746/2,102 (35.5%)	13/108 (12.0%)
35-59 years	6,327/9,668 (65.4%)	28/129 (21.7%)
≥60 years	5,856/7,507 (78.0%)	32/62 (51.6%)
All ages	13,217/20,310 (65.1%)	96/431 (22.3%)

Eastern Cape

In all three waves, there were higher numbers of admissions in the public sector. Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in both sectors, while weekly admissions in the third wave were lower than the second wave in both sectors. There has been a small increase in admissions in both sectors since week 46 (Figure 18).

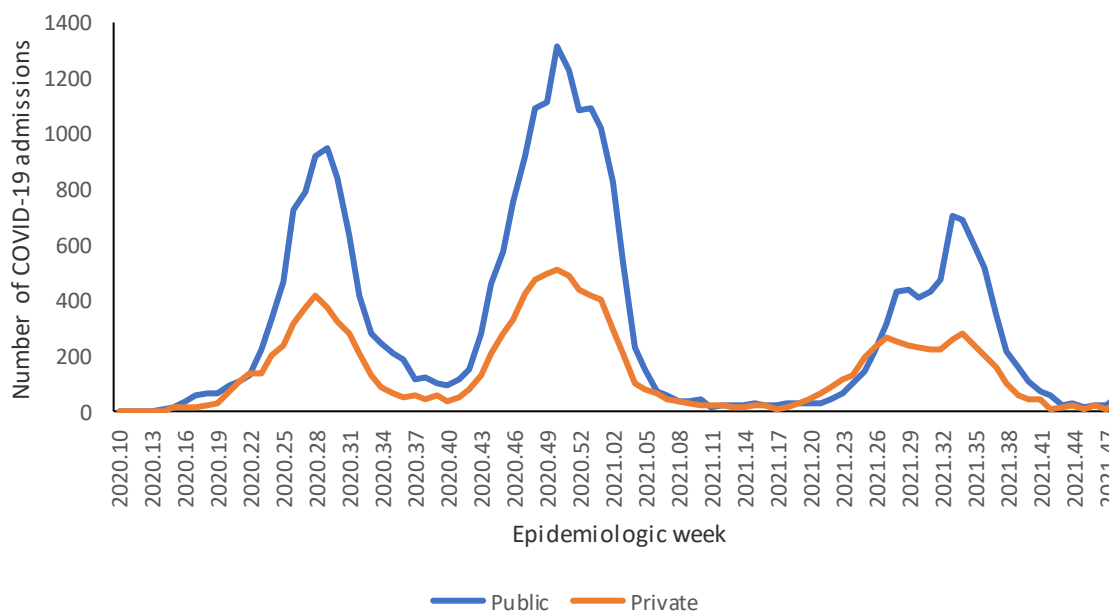


Figure 18: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Eastern Cape, 5 March 2020-4 December 2021, N=41,611



The weekly admissions at the peak of the second wave exceeded the numbers of admissions at the peak of the first wave in all districts, while weekly admissions in the third wave were lower than the second wave in all districts (Figure 19). There has been a small increase in admissions in Buffalo City Metro since week 46.

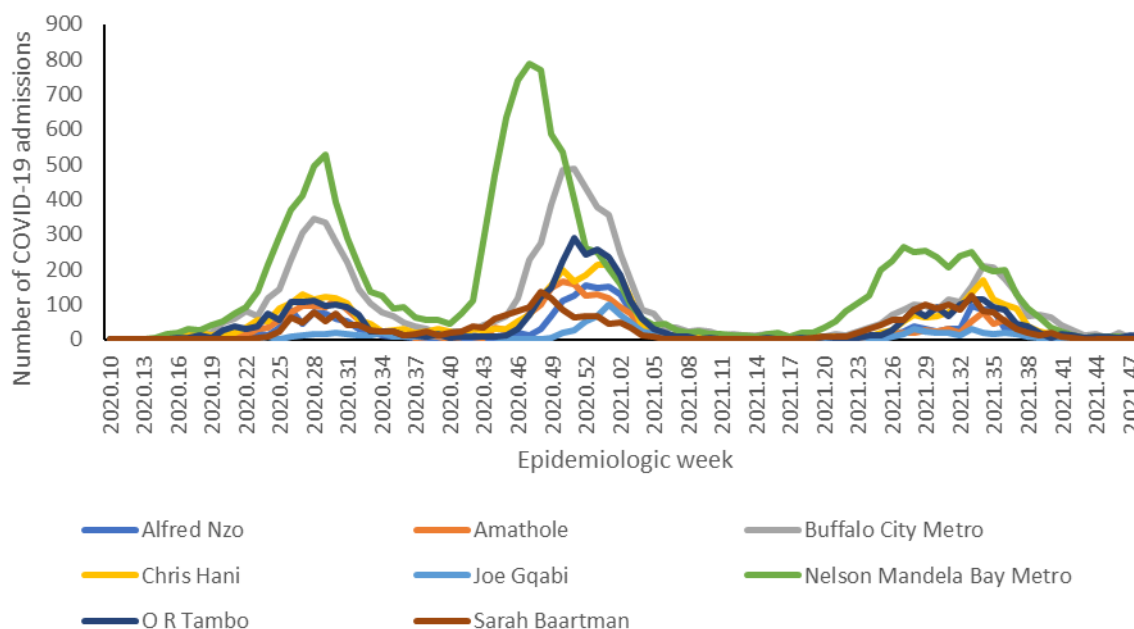


Figure 19: Number of reported COVID-19 admissions, by district and epidemiologic week, Eastern Cape, 5 March 2020-4 December 2021, N=41,611

The weekly deaths at the peak of the second wave exceeded the numbers of deaths at the peak of the first wave in all districts, while weekly deaths in the third wave were lower than the second wave in both sectors (Figure 20). Since the third wave peak in week 26, there has been a return to low weekly numbers of deaths in all districts.

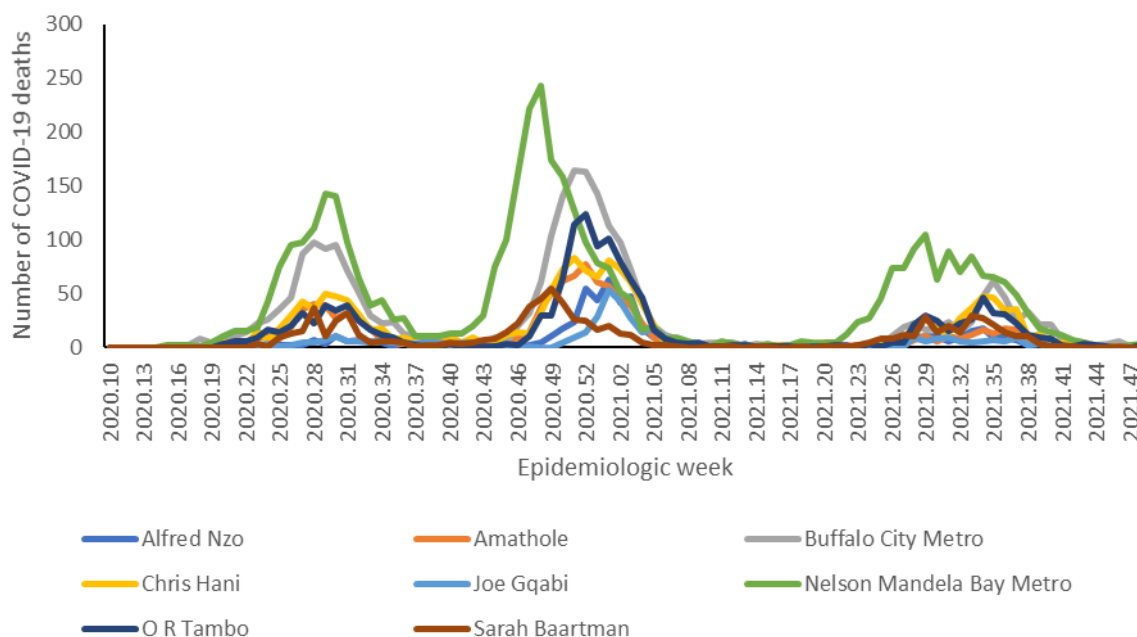


Figure 20: Number of reported COVID-19 in-hospital deaths, by district and epidemiologic week, Eastern Cape, 5 March 2020-4 December 2021, N=12,203

There has been an increase in the average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in all districts (Table 8).



Table 8: Previous 14 days and current 14 days average COVID-19 admissions and deaths and percentage changes, Eastern Cape, 6 November-4 December 2021.

District	Previous 14 days admissions average	Current 14 days admissions average	Percentage change in admissions	Previous 14 days deaths average	Current 14 days deaths average	Percentage change in deaths
Alfred Nzo	0.14	0.86	500.00	0.14	0.07	-50.00
Amathole	0.14	0.71	400.00	0.07	0.07	0.00
Buffalo City Metro	1.79	2.07	16.00	0.64	0.14	-77.78
Chris Hani	0.29	0.79	175.00	0.14	0.00	-100.00
Joe Gqabi	0.07	0.36	400.00	0.00	0.00	0.00
Nelson Mandela Bay	1.14	1.43	25.00	0.00	0.36	0.00
O R Tambo	0.93	1.50	61.54	0.07	0.14	100.00
Sarah Baartman	0.36	0.43	20.00	0.07	0.00	-100.00

Free State

In the first and third waves there were roughly equal numbers of admissions in both sectors, while in the second wave there were higher numbers of admissions in the public sector (Figure 21). Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in the public sector. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of the second wave in the private sector. There has been an increase in admissions in both sectors since week 46.



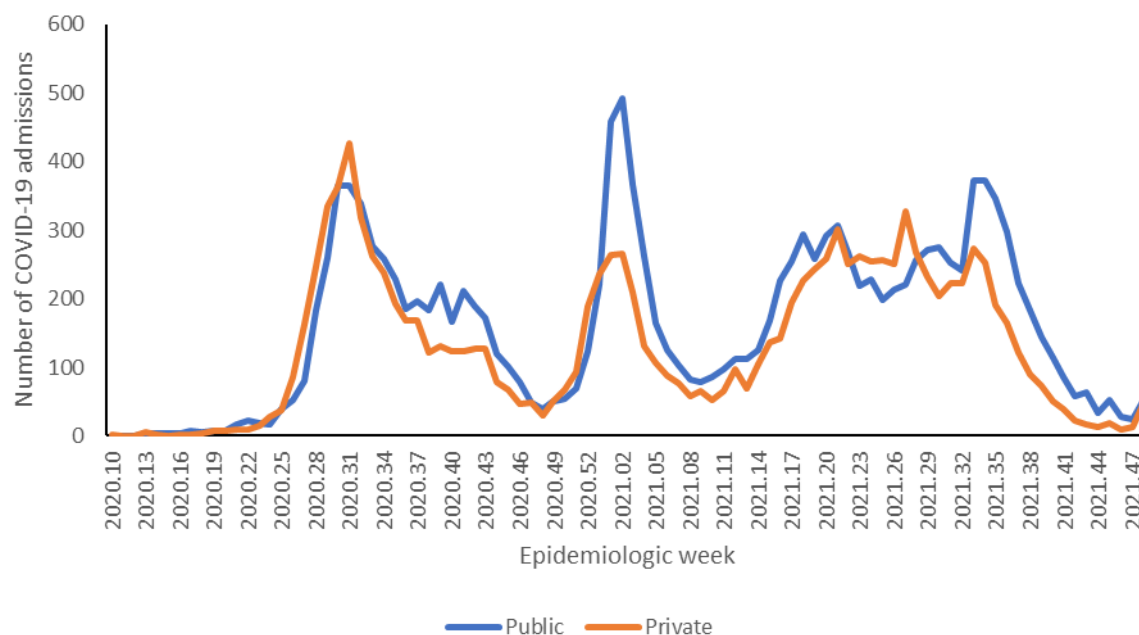


Figure 21: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Free State, 5 March 2020-4 December 2021, N=26,603

Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in Fezile Dabi, Thabo Mofutsanyane and Xhariep. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of the second wave in Lejweleputswa and Mangaung Metro (Figure 22). There has been an increase in admissions in Fezile Dabi, Lejweleputswa and Mangaung Metro since week 46.

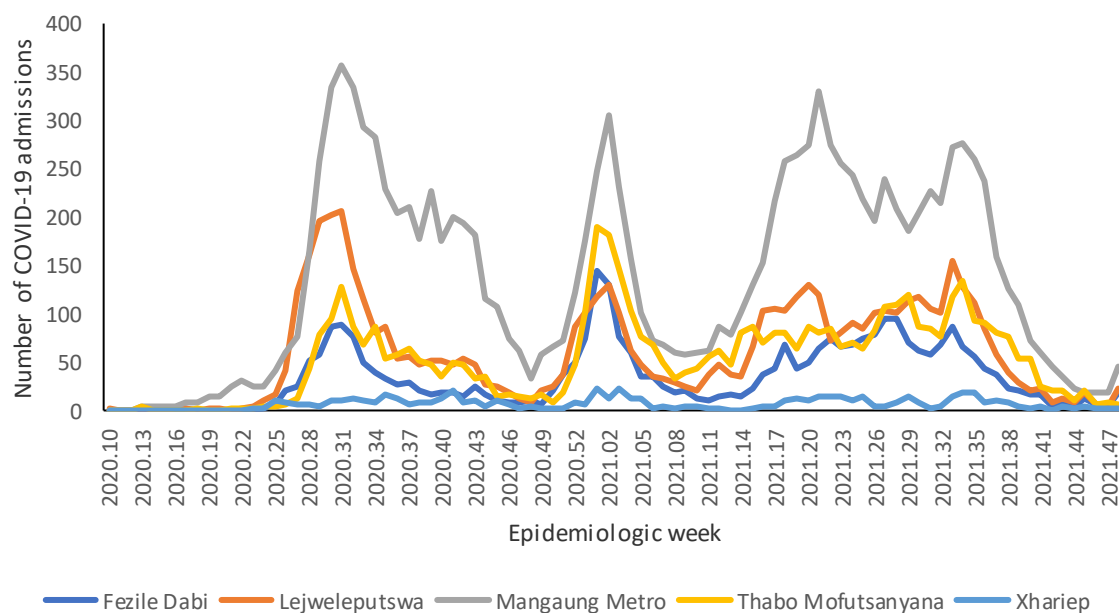


Figure 22: Number of reported COVID-19 admissions, by district and epidemiologic week, Free State, 5 March 2020–4 December 2021, N=26,603

Weekly deaths at the peak of the second wave exceeded the weekly numbers of deaths at the peak of the first wave in Thabo Mofutsanyana, Fezile Dabi and Xhariep. Weekly deaths at the peak of the third wave exceeded the weekly numbers of deaths at the peak of the second wave in Mangaung Metro and Lejweleputswa (Figure 23). Since the third wave peak, there has been a return to low weekly numbers of deaths in all districts.

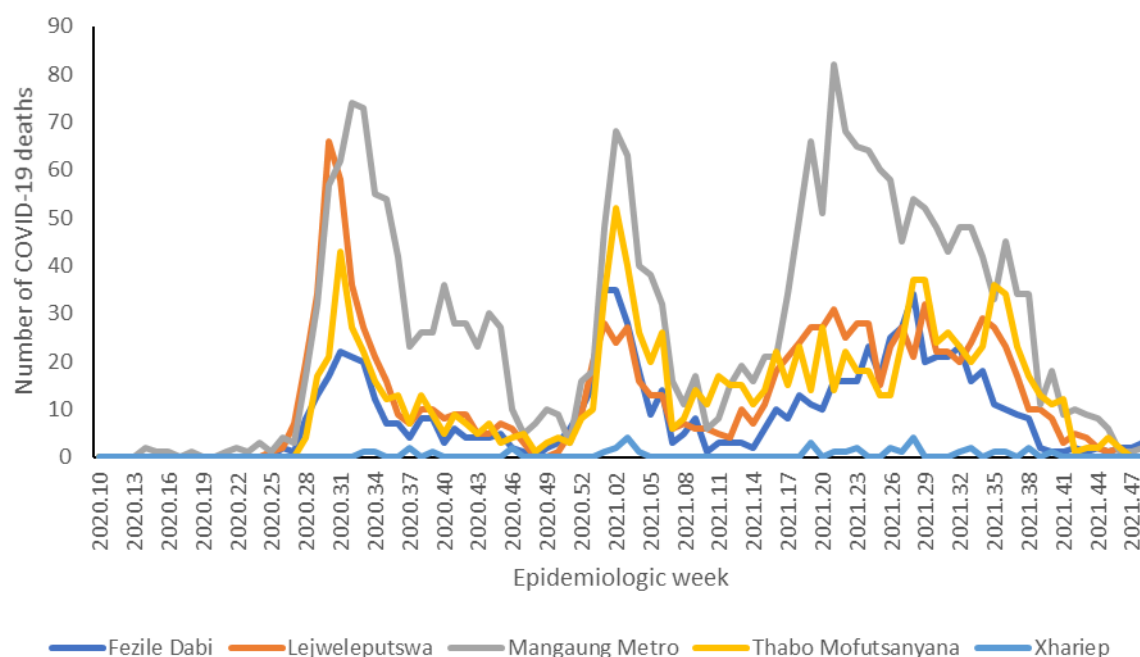


Figure 23: Number of reported COVID-19 in-hospital deaths, by district and epidemiologic week, Free State, 5 March 2020-4 December 2021, N=5,601

There has been a small increase in average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in Fezile Dabi, Lejweleputswa and Mangaung Metro (Table 9).

Table 9: Previous 14 days and current 14 days average COVID-19 admissions and deaths and percentage changes, Free State, 6 November-4 December 2021.

District	Previous 14 days admissions average	Current 14 days admissions average	Percentage change in admissions	Previous 14 days deaths average	Current 14 days deaths average	Percentage change in deaths
Fezile Dabi	1.29	1.57	22.22	0.21	0.36	66.67
Lejweleputswa	1.71	2.00	16.67	0.21	0.00	-100.00
Mangaung Metro	2.57	4.57	77.78	0.50	0.21	-57.14
Thabo Mofutsanyana	1.86	1.07	-42.31	0.43	0.00	-100.00
Xhariep	0.29	0.21	-25.00	0.00	0.00	0.00

KwaZulu-Natal

In the first and second waves there were higher numbers of admissions in the private sector but there have been equal numbers of admissions in the public and private sector in the third wave. Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in





both sectors, while weekly admissions in the third wave were lower than the second wave in both sectors (Figure 24). There has been an increase in admissions in both sectors since week 47.

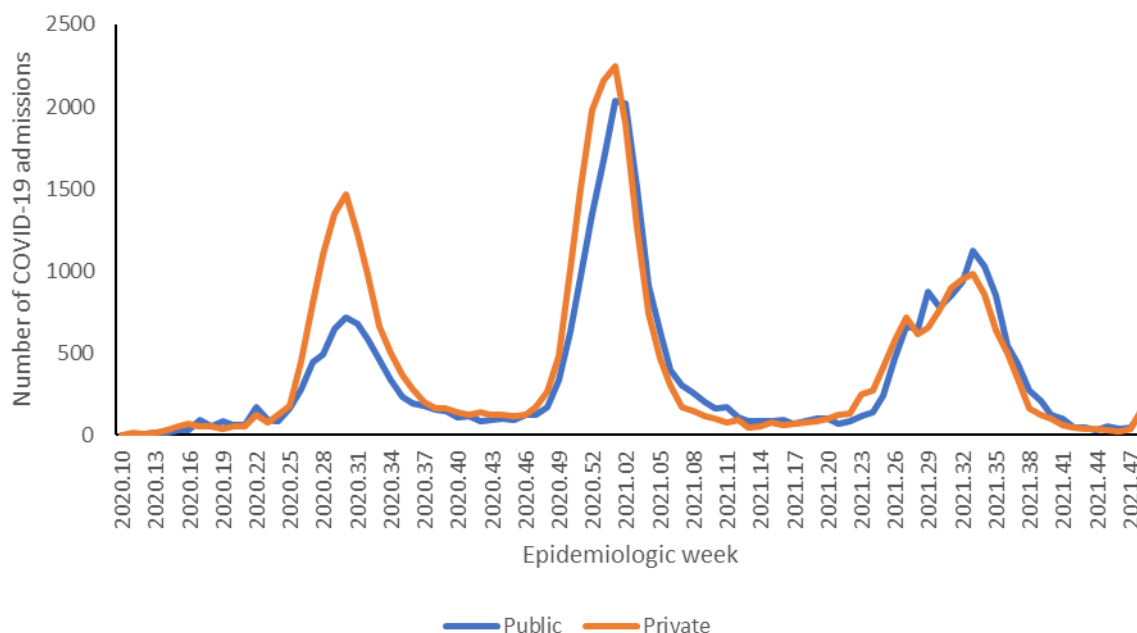


Figure 24: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, KwaZulu-Natal, 5 March 2020-4 December 2021, N=70,245

Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in all districts except Amajuba. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of the second wave in Amajuba (Figure 25). There has been an increase in admissions in eThekweni Metro since week 47.

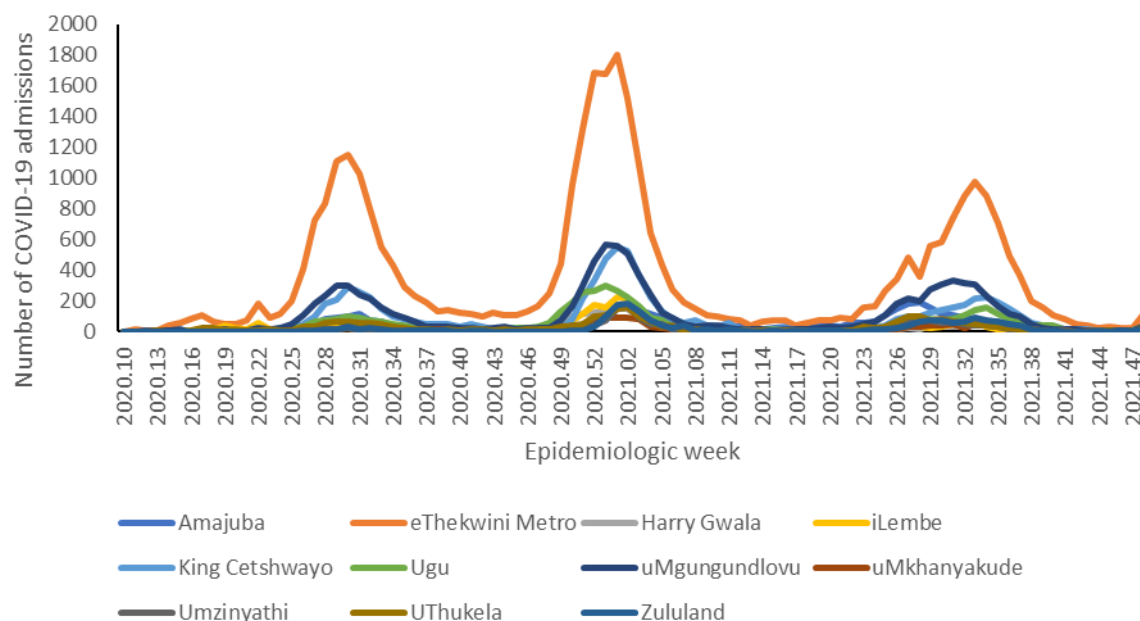


Figure 25: Number of reported COVID-19 admissions, by district and epidemiologic week, KwaZulu-Natal, 5 March 2020-4 December 2021, N=70,245

Weekly deaths at the peak of the second wave exceeded the weekly numbers of deaths at the peak of the first wave in all districts. Weekly deaths at the peak of the third wave exceeded the weekly numbers of deaths at the peak of the second wave in Amajuba (Figure 26). Since the third wave peak in week 33, there has been a return to low weekly numbers of deaths in all districts.

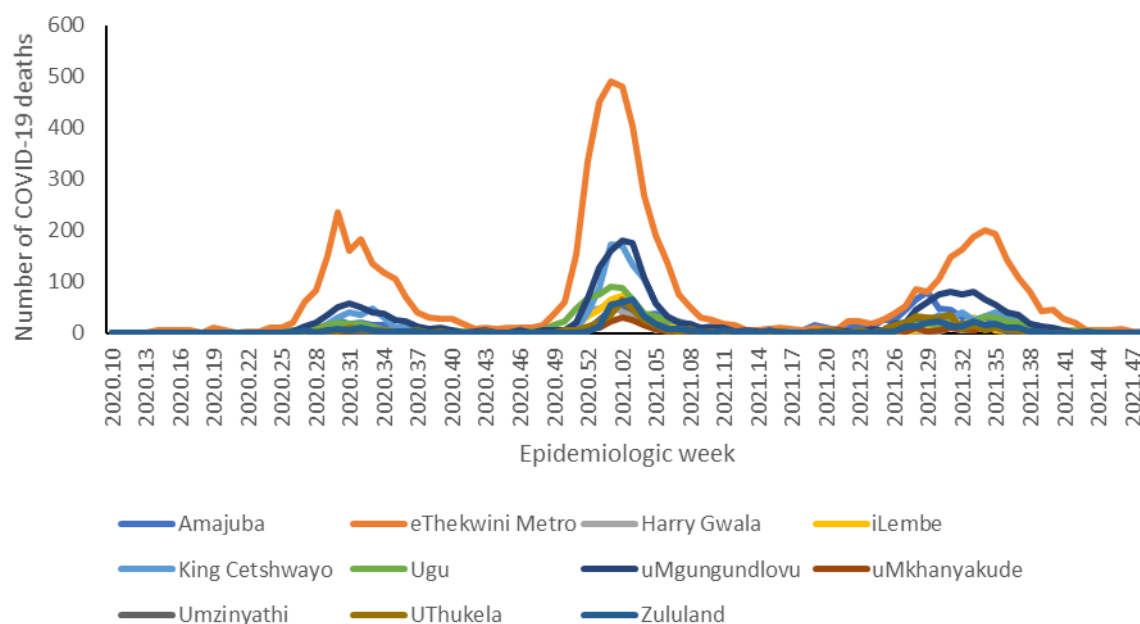


Figure 26: Number of reported COVID-19 in-hospital deaths, by district and epidemiologic week, KwaZulu-Natal, 5 March 2020-4 December 2021, N=15,750



There has been an increase in average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in all districts except Harry Gwala (Table 10).

Table 10: Previous 14 days and current 14 days average COVID-19 admissions and deaths and percentage changes, KwaZulu-Natal, 6 November-4 December 2021.

District	Previous 14 days admissions average	Current 14 days admissions average	Percentage change in admissions	Previous 14 days deaths average	Current 14 days deaths average	Percentage change in deaths
Amajuba	0.29	1.93	575.00	0.00	0.00	0.00
eThekweni Metro	4.36	9.64	121.31	1.00	0.36	-64.29
Harry Gwala	0.36	0.21	-40.00	0.00	0.00	0.00
iLembe	0.50	0.86	71.43	0.07	0.00	-100.00
King Cetshwayo	0.86	2.93	241.67	0.00	0.07	0.00
Ugu	1.21	2.79	129.41	0.21	0.21	0.00
uMgungundlovu	1.07	2.93	173.33	0.29	0.00	-100.00
uMkhanyakude	0.00	0.21	0.00	0.00	0.07	0.00
Umzinyathi	0.07	0.64	800.00	0.14	0.21	50.00
UThukela	0.93	1.64	76.92	0.07	0.14	100.00
Zululand	0.43	1.07	150.00	0.07	0.14	100.00

Limpopo

In the first wave there were roughly equal numbers of admissions in both sectors, but in the second and third waves there were higher numbers of admissions in the public sector. Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in both sectors, while weekly admissions in the third wave were lower than the second wave in both sectors (Figure 27). There has been an increase in admissions in both sectors since week 46.



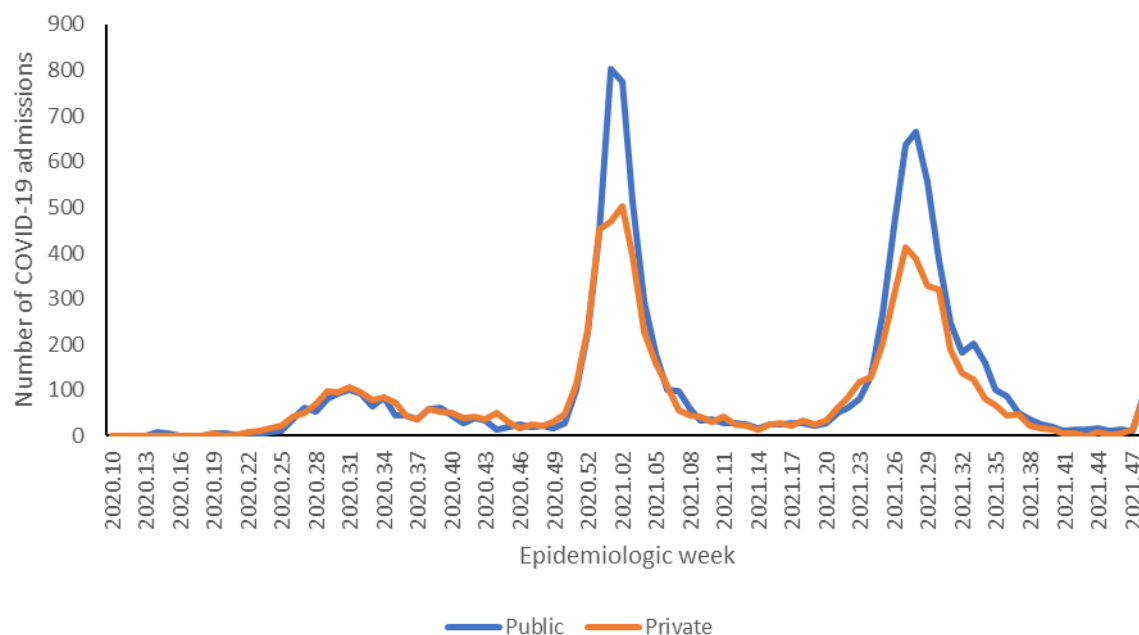


Figure 27: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Limpopo, 5 March 2020-4 December 2021, N=17,462

Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in all districts. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of the second wave in Sekhukhune and Waterberg (Figure 28). There has been a small increase in admissions in all districts since week 46.



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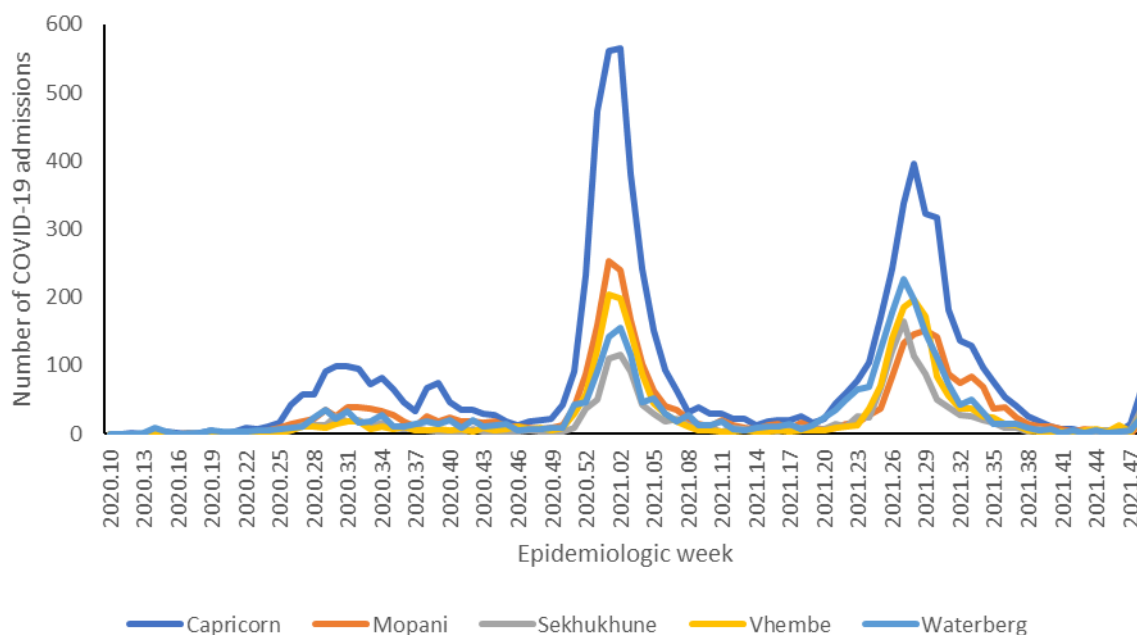


Figure 28: Number of reported COVID-19 admissions, by district and epidemiologic week, Limpopo, 5 March 2020-4 December 2021, N=17,462

Weekly deaths at the peak of the second wave exceeded the weekly numbers of deaths at the peak of the first wave in all districts. Weekly deaths at the peak of the third wave exceeded the weekly numbers of deaths at the peak of the second wave in Sekhukhune and Waterberg (Figure 29). Since the third wave peak, there has been a return to low weekly numbers of deaths in all districts.

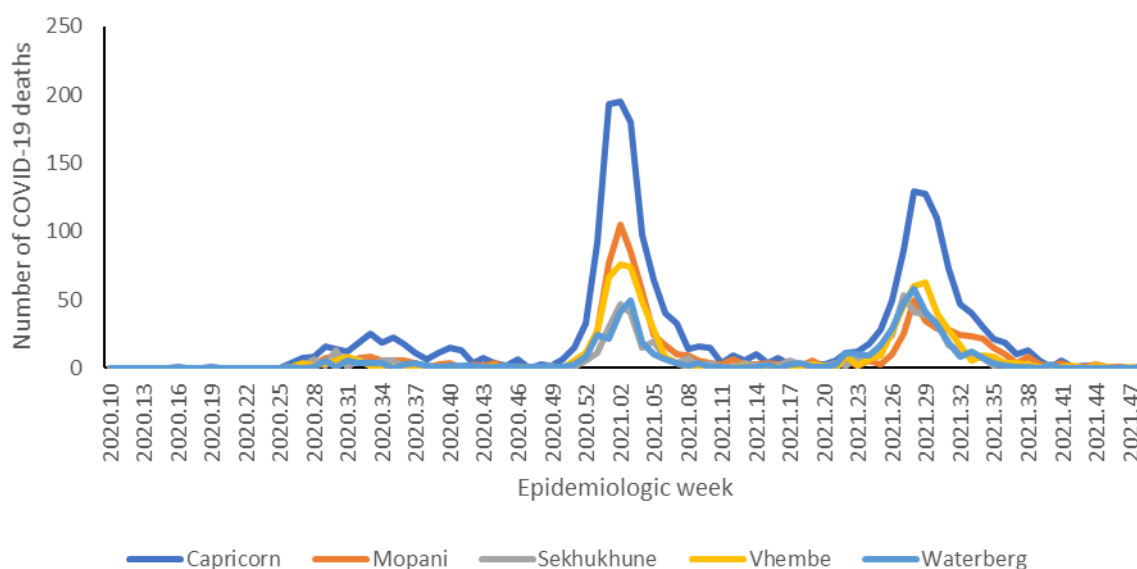


Figure 29: Number of reported COVID-19 in-hospital deaths, by district and epidemiologic week, Limpopo, 5 March 2020-4 December 2021, N=4,871



There has been an increase in average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in all districts (Table 11).

Table 11: Previous 14 days and current 14 days average COVID-19 admissions and deaths and percentage changes, Limpopo, 6 November-4 December 2021.

District	Previous 14 days admissions average	Current 14 days admissions average	Percentage change in admissions	Previous 14 days deaths average	Current 14 days deaths average	Percentage change in deaths
Capricorn	0.50	5.43	985.71	0.07	0.07	0.00
Mopani	0.14	1.14	700.00	0.14	0.00	-100.00
Sekhukhune	0.29	2.79	875.00	0.07	0.00	-100.00
Vhembe	1.00	2.07	107.14	0.07	0.07	0.00
Waterberg	0.29	1.93	575.00	0.00	0.07	0.00

Mpumalanga

In the first wave there were higher numbers of admissions in the private sector, in the second wave there were higher numbers of admissions in the public sector, and in the third wave there were equal numbers of admissions in both sectors. Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in both sectors. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of the second wave in the private sector (Figure 30). There has been an increase in admissions in both sectors since week 46.

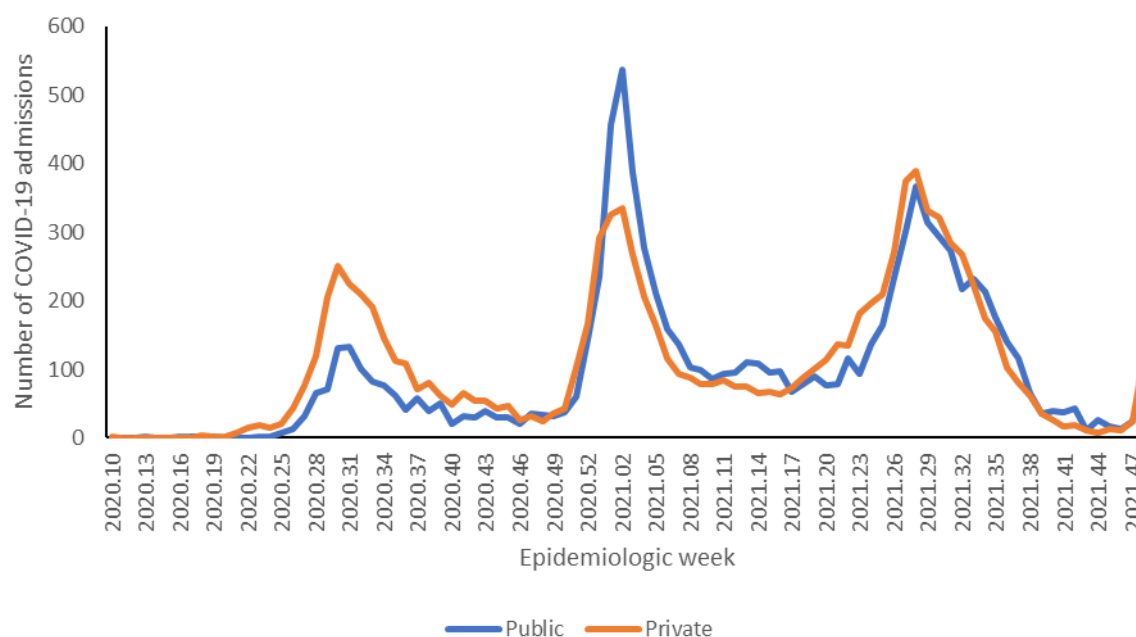


Figure 30: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Mpumalanga, 5 March 2020-4 December 2021, N=18,678



Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in all districts, while weekly admissions in the third wave were lower than the second wave in all districts (Figure 31). There has been an increase in the number of weekly admissions in all districts since week 46.

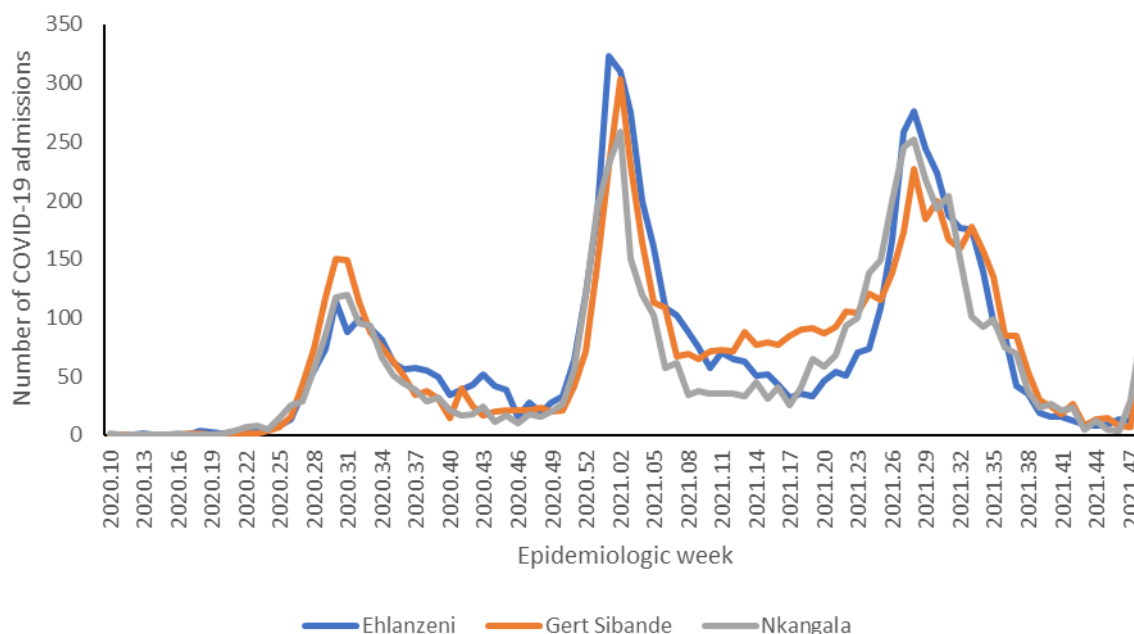


Figure 31: Number of reported COVID-19 admissions, by district and epidemiologic week, Mpumalanga, 5 March 2020-4 December 2021, N=18,678

Weekly deaths at the peak of the second wave exceeded the weekly numbers of deaths at the peak of the first wave in all districts, while weekly deaths in the third wave were lower than the second wave in all districts (Figure 32). Since the third wave peak, there has been a return to low weekly numbers of deaths in all districts.

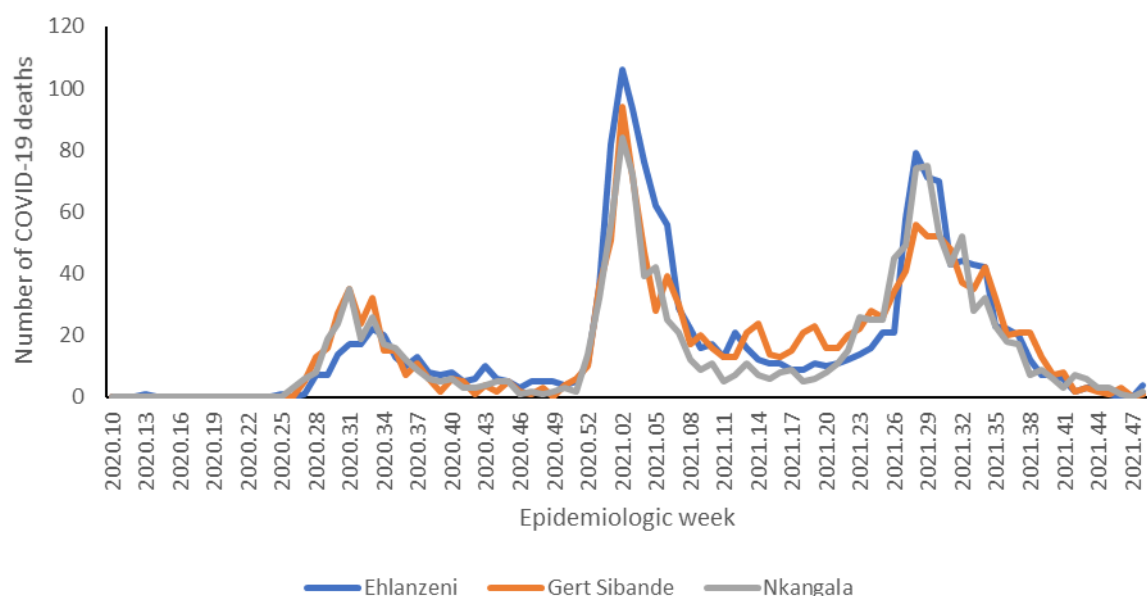


Figure 32: Number of reported COVID-19 in-hospital deaths, by district and epidemiologic week, Mpumalanga, 5 March 2020-4 December 2021, N=4,520

There has been an increase in average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in all districts (Table 12).

Table 12: Previous 14 days and current 14 days average COVID-19 admissions and deaths and percentage changes, Mpumalanga, 6 November-4 December 2021.

District	Previous 14 days admissions average	Current 14 days admissions average	Percentage change in admissions	Previous 14 days deaths average	Current 14 days deaths average	Percentage change in deaths
Ehlanzeni	1.57	3.86	145.45	0.07	0.29	300.00
Gert Sibande	1.57	4.79	204.55	0.29	0.07	-75.00
Nkangala	0.57	8.07	1312.50	0.29	0.14	-50.00

North West

In all three waves there were higher numbers of admissions in the public sector. Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in both sectors. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of the second wave in both sectors (Figure 33). There has been an increase in numbers of weekly admissions in both sectors since week 46.

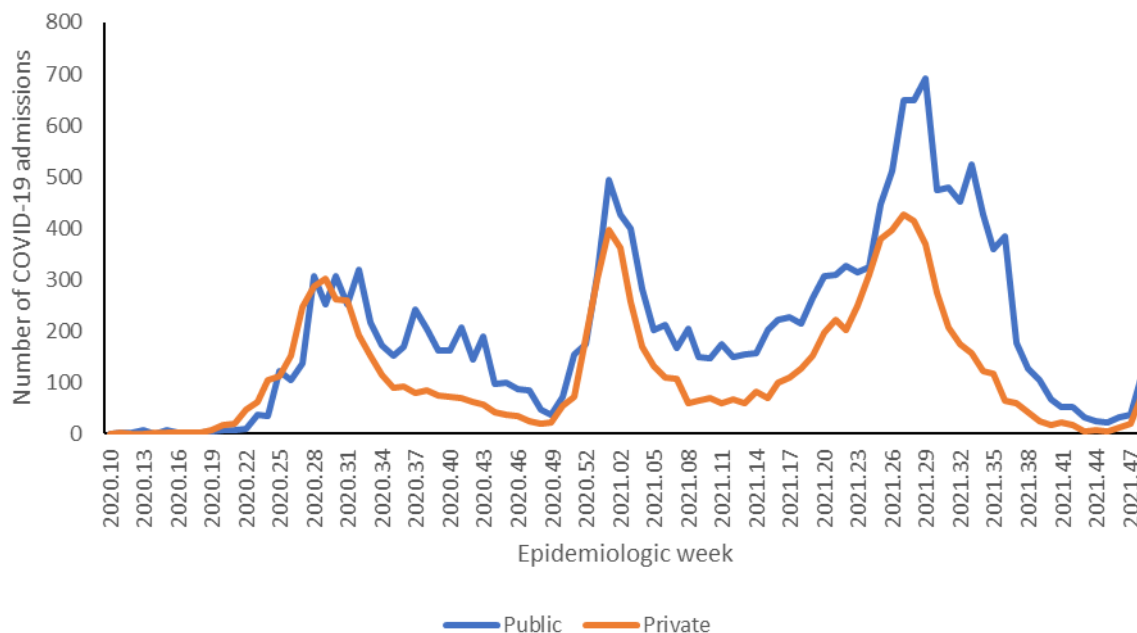


Figure 33: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, North West, 5 March 2020-4 December 2021, N=28,958

Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in all districts except Dr Kenneth Kaunda. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of the second wave in Bojanala Platinum and Dr Kenneth Kaunda (Figure 34). There has been an increase in the numbers of weekly admissions in all districts since week 46.

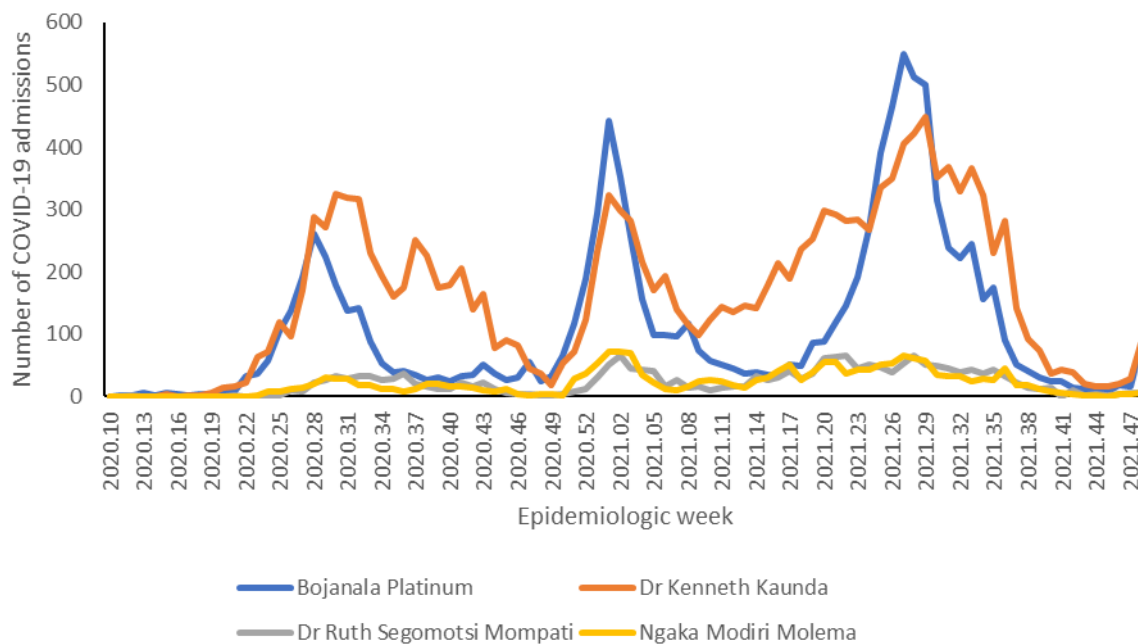


Figure 34: Number of reported COVID-19 admissions, by district and epidemiologic week, North West, 5 March 2020-4 December 2021, N=28,958

Weekly deaths at the peak of the second wave exceeded the weekly numbers of deaths at the peak of the first wave in all districts. Weekly deaths at the peak of the third wave exceeded the weekly numbers of deaths at the peak of the second wave in Bojanala Platinum and Dr Kenneth Kaunda (Figure 35). There has been a small increase in deaths in Dr Kenneth Kaunda district.

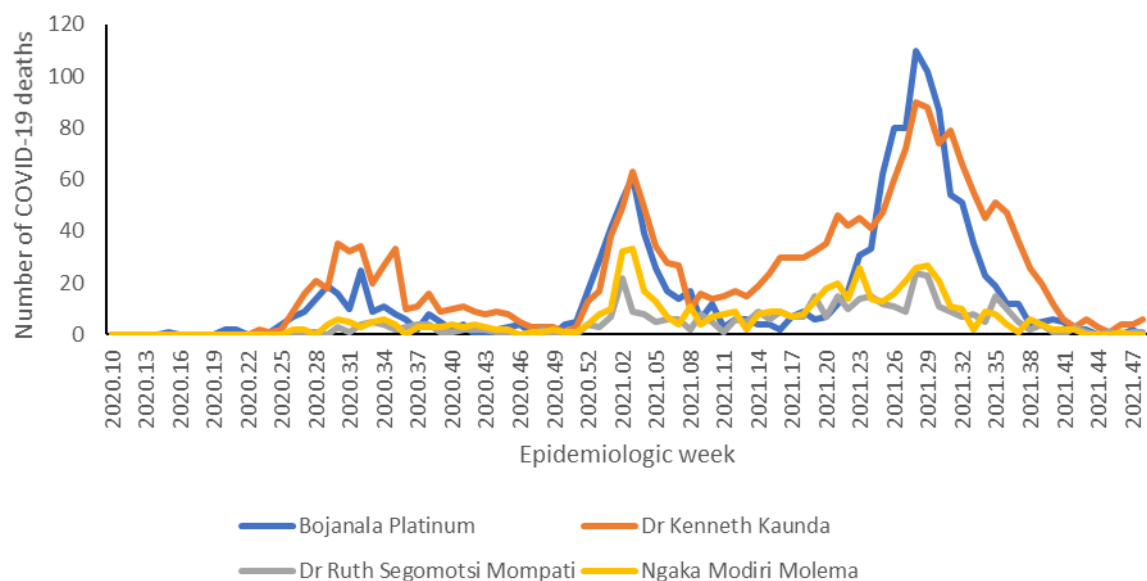


Figure 35: Number of reported COVID-19 in-hospital deaths, by district and epidemiologic week, North West, 5 March 2020-4 December 2021, N=4,453

There has been an increase in average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in all districts (Table 13).

Table 13: Previous 14 days and current 14 days average COVID-19 admissions and deaths and percentage changes, North West, 6 November-4 December 2021.

District	Previous 14 days admissions average	Current 14 days admissions average	Percentage change in admissions	Previous 14 days deaths average	Current 14 days deaths average	Percentage change in deaths
Bojanala Platinum	1.93	6.93	259.26	0.00	0.14	0.00
Dr Kenneth Kaunda	2.64	8.00	202.70	0.36	0.71	100.00
Dr Ruth Segomotsi Mompoti	0.36	0.93	160.00	0.07	0.14	100.00
Ngaka Modiri Molema	0.29	0.79	175.00	0.07	0.00	-100.00

Northern Cape

In all three waves there were roughly equal numbers of admissions in both sectors, however a second increase in the third wave was concentrated more in the public sector. Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in both sectors. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of



the second wave in both sectors (Figure 36). There has been increases in admissions in the private sector since week 47.

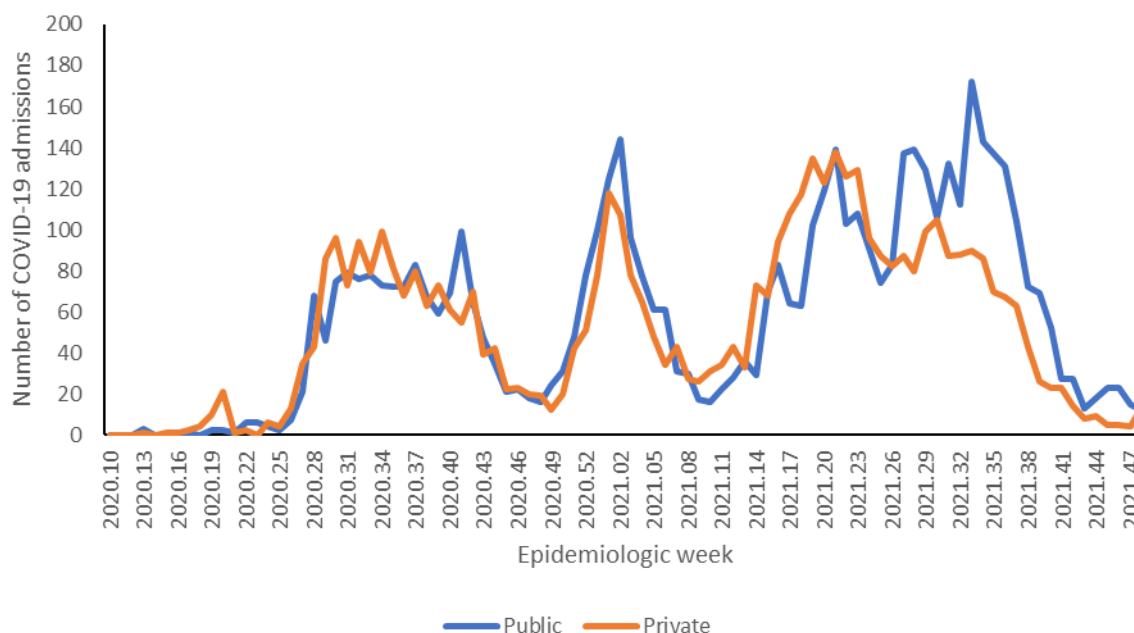


Figure 36: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Northern Cape, 5 March 2020-4 December 2021, N=9,989

Weekly admissions at the peak of the second wave exceeded the weekly number of admissions during the peak of the first wave in Pixley Ka Seme, Namakwa and ZF Mgcawu districts. Weekly admissions at the peak of the third wave exceeded the weekly numbers of admissions at the peak of the second wave in all districts (Figure 37). There have been small increases in weekly admissions in Namakwa and ZF Mgcawu districts.

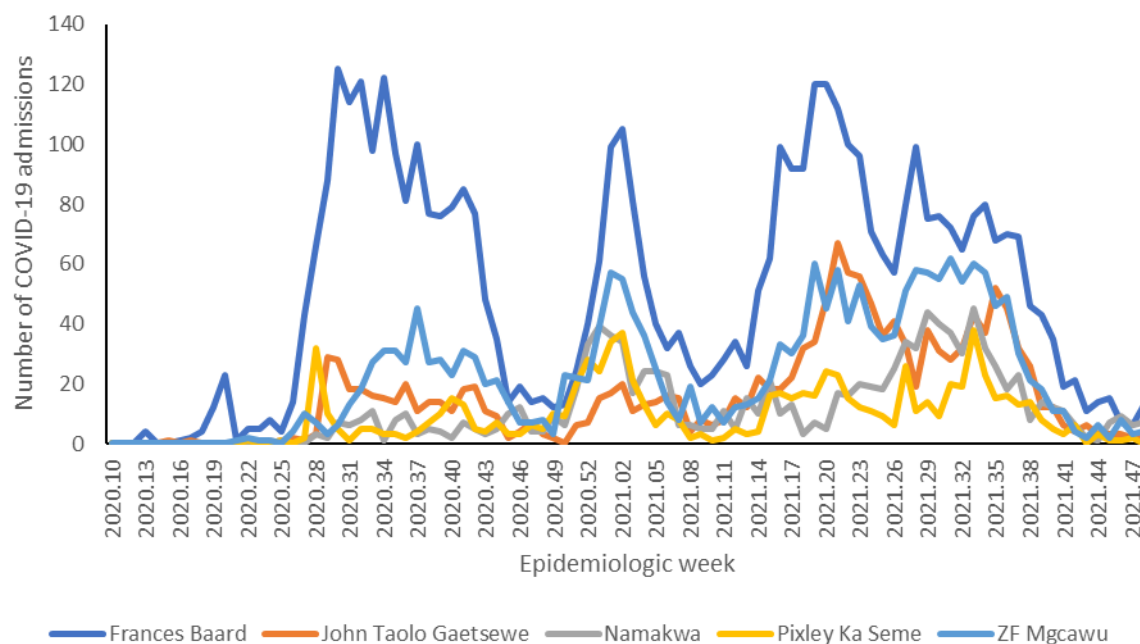


Figure 37: Number of reported COVID-19 admissions by district and epidemiologic week, Northern Cape, 5 March 2020-4 December 2021, N=9,989

Weekly deaths at the peak of the second wave exceeded the weekly numbers of deaths at the peak of the first wave in Pixley ka Seme, Namakwa and ZF Mgcawu districts. Weekly deaths at the peak of the third wave exceeded the weekly numbers of deaths at the peak of the second wave in Frances Baard, John Taolo Gaetsewe and ZF Mgcawu district (Figure 38). There have been small increases in weekly deaths in Namakwa and ZF Mgcawu districts.



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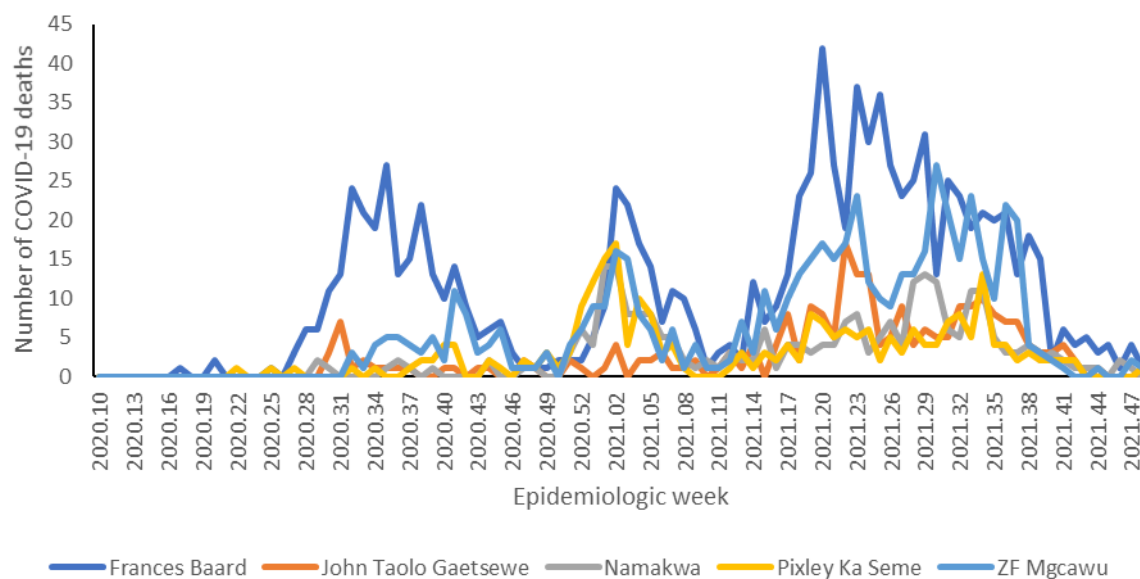


Figure 38: Number of reported COVID-19 in-hospital deaths, by district and epidemiologic week, Northern Cape, 5 March 2020-4 December 2021, N=2,277

There has been a decrease in average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in all districts (Table 14).

Table 14: Previous 14 days and current 14 days average COVID-19 admissions and deaths and percentage changes, Northern Cape, 6 November-4 December 2021.

District	Previous 14 days admissions average	Current 14 days admissions average	Percentage change in admissions	Previous 14 days deaths average	Current 14 days deaths average	Percentage change in deaths
Frances Baard	1.57	1.29	-18.18	0.36	0.36	0.00
John Taolo Gaetsewe	0.43	0.29	-33.33	0.00	0.00	0.00
Namakwa	1.14	0.93	-18.75	0.14	0.07	-50.00
Pixley Ka Seme	0.14	0.14	0.00	0.00	0.07	0.00
ZF Mgcawu	0.71	0.50	-30.00	0.00	0.21	0.00

Western Cape

In all three waves there were higher numbers of admissions in the public sector. Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in both sectors, while weekly admissions in the third wave were lower than the second wave in both sectors (Figure



39). There has been an increase in admissions in both sectors since week 47.

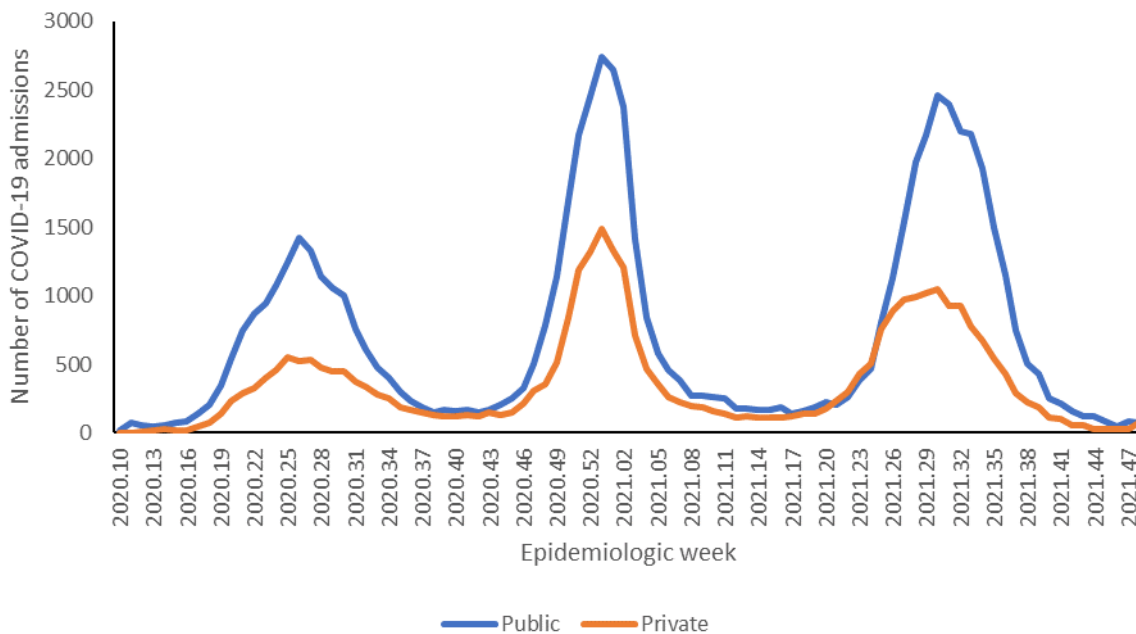


Figure 39: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Western Cape, 5 March 2020-4 December 2021, N=98,589

Weekly admissions at the peak of the second wave exceeded the weekly numbers of admissions at the peak of the first wave in all districts. Weekly number of admissions in the third wave exceeded the weekly numbers of admissions at the peak of the second wave in Central Karoo and Garden Route (Figure 40). There has been an increase in admissions in City of Cape Town Metro since week 47.

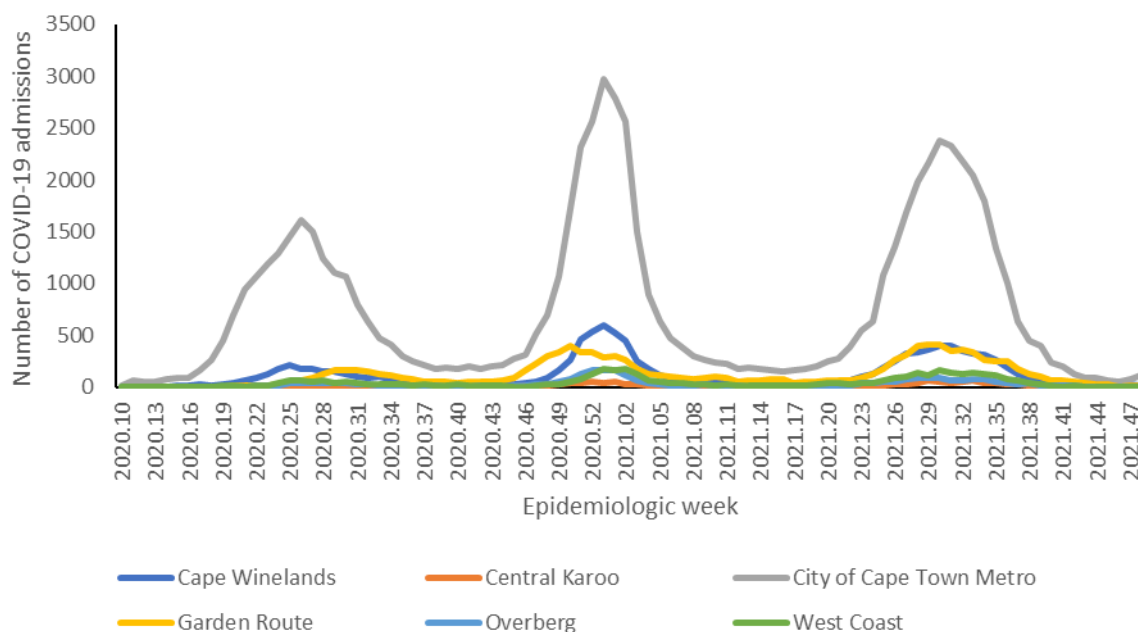


Figure 40: Number of reported COVID-19 admissions, by district and epidemiologic week, Western Cape, 5 March 2020-4 December 2021, N=98,589

Weekly deaths at the peak of the second wave exceeded the weekly numbers of deaths at the peak of the first wave in all districts. Weekly number of deaths in the third wave exceeded the weekly numbers of deaths at the peak of the second wave in Central Karoo, Garden Route and West Coast (Figure 41). Since the third wave peak, there has been a return to low weekly numbers of deaths in all districts.

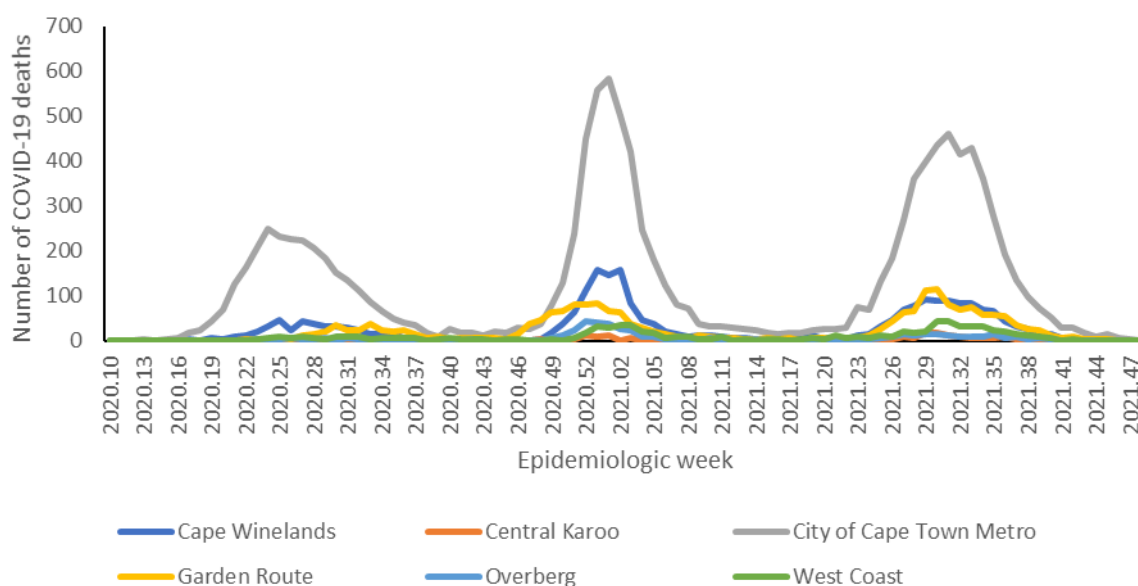


Figure 41: Number of reported COVID-19 in-hospital deaths, by district and epidemiologic week, Western Cape, 5 March 2020-4 December 2021, N=17,214



There has been a small increase in average daily COVID-19 admissions comparing the previous 14 days and the current 14 days in Cape Winelands and City of Cape Town Metro (Table 15).

Table 15: Previous 14 days and current 14 days average COVID-19 admissions and deaths and percentage changes, Western Cape, 6 November-4 December 2021.

District	Previous 14 days admissions average	Current 14 days admissions average	Percentage change in admissions	Previous 14 days deaths average	Current 14 days deaths average	Percentage change in deaths
Cape Winelands	2.21	2.57	16.13	0.36	0.07	-80.00
Central Karoo	0.50	0.21	-57.14	0.07	0.00	-100.00
City of Cape Town Metro	8.29	13.50	62.93	1.36	0.21	-84.21
Garden Route	1.79	1.36	-24.00	0.21	0.07	-66.67
Overberg	0.43	0.21	-50.00	0.00	0.07	0.00
West Coast	0.50	0.50	0.00	0.07	0.07	0.00



Limitations

DATCOV now includes reporting from all hospitals with COVID-19 admissions but many hospitals are yet to reach complete submission of historic data. Data quality in a surveillance system is dependent on the information submitted by healthcare institutions. It is not possible for the NICD to verify or check the quality of all these data, however, the NICD has built-in data quality checks. Delays in reporting of admissions and deaths may affect the numbers reported in the most recent week. The National Department of Health have recruited data capturers to support hospitals to improve data submission.

As hospitals reached capacity, admission criteria may change and therefore influence trends and inferences about the progression of the epidemic. DATCOV only reports hospital-based admissions and deaths and therefore does not include deaths occurring outside hospitals. DATCOV now has a module to record out-of-hospital deaths.

Severity data has some inherent limitations. We rely on a proxy indicator for severity and do not have clinical or laboratory parameters to ascertain clinical severity. In the early and late phases of the wave there is likely to be lower severity due to there being sufficient hospital capacity. It may take a few weeks for hospitalisation outcomes to accumulate. Early reporting on case fatality ratio is also biased particularly in older adults who may have longer admissions and are more likely to die.

Acknowledgements

All public and private sector hospitals submitting data to DATCOV

Private hospital groups submitting data to DATCOV:

- Netcare
- Life Healthcare
- Mediclinic Southern Africa
- National Hospital Network (NHN)
- Clinix Health Group
- Lenmed
- Joint Medical Holdings (JMH)





Appendix

Table 16: Percentage incidence change in hospital admissions over 14 days, by district, South Africa, 20 November-4 December 2021.

Province	District	Total admissions	Incidence (per 100k)	New admissions	New admissions incidence (per 100k)	% average change (14 days)
Eastern Cape	Alfred Nzo	2312	277.80	9	1.08	200.00
	Amathole	2837	354.98	10	1.25	400.00
	Buffalo City Metro	9088	1134.76	23	2.87	187.50
	Chris Hani	4505	619.11	8	1.10	33.33
	Joe Gqabi	1000	289.88	5	1.45	100.00
	Nelson Mandela Bay Metro	14635	1206.45	16	1.32	220.00
	O R Tambo	4357	284.37	12	0.78	9.09
	Sarah Baartman	2877	594.64	3	0.62	0.00
Free State	Fezile Dabi	3114	610.44	18	3.53	350.00
	Lejweleputswa	5460	835.37	23	3.52	360.00
	Mangaung Metro	12609	1447.78	50	5.74	127.27
	Thabo Mofutsanyana	4828	631.26	7	0.92	-12.50
	Xhariep	596	460.43	2	1.55	0.00
Gauteng	City of Johannesburg Metro	46001	784.12	485	8.27	113.66
	City of Tshwane Metro	35153	942.67	862	23.12	66.09
	Ekurhuleni Metro	28137	706.57	286	7.18	157.66
	Sedibeng	8252	863.61	79	8.27	295.00
	West Rand	11224	1175.61	109	11.42	179.49
KwaZulu-Natal	Amajuba	3945	691.47	24	4.21	700.00
	eThekweni Metro	32406	813.97	117	2.94	333.33
	Harry Gwala	2140	416.32	1	0.19	-50.00
	iLembe	2695	388.03	8	1.15	14.29
	King Cetshwayo	7645	787.60	31	3.19	181.82
	Ugu	4637	578.38	32	3.99	220.00
	uMgungundlovu	9460	823.01	33	2.87	312.50
	uMkhanyakude	1284	186.92	0	0.00	-100.00
	Umzinyathi	1577	277.85	11	1.94	100.00
	UThukela	2593	363.05	18	2.52	260.00
	Zululand	1875	212.87	11	1.25	175.00
Limpopo	Capricorn	7438	568.67	63	4.82	350.00
	Mopani	3113	262.73	16	1.35	100.00



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	Sekhukhune	1685	141.56	36	3.02	800.00
	Vhembe	2396	167.88	26	1.82	766.67
	Waterberg	2830	381.29	24	3.23	500.00
Mpumalanga	Ehlanzeni	6508	355.87	44	2.41	238.46
	Gert Sibande	6481	521.75	65	5.23	622.22
	Nkangala	5695	353.97	88	5.47	166.67
North West	Bojanala Platinum	10082	522.88	84	4.36	300.00
	Dr Kenneth Kaunda	14903	1868.21	91	11.41	203.33
	Dr Ruth Segomotsi Mompoti	2011	425.09	6	1.27	-33.33
	Ngaka Modiri Molema	1971	216.63	7	0.77	75.00
Northern Cape	Frances Baard	4628	1115.42	13	3.13	116.67
	John Taolo Gaetsewe	1446	532.64	2	0.74	0.00
	Namakwa	1069	924.64	9	7.78	50.00
	Pixley Ka Seme	820	388.84	0	0.00	-100.00
	ZF Mgcawu	2032	725.97	6	2.14	100.00
Western Cape	Cape Winelands	11189	1188.72	26	2.76	-13.33
	Central Karoo	1126	1499.07	1	1.33	-50.00
	City of Cape Town Metro	68809	1494.23	140	3.04	18.64
	Garden Route	11126	1783.99	12	1.92	-7.69
	Overberg	2659	886.61	0	0.00	-100.00
	West Coast	3749	813.56	7	1.52	75.00





Table 17: Number of reported COVID-19 admissions and in-hospital deaths by age and gender, South Africa, 5 March 2020-4 December 2021.

Age (Years)	Group	ADMISSIONS				DEATHS			
		Female	Male	Unknown	Total	Female	Male	Unknown	Total
0-4		3702	4557	26	8285	135	144	2	281
5-9		1077	1362	7	2446	23	21	0	44
10-14		1761	1694	6	3461	58	47	0	105
15-19		5071	2707	2	7780	122	110	0	232
20-24		7880	3937	4	11821	278	216	1	495
25-29		12964	5880	10	18854	632	408	0	1040
30-34		17107	9800	6	26913	1082	896	1	1979
35-39		18459	13538	18	32015	1619	1495	4	3118
40-44		17349	15425	10	32784	2020	2081	0	4101
45-49		19770	19413	12	39195	2978	3121	1	6100
50-54		23327	21637	9	44973	4126	4230	1	8357
55-59		26057	23550	12	49619	5882	5855	5	11742
60-64		22855	20845	15	43715	6300	6480	4	12784
65-69		19587	17370	13	36970	6517	6044	5	12566
70-74		16324	14295	17	30636	5702	5520	4	11226
75-79		12074	9855	9	21938	4470	4135	2	8607
80-84		9083	6206	7	15296	3632	2784	3	6419
85-89		4798	2929	2	7729	1984	1432	0	3416
90-94		2063	999	1	3063	963	528	0	1491
>=95		628	308	2	938	303	134	0	437
Unknown		1166	1145	45	2356	69	111	0	180
Total		243102	197452	233	440787	48895	45792	33	94720