

COVID-19 SENTINEL HOSPITAL SURVEILLANCE UPDATE



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 49 2020

OVERVIEW

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 to 5 December 2020.

HIGHLIGHTS

- As of 5 December, 111 652 COVID-19 admissions and 19 254 deaths were reported from 615 facilities (365 public-sector and 250 private-sector) in all nine provinces of South Africa. DATCOV coverage is now 99% of public and 100% of private hospitals that have had COVID-19 admissions. New hospitals that have enrolled need to capture historical admissions.
- There has been a resurgence in admissions and deaths in Eastern Cape for eight weeks with admissions seeming to have decreased in the past two weeks. The resurgence was located mainly in Nelson Mandela Metro district and Buffalo City districts.
- There has been a resurgence in admissions in Western Cape for five weeks in four out of six districts; increases in admissions in KwaZulu-Natal for the past two weeks in five of 11 districts; and increases in admissions in Gauteng for the past week, in four of five districts.

METHODS



DATCOV, sentinel hospital surveillance for COVID-19 admissions, was 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 who was admitted to a DATCOV sentinel hospital. 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 rates, StatsSA mid-year population estimates for 2020 were utilised.

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 5 December 2020, a total of 615 facilities submitted data on hospitalised COVID-19 cases, 365 from public sector and 250 from private sector (Table 1). This reflects 99% and 100% coverage of all public and private hospitals respectively 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-5 December 2020

Facilities reporting	Public	Private
Eastern Cape	84	18
Free State	35	20
Gauteng	38	90
KwaZulu-Natal	62	45
Limpopo	34	7
Mpumalanga	26	9
North West	13	12
Northern Cape	16	8
Western Cape	57	41
South Africa	365	250

RESULTS

Epidemiological and geographic trends in admissions

From 5 March to 5 December, a total of 111 652 COVID-19 admissions were reported from 615 facilities in all nine provinces of South Africa. Reported COVID-19 admissions decreased after the peak in weeks 29 and 30 but in the last eight weeks there has been an increase in admissions in both public and private sector (Figure 1). The decreases in the most recent week may reflect delays in data submission.

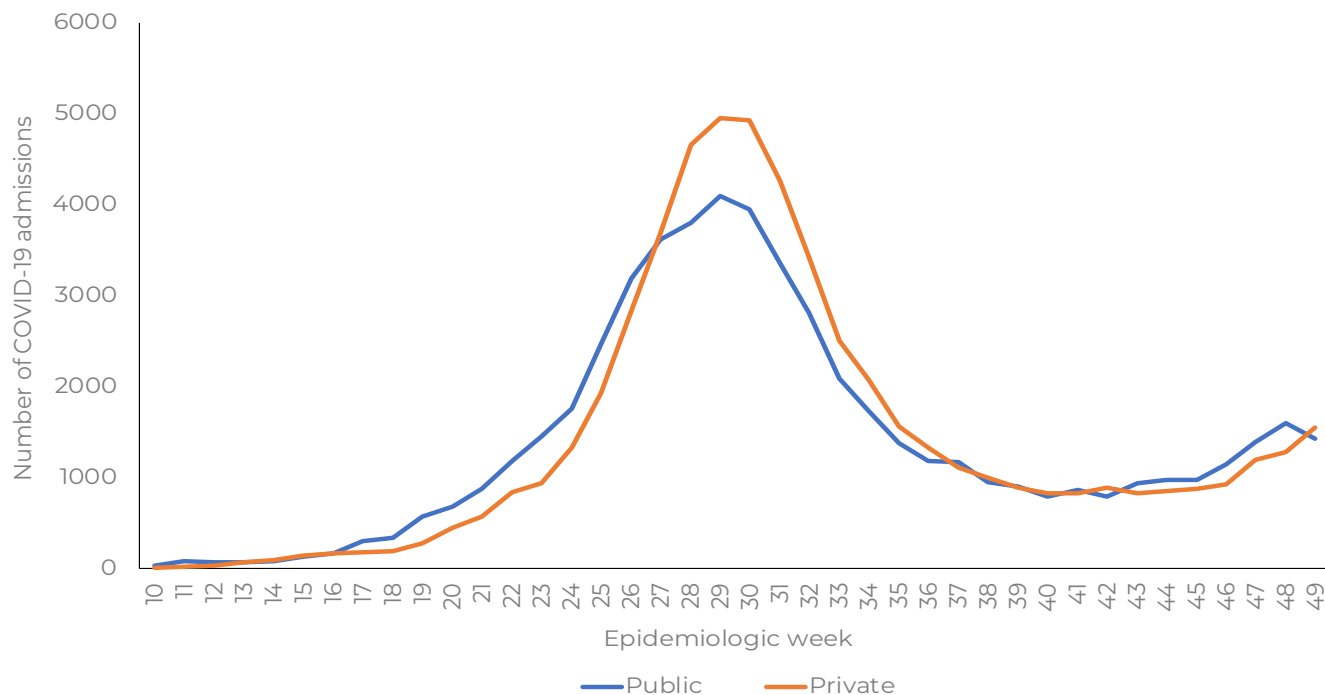
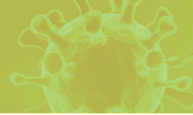


Figure 1: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, South Africa, 5 March-5 December 2020, n=111 652

The majority of admissions were recorded in four provinces, Gauteng (31 774; 28.5%), followed by Western Cape (22 711; 20.3%), Eastern Cape (18 496; 16.6%) and KwaZulu-Natal (17 307; 15.5%) provinces (Figure 2). Admissions have increased in Eastern Cape since week 41, Western Cape since week 43, KwaZulu-Natal since week 48 and Gauteng since week 49.

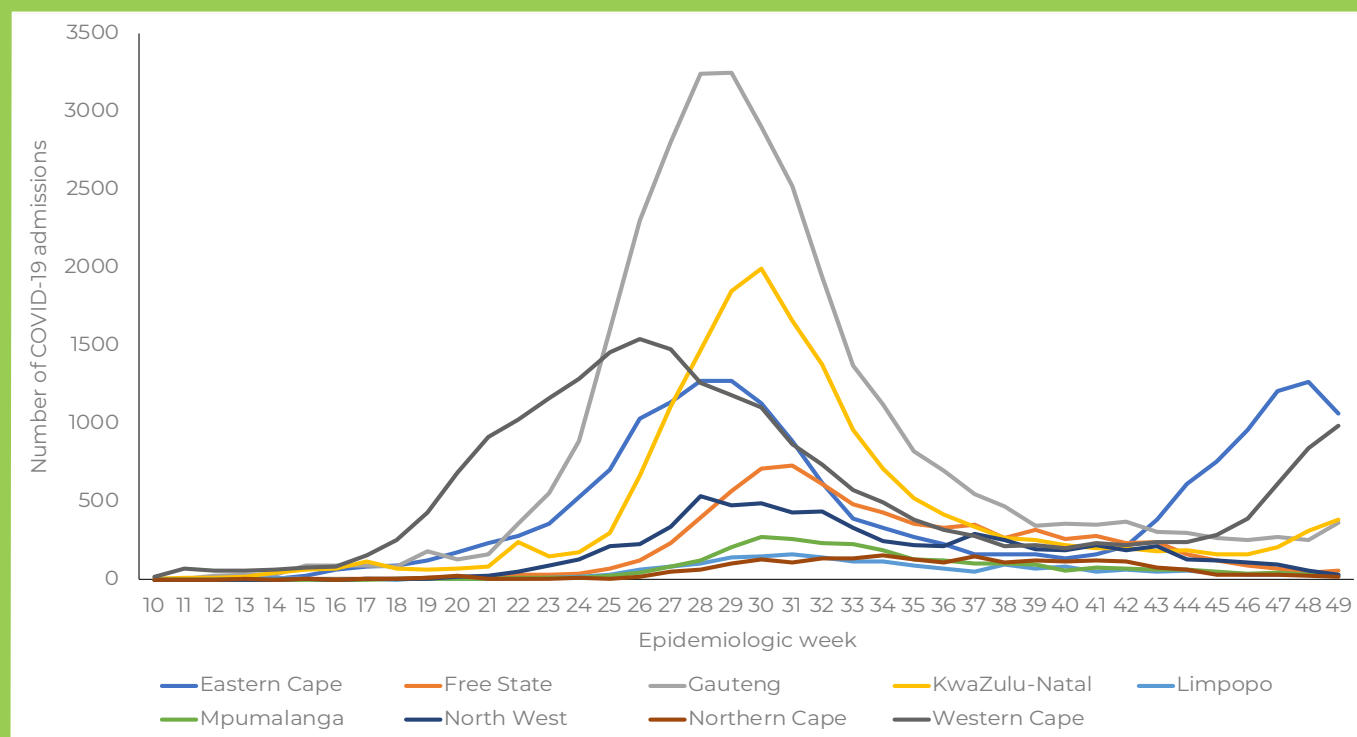


Figure 2: Number of reported COVID-19 admissions, by province and epidemiologic week of diagnosis, South Africa, 5 March-5 December 2020, n=111 652

Epidemiological and geographic trends in in-hospital mortality

Of the 111 652 COVID-19 admissions, there were 19,254 in-hospital deaths. Most deaths have been reported in the public sector. Reported COVID-19 deaths decreased after the peak in week 30 but in the last six weeks there has been an increase in deaths in both public and private sector (Figure 3).

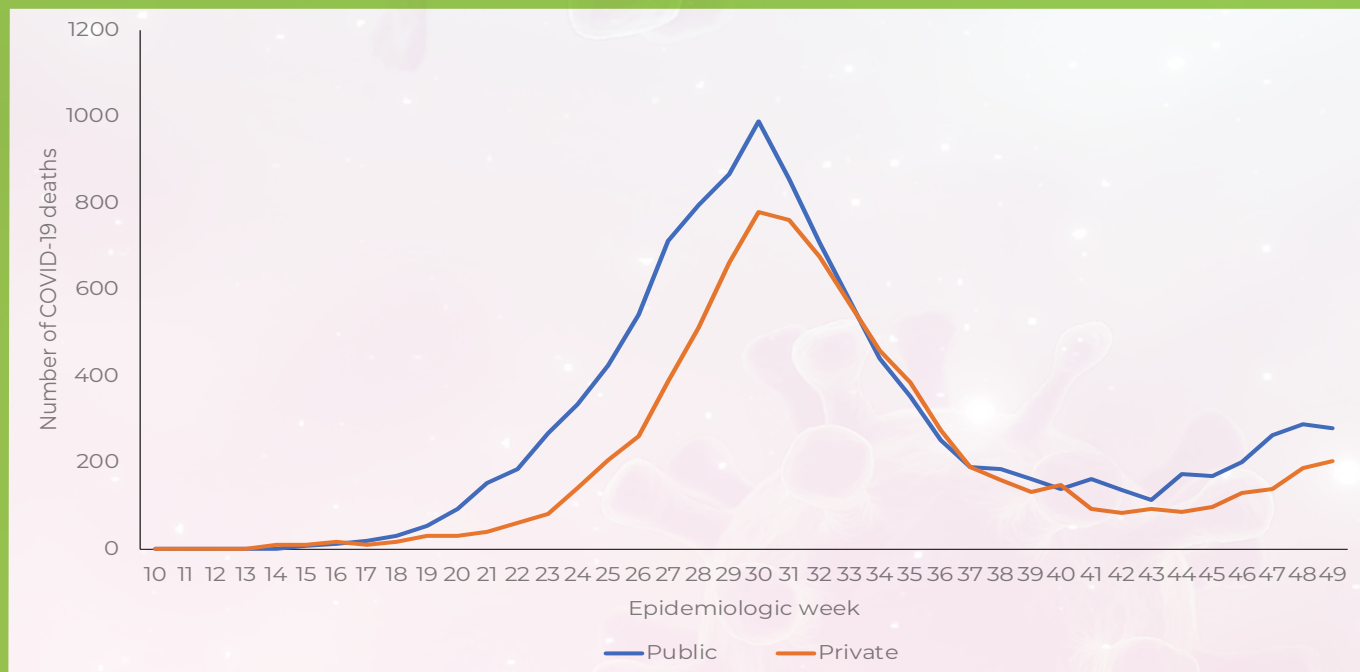


Figure 3: Number of COVID-19 deaths reported per week by health sector and epidemiologic week, South Africa, 5 March-5 December 2020, n=19 254

Most deaths were reported in Gauteng (4 798; 24.9%), followed by Eastern Cape (4 670; 24.3%), Western Cape (4 010; 20.8%), and KwaZulu-Natal (2 631; 13.7%) (Figure 4). An increase in deaths was reported in Eastern Cape since week 42, Western Cape since week 45 and KwaZulu-Natal since week 47.

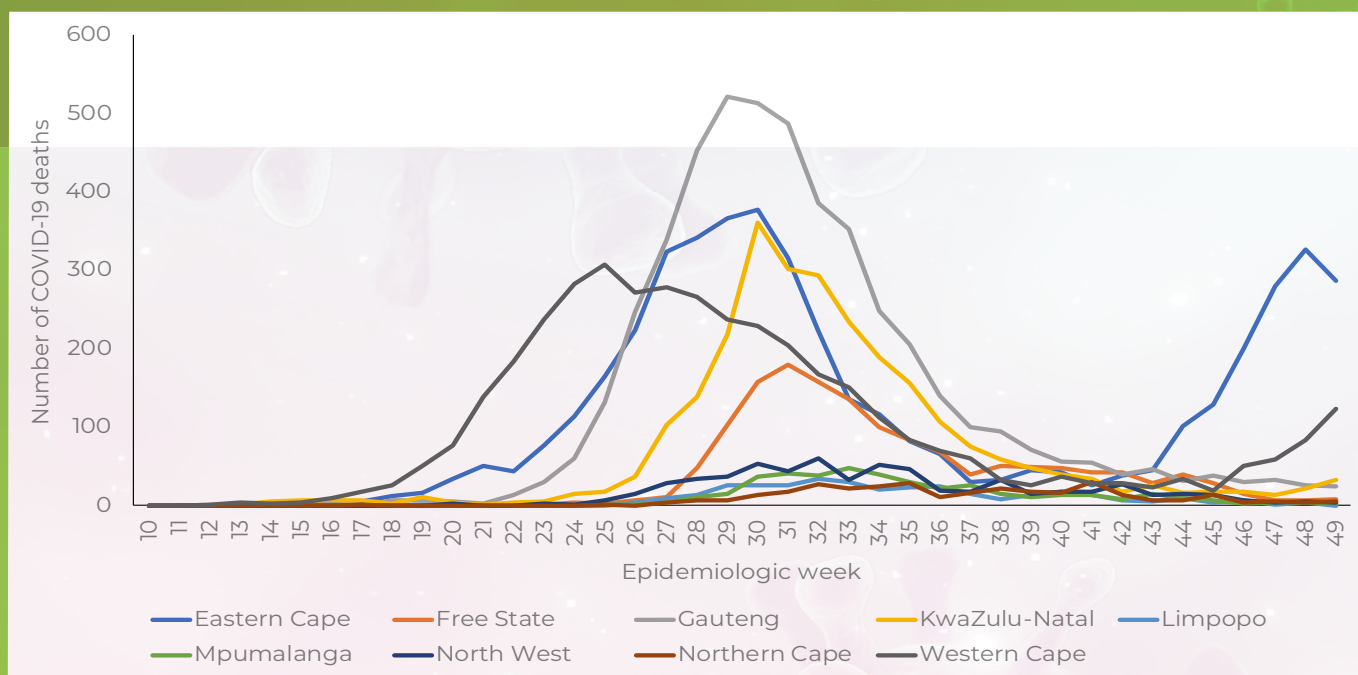


Figure 4: Number of reported COVID-19 deaths, by province and epidemiologic week of death, South Africa, 5 March-5 December 2020, n=19 254

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

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

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	6 734 001	18 566	275,7	4 740	70,4
Free State	2 928 903	7 806	266,5	1 539	52,5
Gauteng	15 488 137	31 840	205,6	4 858	31,4
KwaZulu-Natal	11 531 628	17 349	150,4	2669	23,1
Limpopo	5 852 553	2 028	34,7	337	5,8
Mpumalanga	4 679 786	2 815	60,2	423	9,0
North West	4 108 816	6 753	164,4	776	18,9
Northern Cape	1 292 786	2 210	170,9	316	24,4
Western Cape	7 005 741	22 717	324,3	4012	57,3
South Africa	59 622 350	112 084	188,0	19 670	33,0

*StatsSA mid-year population estimates 2020

MONITORING FOR RESURGENCE

The number of COVID-19 admissions increased in five provinces from week 48 to week 49, Free State, Gauteng, KwaZulu-Natal, Mpumalanga and Western Cape provinces. The highest proportion of new admissions and the highest incidence risk of new admissions were in Eastern Cape and Western Cape (Table 3).

Table 3: Percentage change in COVID-19 admissions, epidemiological week 48 to week 49, by province, South Africa

Province	Hospital admissions		Percentage change in admissions	Percentage of total new admissions	Weekly incidence risk of new admissions /100 000 persons
	Week 48	Week 49*			
Eastern Cape	1266	1064	-16	35,8	15,8
Free State	44	59	34	2,0	2,0
Gauteng	256	365	43	12,3	2,4
KwaZulu-Natal	314	387	23	13,0	3,4
Limpopo	30	26	-13	0,9	0,4
Mpumalanga	33	34	3	1,1	0,7
North West	58	34	-41	1,1	0,8
Northern Cape	26	18	-31	0,6	1,4
Western Cape	843	984	17	33,1	14,0
South Africa	2 870	2 971	4	100,0	5,0

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

Amongst the top ten districts, Nelson Mandela Metro has the highest cumulative incidence risk of COVID-19 admissions (Table 4).

Table 4: Number and cumulative incidence risk of COVID-19 hospitalisations per 100 000 persons by district, South Africa, 5 March-5 December 2020

Districts*	Province	Population Mid-2020	Cumulative hospital admissions	Cumulative Incidence Risk of Admissions/ 100 000
Nelson Mandela Bay Metro	Eastern Cape	1 213 060	8121	669,5
Dr Kenneth Kaunda	Eastern Cape	800 874	4 248	530,4
Buffalo City Metro	North West	797 716	4 231	530,4
Mangaung Metro	Free State	870 920	4 163	478,0
Frances Baard	Western Cape	623 658	2 377	381,1
City of Cape Town Metro	Western Cape	4 604 986	16 846	365,8
Garden Route	Northern Cape	414 911	1 475	355,5
Lejweleputswa	Free State	653 601	1 825	279,2
West Rand	Gauteng	954 737	2 652	277,8
eThekwin Metro	KwaZulu-Natal	3 981 205	9 813	246,5

* Location of hospital is used and not patient address

There were 23 districts across the country that reported increased number of admissions from week 48 to week 49 (Table 5), including five districts from KwaZulu-Natal and four each from Western Cape and Gauteng. In many of these districts the increases were small but the larger increases in COVID-19 admissions in Ugu, uMgungundlovu, Harry Gwala, City of Tshwane Metro, City of Johannesburg, Ekurhuleni, Cape Winelands and City of Cape Town, must be closely monitored.

Table 5: Districts with positive increases in admissions, epidemiologic week 48 to week 49, South Africa

Districts*	Province	Cumulative hospital admissions	Hospital admissions		Percentage change in admissions
			Week 48	Week 49*	
Dr Ruth Segomotsi Mompati	North West	380	1	4	300
Lejweleputswa	Free State	1 825	5	11	120
Ugu	KwaZulu-Natal	933	37	81	119
uMgungundlovu	KwaZulu-Natal	2 210	24	50	108
Harry Gwala	KwaZulu-Natal	341	16	33	106
UThukela	KwaZulu-Natal	627	4	8	100
City of Tshwane Metro	Gauteng	7 337	66	119	80
Central Karoo	Western Cape	172	10	17	70
Overberg	Western Cape	443	18	30	67
Mangaung Metro	Free State	4 163	20	32	60
Pixley Ka Seme	Northern Cape	81	5	8	60
Amajuba	KwaZulu-Natal	794	2	3	50
Capricorn	Limpopo	998	10	14	40
Cape Winelands	Western Cape	2 253	67	93	39
City of Johannesburg Metro	Gauteng	12 948	98	131	34
Thabo Mofutsanyana	Free State	1 009	9	12	33
Ekurhuleni Metro	Gauteng	7 044	40	53	33
Nkangala	Mpumalanga	837	10	13	30
West Rand	Gauteng	2 652	41	52	27
Alfred Nzo	Eastern Cape	673	21	26	24
City of Cape Town Metro	Western Cape	16 846	482	592	23
Buffalo City Metro	Eastern Cape	4 248	262	295	13
Ehlanzeni	Mpumalanga	1 097	12	13	8

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

Eastern Cape

Since week 40 there has been an increase in admissions reported in the Eastern Cape, seen across both public and private sectors (Figure 5). The decrease in the public sector the most recent week may reflect a real decrease or delays in data submission.



Figure 5: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Eastern Cape, 5 March-5 December 2020

The increase in admissions in Eastern Cape is driven predominantly by admissions in Nelson Mandela Metro which has exceeded the numbers of admissions at the previous peak, and Buffalo City Metro (Figure 6). Admissions have decreased or shown a slower rate of increase in all districts in the last two weeks.

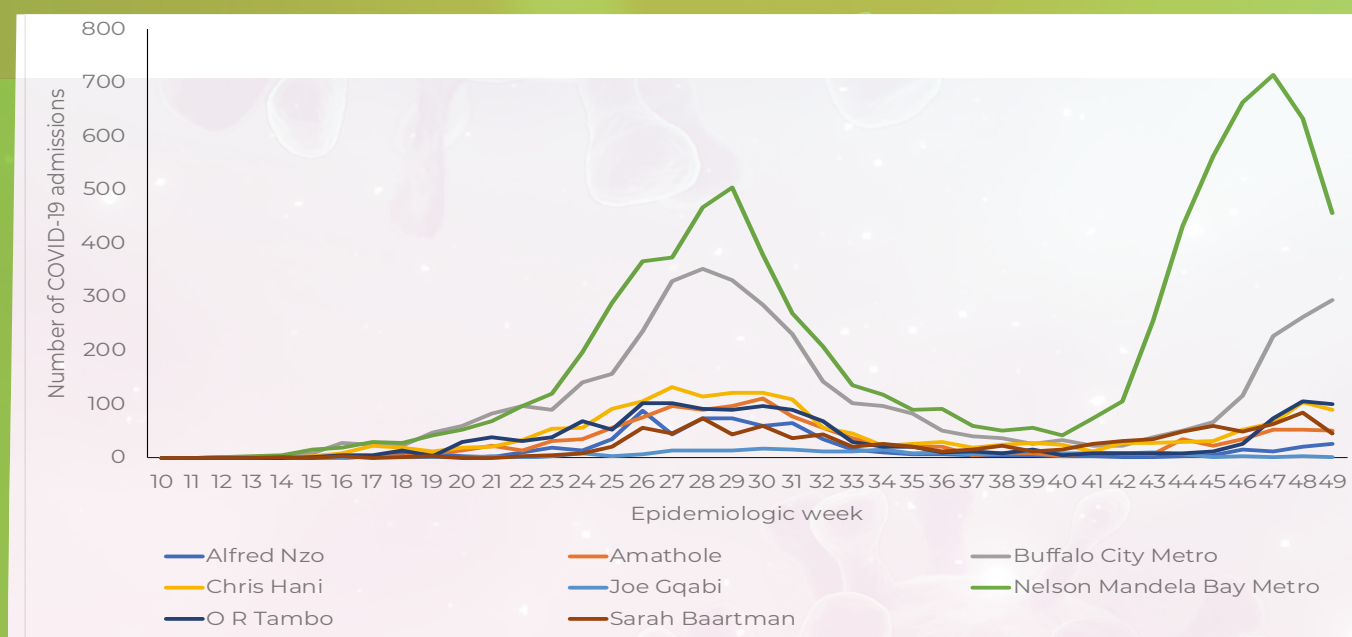


Figure 6: Number of reported COVID-19 admissions, by district and epidemiologic week, Eastern Cape, 5 March-28 November 2020

The only districts with an increase in the number of COVID-19 admissions was Alfred Nzo and Buffalo City Metro district from week 48 to week 49. The highest proportion of new admissions and the highest incidence risk of new admissions was in Nelson Mandela Metro followed by Buffalo City (Table 6).

Table 6: Percentage change in COVID-19 admissions and deaths, epidemiologic week 48 to week 49, by district, Eastern Cape

District	Cumulative hospital admissions	Admissions Week 48	Admissions Week 49	Percentage change in admissions	Percentage of total new admissions	Incidence risk of new admissions /100 000 persons
Alfred Nzo	673	21	26	24	2,4	0,3
Amathole	1 180	53	50	-6	4,7	0,6
Buffalo City Metro	4 248	262	295	13	27,7	3,5
Chris Hani	1 749	104	89	-14	8,4	1,1
Joe Gqabi	224	3	1	-67	0,1	0,0
Nelson Mandela Bay Metro	8 121	634	457	-28	43,0	3,5
O R Tambo	1 391	105	100	-5	9,4	0,6
Sarah Baartman	980	84	46	-45	4,3	0,9

There has been an increase in deaths in Eastern Cape, driven predominantly by deaths in Nelson Mandela Metro which has exceeded the numbers of deaths at the previous peak (Figure 7). There are also increases in deaths in other districts.

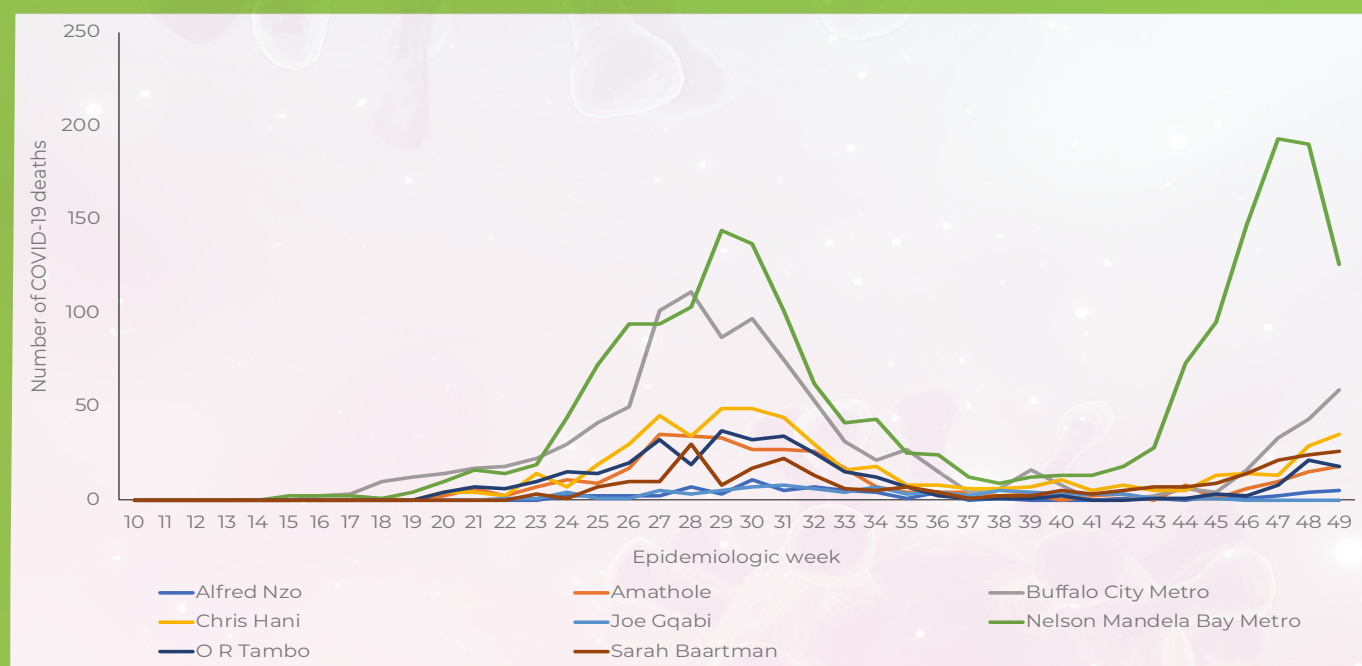


Figure 7: Number of reported COVID-19 deaths, by district and epidemiologic week, Eastern Cape, 5 March-5 December 2020

Western Cape

Since week 43 there has been an increase in admissions reported in the Western Cape, seen across both public and private sectors (Figure 8).

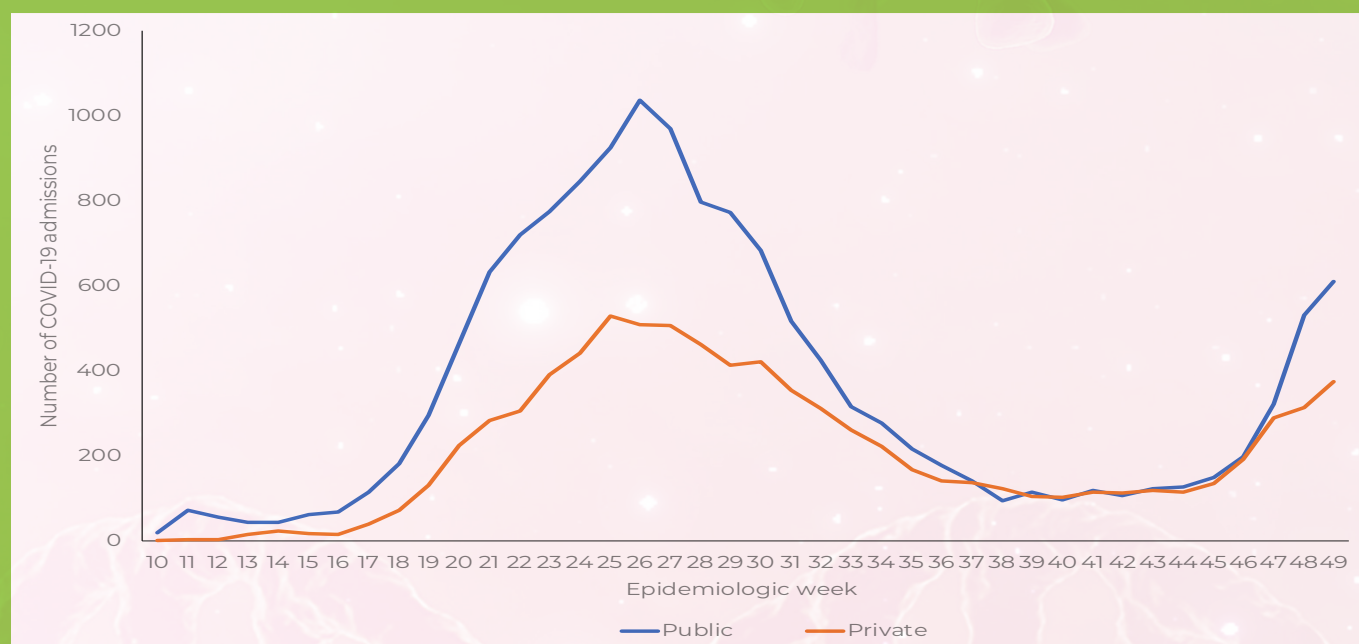


Figure 8: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Western Cape, 5 March-5 December 2020

The increase in admissions in Western Cape is driven predominantly by admissions in Garden Route and City of Cape Town Metro (Figure 9).

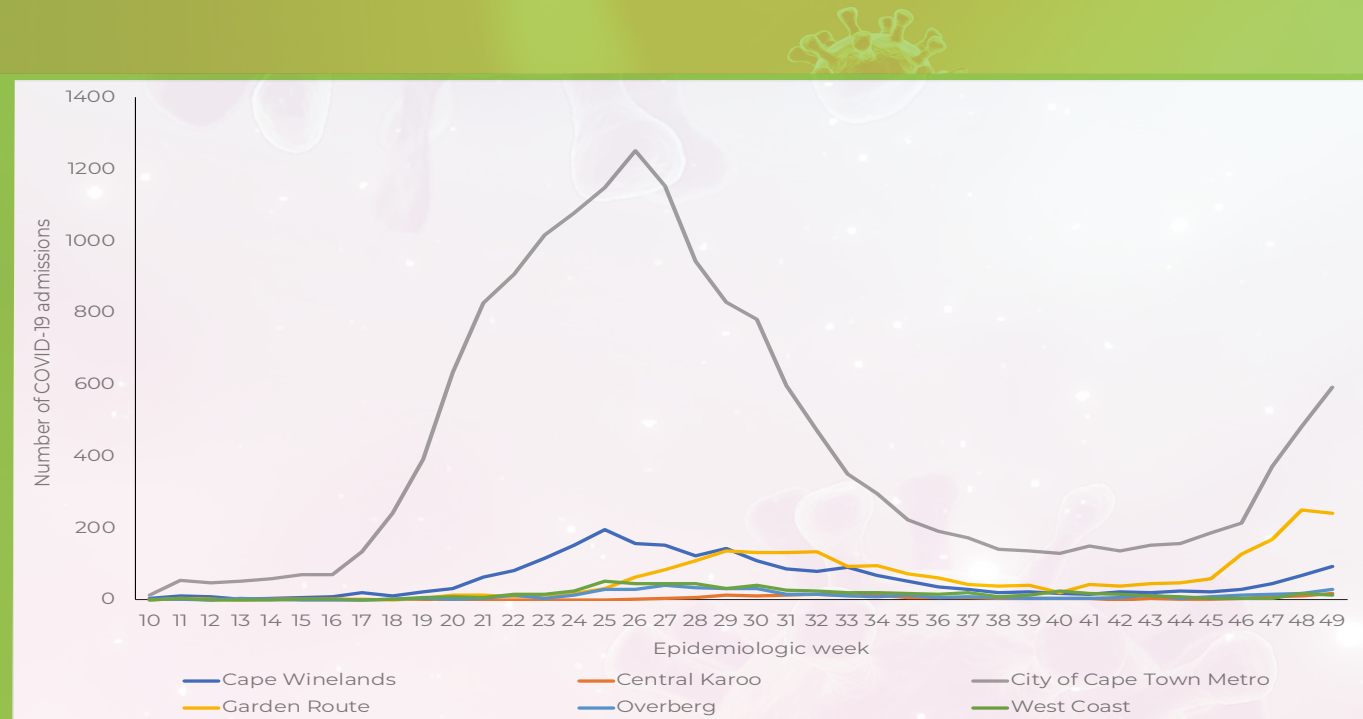


Figure 9: Number of reported COVID-19 admissions, by district and epidemiologic week, Western Cape, 5 March-5 December 2020

The number of COVID-19 admissions increased in four districts from week 48 to week 49, Cape Winelands, Central Karoo, City of Cape Town and Overberg districts. The highest proportion of new admissions were in City of Cape Town and Garden Route (Table 7).

Table 7: Percentage change in COVID-19 admissions and deaths, epidemiologic week 48 to week 49, by district, Western Cape

Districts	Cumulative hospital admissions	Admissions Week 48	Admissions Week 49	Percentage change in admissions	Percentage of total new admissions	Incidence risk of new admissions /100 000 persons
Cape Winelands	2 253	67	93	39	9,5	1,0
Central Karoo	172	10	17	70	1,7	2,3
City of Cape Town Metro	16 846	482	592	23	60,2	1,3
Garden Route	2 377	249	240	-4	24,4	3,9
Overberg	443	18	30	67	3,0	1,0
West Coast	626	17	12	-29	1,2	0,3

There has been an increase in deaths in Western Cape, predominantly in Garden Route and City of Cape Town (Figure 10).

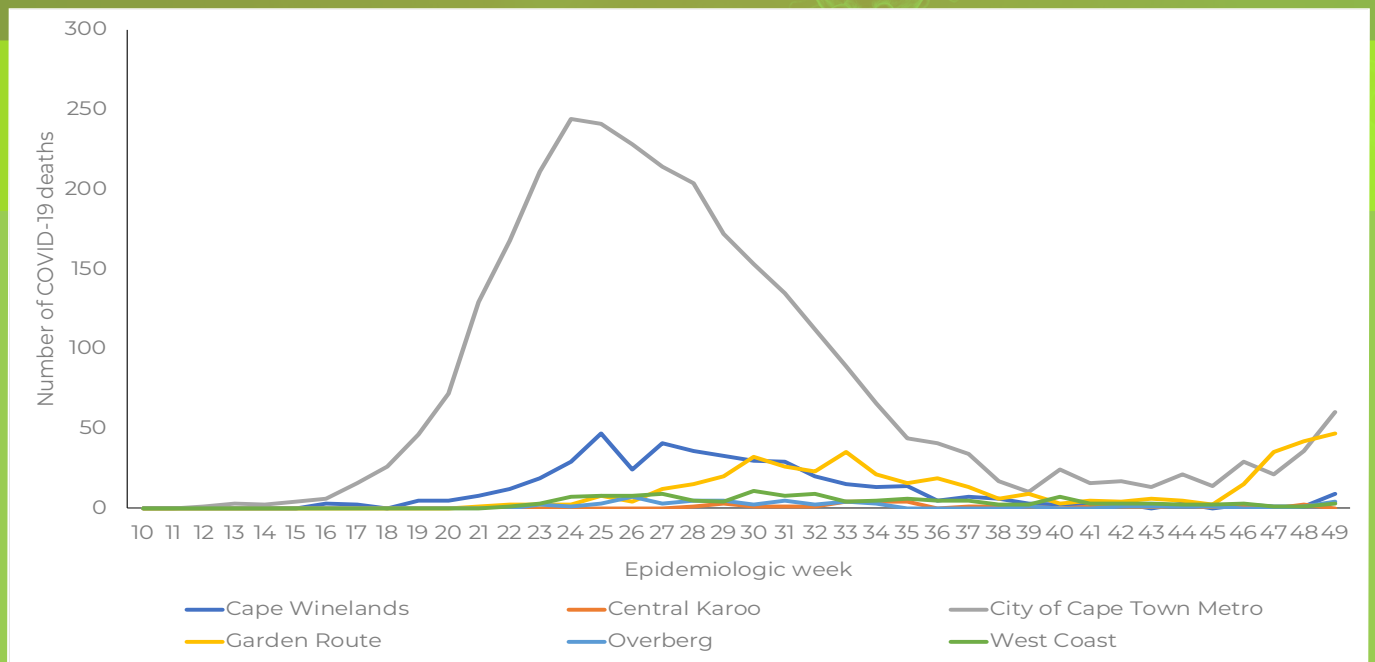
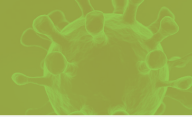


Figure 10: Number of reported COVID-19 deaths, by district and epidemiologic week, Western Cape, 5 March-5 December 2020

KwaZulu-Natal

Since week 46 there has been an increase in admissions reported in the KwaZulu-Natal, in the private sector (Figure 11).

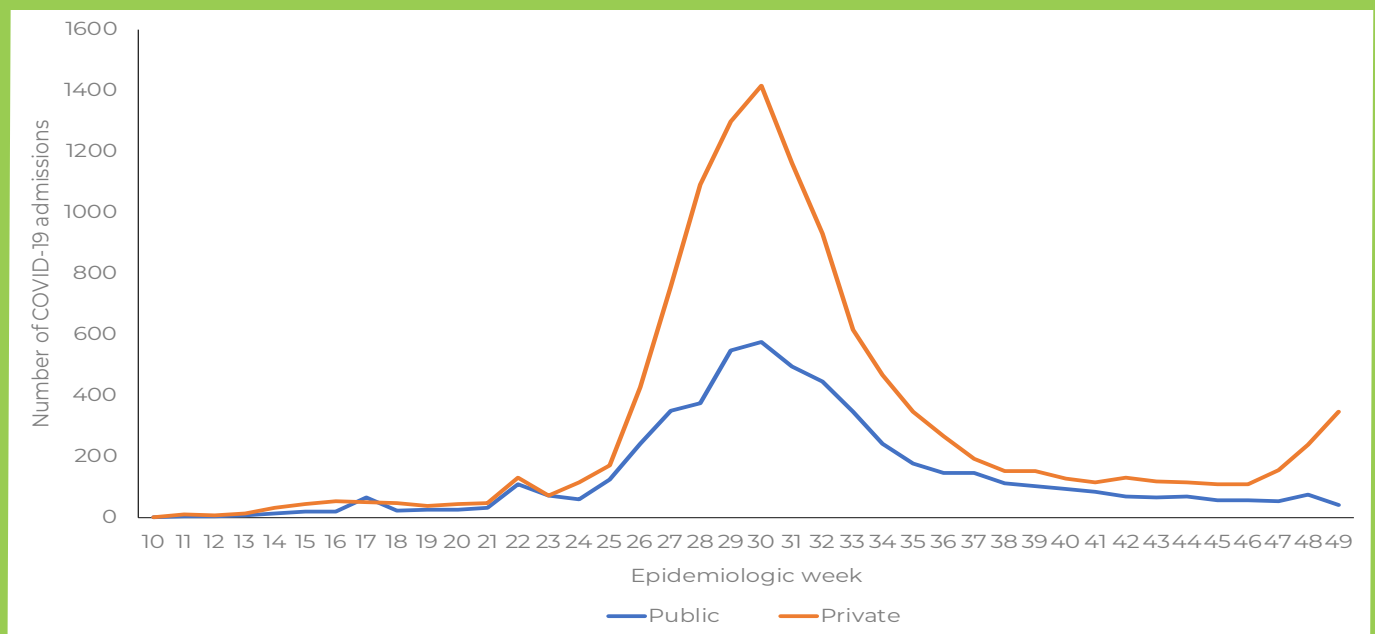


Figure 11: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, KwaZulu-Natal, 5 March-5 December 2020

The increase in admissions in KwaZulu-Natal is driven predominantly by admissions in eThekweni Metro (Figure 12).

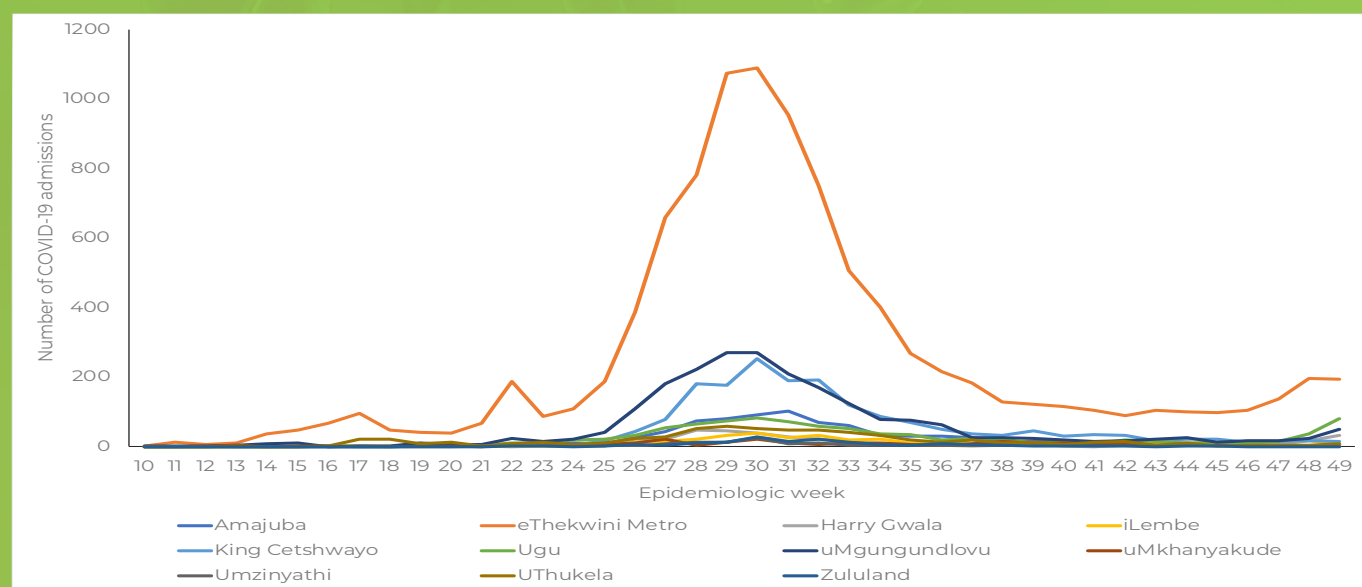


Figure 12: Number of reported COVID-19 admissions, by district and epidemiologic week, KwaZulu-Natal, 5 March-5 December 2020

The number of COVID-19 admissions increased in five districts from week 48 to week 49, Amajuba, Harry Gwala, Ugu, uMgungundlovu and uThukela districts. The highest proportion of new admissions were in eThekweni and Ugu (Table 8).

Table 8: Percentage change in COVID-19 admissions and deaths, epidemiologic week 48 to week 49, by district, KwaZulu-Natal

Districts	Cumulative hospital admissions	Admissions Week 48	Admissions Week 49	Percentage change in admissions	Percentage of total new admissions	Incidence risk of new admissions /100 000 persons
Amajuba	794	2	3	50	0,8	0,1
eThekweni Metro	9 813	196	193	-2	49,9	1,3
Harry Gwala	341	16	33	106	8,5	1,7
iLembe	373	17	5	-71	1,3	0,2
King Cetshwayo	1 807	16	14	-13	3,6	0,4
Ugu	933	37	81	119	20,9	2,6
uMgungundlovu	2 210	24	50	108	12,9	1,1
uMkhanyakude	199	2	0	-100	0,0	0,0
Umzinyathi	104	0	0	0	0,0	0,0
UThukela	627	4	8	100	2,1	0,3
Zululand	148	0	0	0	0,0	0,0

There has been a small increase in deaths in KwaZulu-Natal, predominantly in eThekweni (Figure 13).

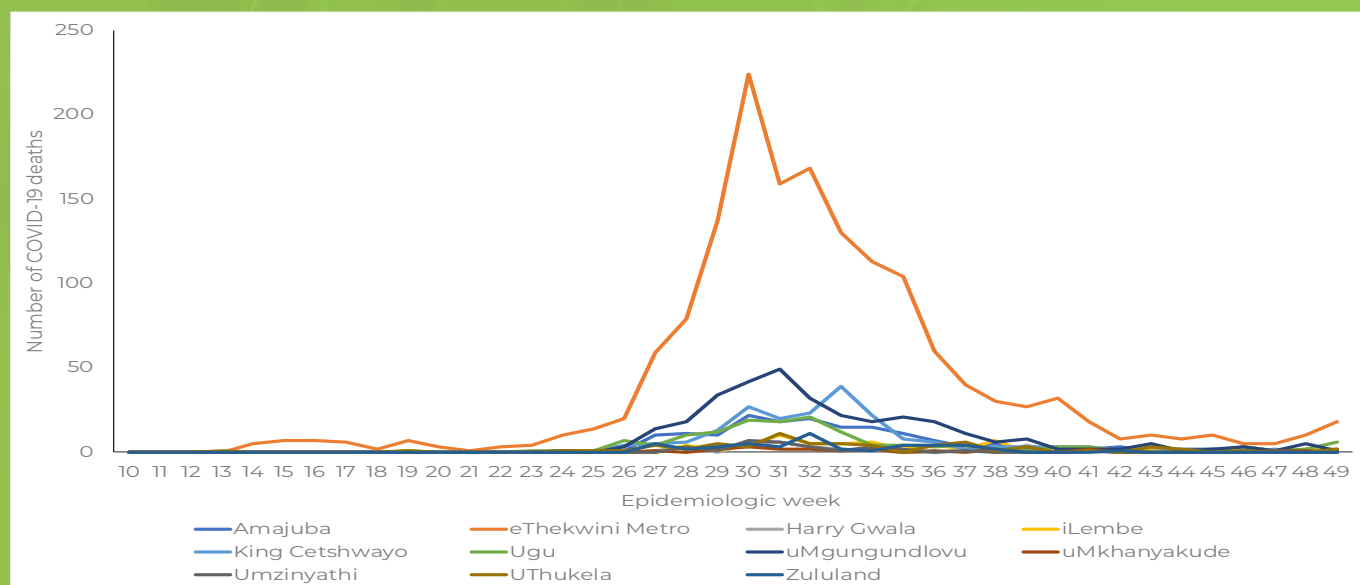


Figure 13: Number of reported COVID-19 deaths, by district and epidemiologic week, KwaZulu-Natal, 5 March-5 December 2020

Gauteng

Since week 48 there has been an increase in admissions reported in the Gauteng, in the private sector (Figure 14).

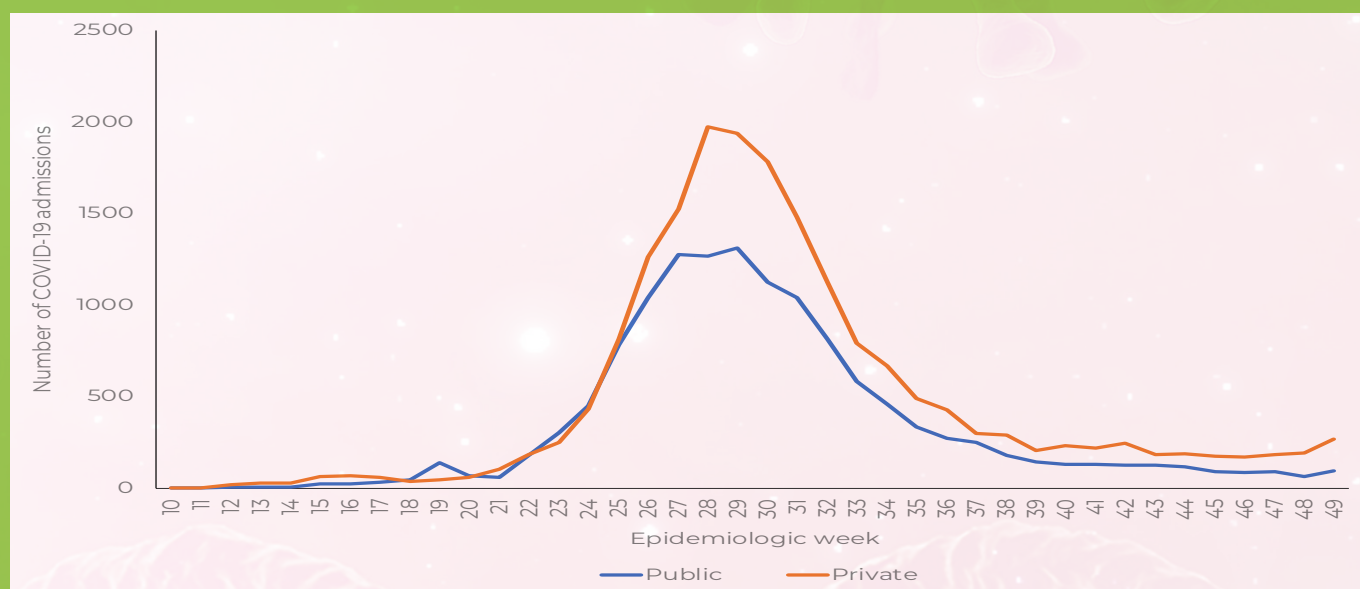


Figure 14: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Gauteng, 5 March-5 December 2020

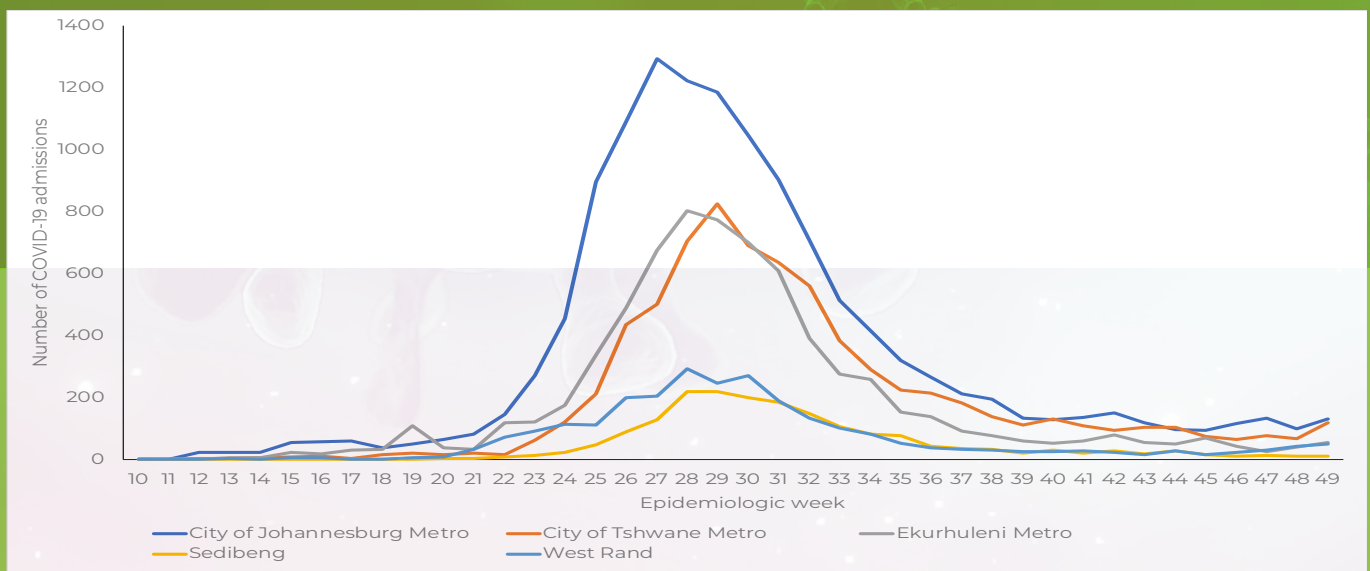


Figure 15: Number of reported COVID-19 admissions, by district and epidemiologic week, Gauteng, 5 March-5 December 2020

The increase in admissions in Gauteng is driven predominantly by admissions in City of Johannesburg and Tshwane Metros (Figure 15).

Table 9: Percentage change in COVID-19 admissions and deaths, epidemiologic week 48 to week 49, by district, Gauteng

Districts	Cumulative hospital admissions	Admissions Week 48	Admissions Week 49	Percentage change in admissions	Percentage of total new admissions	Incidence risk of new admissions /100 000 persons
City of Johannesburg Metro	12 948	98	131	34	35,9	0,6
City of Tshwane Metro	7 337	66	119	80	32,6	0,9
Ekurhuleni Metro	7 044	40	53	33	14,5	0,4
Sedibeng	1 859	11	10	-9	2,7	0,3
West Rand	2 652	41	52	27	14,2	1,5

There has been no large increase in deaths in Gauteng (Figure 16).

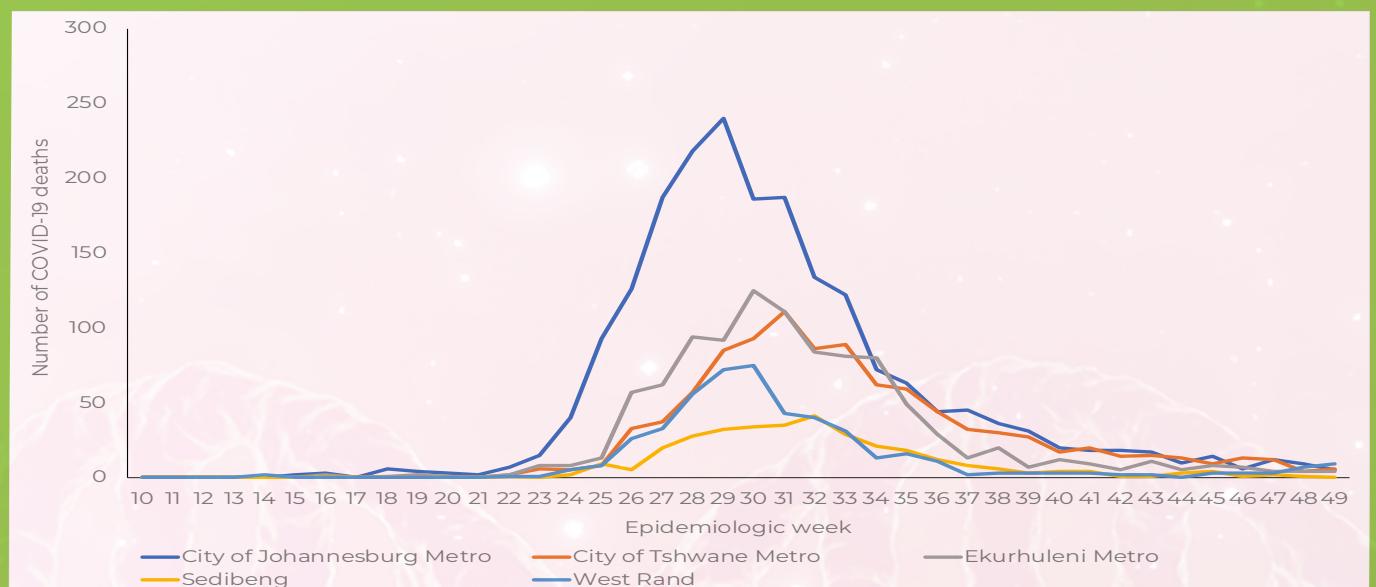
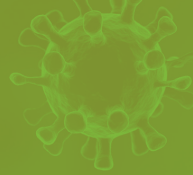


Figure 16: Number of reported COVID-19 deaths, by district and epidemiologic week, Gauteng, 5 March-5 December 2020

LIMITATIONS



DATCOV now includes reporting from all hospitals with COVID-19 admissions but many hospitals are yet to reach complete submission of historic data. DATCOV only reports hospital-based admissions and deaths and therefore does not include deaths occurring outside hospitals. 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.

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)

COVID-19 SENTINEL HOSPITAL SURVEILLANCE UPDATE

WEEK 49 2020

APPENDIX

TABLE 10: Number o of reported covid-19 admissions and deaths by age and gender, south africa, 5
march-5 December 2020

Age (years)	ADMISSIONS				DEATHS			
	Female	Male	Unknown	Total	Female	Male	Unknown	Total
0-4	674	845	2	1 521	19	19	0	38
5-9	202	267	0	469	2	7	0	9
10-14	394	347	0	741	6	8	0	14
15-19	1 188	636	2	1 826	25	28	0	53
20-24	1 944	1 019	3	2 966	48	44	0	92
25-29	3 584	1 652	2	5 238	129	71	1	201
30-34	4 861	2 762	0	7 623	230	160	0	390
35-39	5 394	3 595	0	8 989	328	297	0	625
40-44	5 175	4 227	1	9 403	401	461	0	862
45-49	5 715	5 024	3	10 742	593	644	1	1 238
50-54	6 467	5 685	1	12 153	835	917	0	1 752
55-59	6 631	5 802	3	12 436	1 177	1 243	0	2 420
60-64	5 544	5 163	1	10 708	1 255	1 466	0	2 721
65-69	4 325	3 933	2	8 260	1 233	1 278	0	2 511
70-74	3 422	3 084	4	6 510	1 009	1 090	1	2 100
75-79	2 474	2 145	0	4 619	828	842	0	1 670
80-84	1 826	1 305	2	3 133	621	533	0	1 154
85-89	1 110	670	0	1 780	408	309	0	717
90-94	497	271	1	769	213	146	0	359
>95	177	110	0	287	65	30	0	95
Unknown	760	614	105	1 479	111	120	2	233
TOTAL	62 364	49 156	132	111 652	9 536	9 713	5	19 254