

# COVID-19 SENTINEL HOSPITAL SURVEILLANCE UPDATE

SOUTH AFRICA WEEK 47 2020



NATIONAL INSTITUTE FOR  
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

## 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 21 November 2020.

## HIGHLIGHTS

- As of 21 November, 102,980 COVID-19 admissions were reported from 608 facilities (360 public-sector and 248 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 in Eastern Cape for six weeks. The resurgence is located mainly in Nelson Mandela Metro district, in public and private hospitals. There has also been a corresponding increase in in-hospital deaths in Nelson Mandela Metro district during this time. There are increased admissions in other Eastern Cape districts also, including Sarah Baartman and Buffalo City districts.
- There is a resurgence in admissions in Western Cape for three weeks, located mainly in Garden Route and City of Cape Town Metro.

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## 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 21 November 2020, a total of 608 facilities submitted data on hospitalised COVID-19 cases, 360 from public sector and 248 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-21 November 2020

Name of province	Public Sector	Private Sector
Eastern Cape	82	17
Free State	35	20
Gauteng	38	90
KwaZulu-Natal	62	45
Limpopo	34	7
Mpumalanga	25	9
North West	13	12
Northern Cape	15	8
Western Cape	56	40
<b>South Africa</b>	<b>360</b>	<b>248</b>

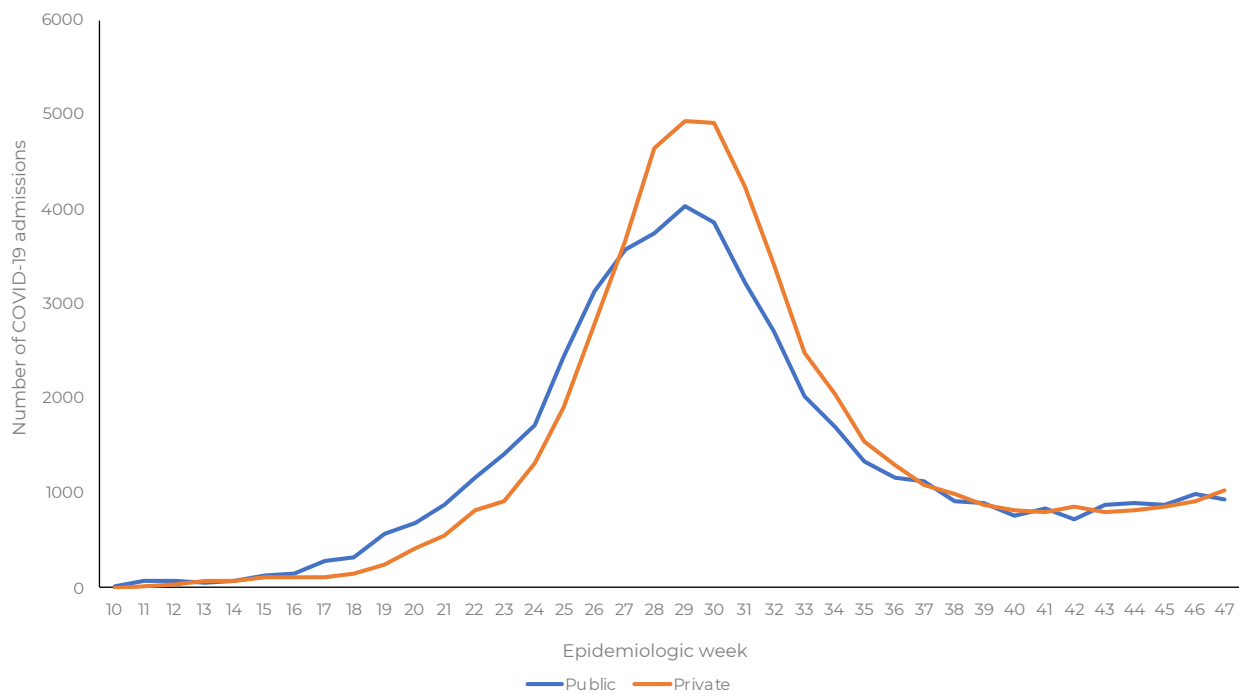
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## RESULTS

### Epidemiological and geographic trends in admissions

From 5 March to 21 November, a total of 102,980 COVID-19 admissions were reported from 608 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 six weeks there has been an increase in admissions in both public and private sector (Figure 1).

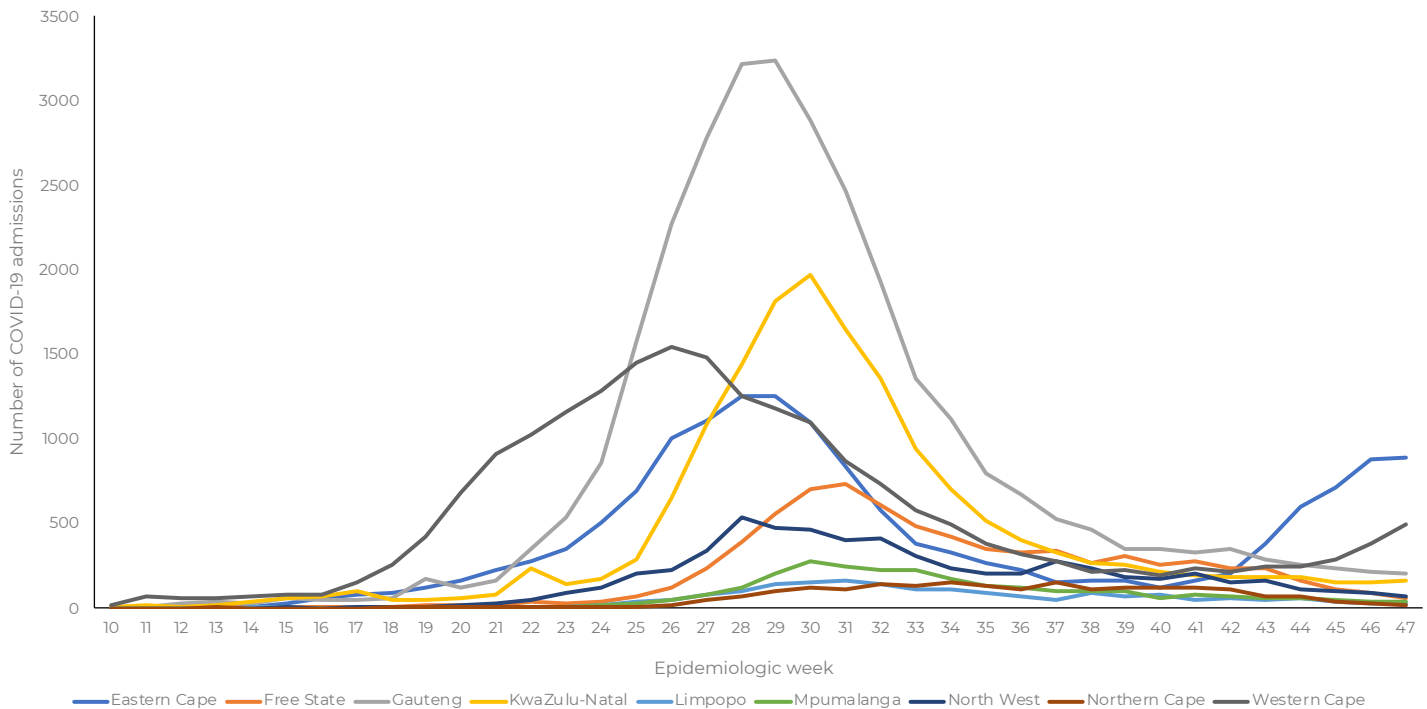


**Figure 1.** Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, 5 March-21 November 2020, n=102,980

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The majority of admissions were recorded in four provinces, Gauteng (30,412; 29.5%), followed by Western Cape (20,764; 20.2%), KwaZulu-Natal (16,202; 15.7%) and Eastern Cape (15,352; 14.9%) provinces (Figure 2). Admissions have increased in Eastern Cape since week 41 and in Western Cape since week 43.



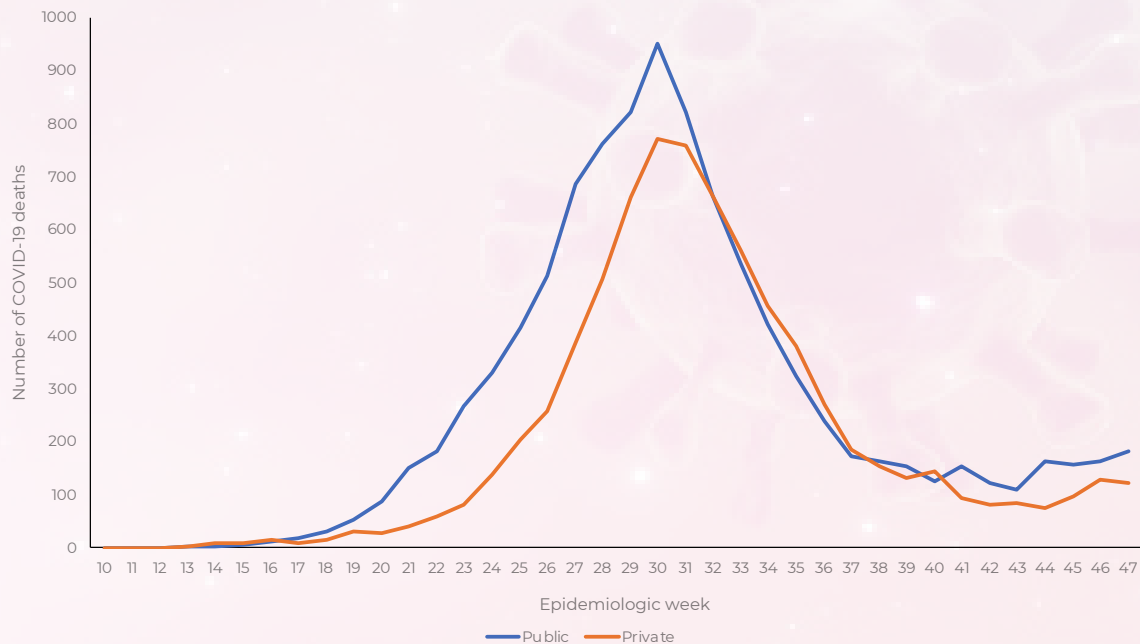
**Figure 2.** Number of reported COVID-19 admissions, by province and epidemiologic week of diagnosis, South Africa, 5 March-21 November 2020, n=102,980

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## EPIDEMIOLOGICAL AND GEOGRAPHIC TRENDS IN IN-HOSPITAL MORTALITY

Of the 102,980 COVID-19 admissions, there were 17,636 in-hospital deaths. Among 95,759 individuals with in-hospital outcome (died or discharged), the case fatality ratio was 18.4%. Most deaths have been reported in the public sector. Reported COVID-19 deaths decreased after the peak in week 30 but in the last four weeks there has been an increase in deaths in both public and private sector (Figure 3).

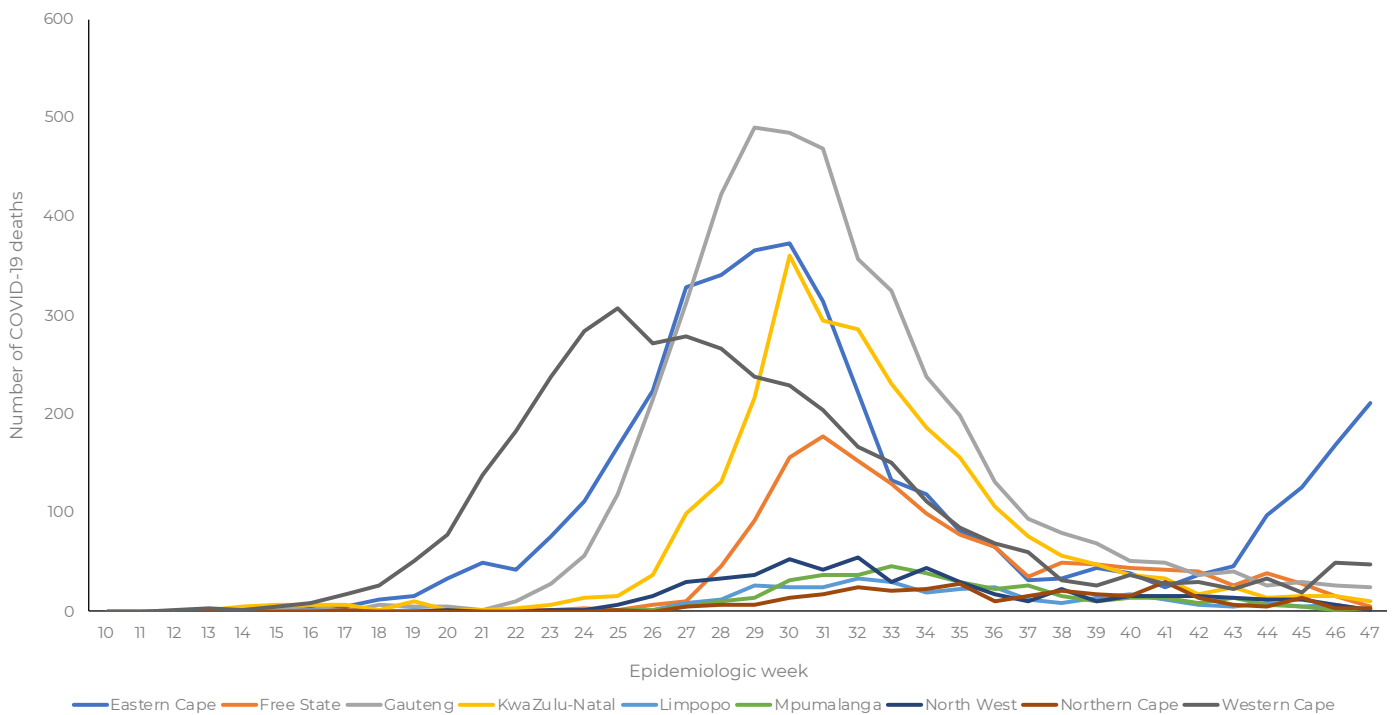


**Figure 3.** Number of COVID-19 deaths reported per week by health sector and epidemiologic week, South Africa, 5 March-21 November 2020, n=17,636

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Most deaths were reported in Gauteng (4,403; 25.0%), followed by Eastern Cape (3,975; 22.5%), Western Cape (3,790; 21.5%), and KwaZulu-Natal (2,530; 14.3%) (Figure 4). An increase in deaths was reported in Eastern Cape since week 42 and in the Western Cape since week 45.



**Figure 4.** Number of reported COVID-19 deaths, by province and epidemiologic week of death, South Africa, 5 March-21 November 2020, n=17,636

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The cumulative incidence risks of COVID-19 admissions and deaths were highest in Eastern Cape, Western Cape and Free State and 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-21 November 2020

Province	Provincial Population mid 2020*	Cumulative admissions	Cumulative Admissions / 100,000	Cumulative deaths	Cumulative deaths / 100,000
Eastern Cape	6,734,001	15,380	228.4	3,940	58.5
Free State	2,928,903	7,530	257.1	1,398	47.7
Gauteng	15,488,137	30,390	196.2	4,398	28.4
KwaZulu-Natal	11,531,628	16,201	140.5	2,523	21.9
Limpopo	5,852,553	1,899	32.4	324	5.5
Mpumalanga	4,679,786	2,674	57.1	385	8.2
North West	4,108,816	6,103	148.5	529	12.9
Northern Cape	1,292,786	2,109	163.1	298	23.1
Western Cape	7,005,741	20,740	296.0	3,782	54.0
<b>South Africa</b>	<b>59,622,350</b>	<b>103,026</b>	<b>172.8</b>	<b>17,577</b>	<b>29.5</b>

\*StatsSA mid-year population estimates 2020

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## DEMOGRAPHIC CHARACTERISTICS OF ADMISSIONS AND DEATHS

The median age of COVID-19 admissions was 52 years (interquartile range [IQR] 38 – 63). Among admitted individuals with COVID-19, 57,392 (55.7%) were female. Most admissions were reported in individuals aged 45 to 64 years (Figure 5).



**Figure 5:** Number of reported COVID-19 admissions by age, gender and percentage female, South Africa, 5 March-21 November 2020, n=102,980



# COVID-19 SENTINEL HOSPITAL SURVEILLANCE UPDATE

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The cumulative incidence risk of COVID-19 admissions increased with age, was higher in females aged between 10 and 49 years and higher in males over 50 years (Table 3).

**Table 3.** Cumulative incidence risk of COVID-19 admissions by age and sex, South Africa, 5 March-21 November 2020

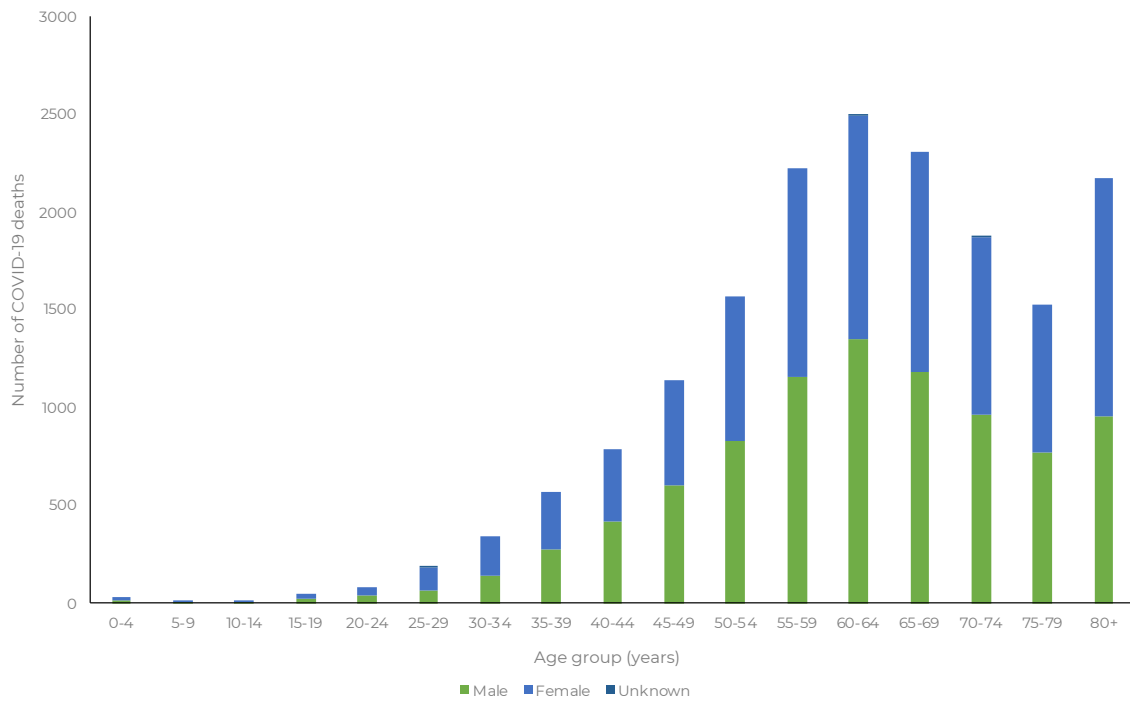
Age Category	FEMALE			MALE			TOTAL
	Population mid 2020*	Cumulative Admissions	Cumulative Incidence Risk of Admissions / 100,000	Population mid 2020*	Cumulative Admissions	Cumulative Incidence Risk of Admissions / 100,000	Cumulative Incidence Risk of Admissions / 100,000
0-4	2,909,441	744	25.6	2,834,009	585	20.6	23,1
5-9	2,895,156	239	8.3	2,820,796	183	6.5	7,4
10-14	2,821,761	310	11.0	2,769,792	359	13.0	12,0
15-19	2,402,887	580	24.1	2,371,692	1,046	44.1	34,1
20-24	2,425,201	927	38.2	2,398,166	1,781	74.3	56,1
25-29	2,740,438	1,535	56.0	2,680,316	3,349	124.9	90,1
30-34	2,858,602	2,565	89.7	2,783,148	4,571	164.2	126,5
35-39	2,404,552	3,362	139.8	2,393,741	5,006	209.1	174,4
40-44	1,837,035	3,968	216.0	1,896,907	4,800	253.0	234,8
45-49	1,546,027	4,661	301.5	1,623,621	5,287	325.6	313,9
50-54	1,179,234	5,248	445.0	1,392,029	5,948	427.3	435,4
55-59	971,017	5,373	553.3	1,240,292	6,016	485.0	515,0
60-64	757,861	4,752	627.0	1,038,455	5,025	483.9	544,3
65-69	571,836	3,597	629.0	836,829	3,945	471.4	535,4
70-74	387,990	2,814	725.3	619,184	3,106	501.6	587,8
75-79	233,605	1,975	845.4	403,457	2,266	561.6	665,7
80+	186,232	2,201	1181.9	391,041	3,382	864.9	967,1
Unknown		623	0		771	0	0

\*StatsSA mid-year population estimates 2020

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The median age of patients who died was 63 (IQR 53 – 72) years, and for those who were discharged alive was 49 (IQR 36 – 60) years. More deaths occurred in individuals over 55 years and in males (Figure 6).



**Figure 6:** Number of reported COVID-19 deaths by age and gender, South Africa, 5 March-21 November 2020, n=17,636

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The cumulative incidence risk of COVID-19 deaths increased with age, was roughly equal between males and females of younger ages and higher in males over 40 years (Table 4).

**Table 4.** Cumulative incidence risk of COVID-19 deaths by age and sex, South Africa, 5 March-21 November 2020

Age Category	FEMALE			MALE			
	Population mid 2020*	Cumulative Deaths	Cumulative Incidence Risk of Deaths / 100,000	Population mid 2020*	Cumulative Deaths	Cumulative Incidence Risk of Deaths / 100,000	Cumulative Incidence Risk of Deaths / 100,000
0-4	2,909,441	14	0.5	2,834,009	17	0.6	0,5
5-9	2,895,156	7	0.2	2,820,796	2	0.1	0,2
10-14	2,821,761	8	0.3	2,769,792	6	0.2	0,3
15-19	2,402,887	28	1.2	2,371,692	19	0.8	1,0
20-24	2,425,201	40	1.6	2,398,166	46	1.9	1,8
25-29	2,740,438	65	2.4	2,680,316	115	4.3	3,3
30-34	2,858,602	141	4.9	2,783,148	206	7.4	6,2
35-39	2,404,552	275	11.4	2,393,741	297	12.4	11,9
40-44	1,837,035	422	23.0	1,896,907	369	19.5	21,2
45-49	1,546,027	600	38.8	1,623,621	545	33.6	36,1
50-54	1,179,234	827	70.1	1,392,029	746	53.6	61,2
55-59	971,017	1,161	119.6	1,240,292	1,061	85.5	100,5
60-64	757,861	1,354	178.7	1,038,455	1,136	109.4	138,6
65-69	571,836	1,181	206.5	836,829	1,127	134.7	163,8
70-74	387,990	966	249.0	619,184	902	145.7	185,5
75-79	233,605	774	331.3	403,457	753	186.6	239,7
80+	186,232	957	513.9	391,041	1,221	312.2	377,3
Unknown		122	0		113	0	

\*StatsSA mid-year population estimates 2020

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## TRENDS IN ADMISSIONS

The number of COVID-19 admissions increased in Eastern Cape, KwaZulu-Natal, Limpopo, Mpumalanga and Western Cape provinces from week 46 to week 47. The highest proportion of new admissions and the highest incidence risk of new admissions were in Eastern Cape and Western Cape (Table 5).

**Table 5:** Percentage change in COVID-19 admissions and deaths, epidemiological week 46 to week 47, by province, South Africa, 5 March-21 November 2020

Province	Hospital admissions		Percentage change in admissions	Percentage of total new admissions	Weekly incidence risk of new admissions /100,000 persons
	Week 46	Week 47*			
Eastern Cape	881	890	1	45.1	13.2
Free State	86	58	-33	2.9	2.0
Gauteng	216	201	-7	10.2	1.3
KwaZulu-Natal	150	162	8	8.2	1.4
Limpopo	27	28	4	1.4	0.5
Mpumalanga	37	40	8	2.0	0.9
North West	91	74	-19	3.8	1.8
Northern Cape	32	22	-31	1.1	1.7
Western Cape	381	497	30	25.2	7.1
<b>South Africa</b>	<b>1,901</b>	<b>1,972</b>	<b>4</b>	<b>100.0</b>	<b>3.3</b>

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

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Amongst the top ten districts, Nelson Mandela Metro has the highest cumulative incidence risk of COVID-19 admissions (Table 6).

**Table 6:** Number and cumulative incidence risk of COVID-19 hospitalisations per 100,000 persons by district, South Africa, 5 March-21 November 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	6,692	551.7
Mangaung Metro	Free State	870,920	4,027	462.4
Dr Kenneth Kaunda	North West	797,716	3,653	457.9
Buffalo City Metro	Eastern Cape	800,874	3,587	447.9
City of Cape Town Metro	Western Cape	4,604,986	15,665	340.2
Frances Baard	Northern Cape	414,911	1,409	339.6
Garden Route	Western Cape	623,658	1,858	297.9
Lejweleputswa	Free State	653,601	1,746	267.1
West Rand	Gauteng	954,737	2,307	241.6
eThekweni Metro	KwaZulu-Natal	3,981,205	9,260	232.6

\* Location of hospital is used and not patient address

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There were 17 districts across the country that reported increased number of admissions from week 46 to week 47, though many of these increases were small, possibly affected by delays in reporting (Table 7). The increases in COVID-19 admissions in Bojanala, Buffalo City, City of Cape Town and Garden Route are concerning.

**Table 7:** Districts with positive increases in admissions epidemiologic week 46 to week 47 2020, South Africa

Districts*	Cumulative hospital admissions	Hospital admissions		Percentage change in admissions
		Week 46	Week 47*	
UThukela	440	1	3	200
Pixley Ka Seme	68	3	6	100
Bojanala Platinum	1840	24	45	88
Capricorn	968	6	11	83
Buffalo City Metro	3,587	109	175	61
Nkangala	750	9	14	56
Sedibeng	1,831	9	13	44
City of Cape Town Metro	15,665	209	299	43
iLembe	352	10	14	40
Harry Gwala	287	3	4	33
Ugu	792	10	13	30
Cape Winelands	2,086	28	36	29
O R Tambo	984	24	29	21
Garden Route	1,858	122	142	16
eThekweni Metro	9,260	89	98	10
Ehlanzeni	1,062	12	13	8
West Rand	2,1307	21	22	5

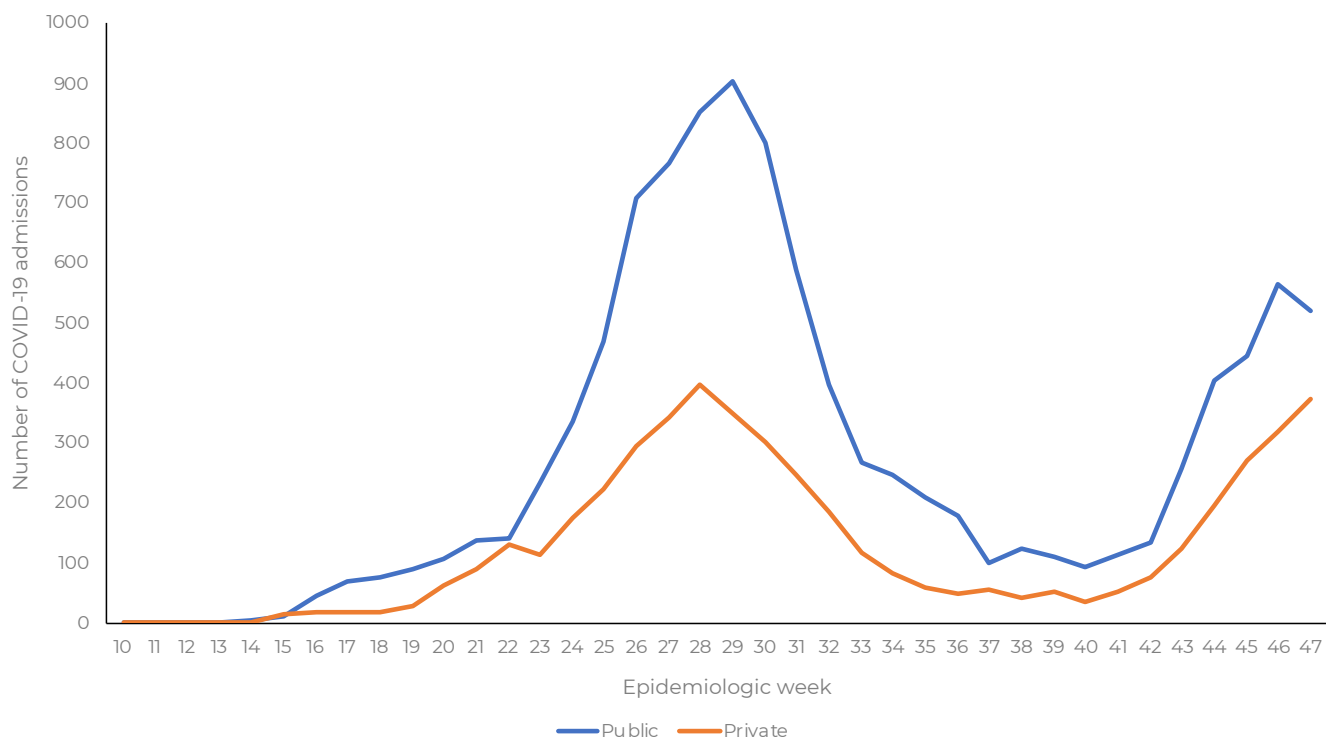
\* Location of hospital is used and not patient address

# COVID-19 SENTINEL HOSPITAL SURVEILLANCE UPDATE

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## CURRENT TRENDS IN 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 7).

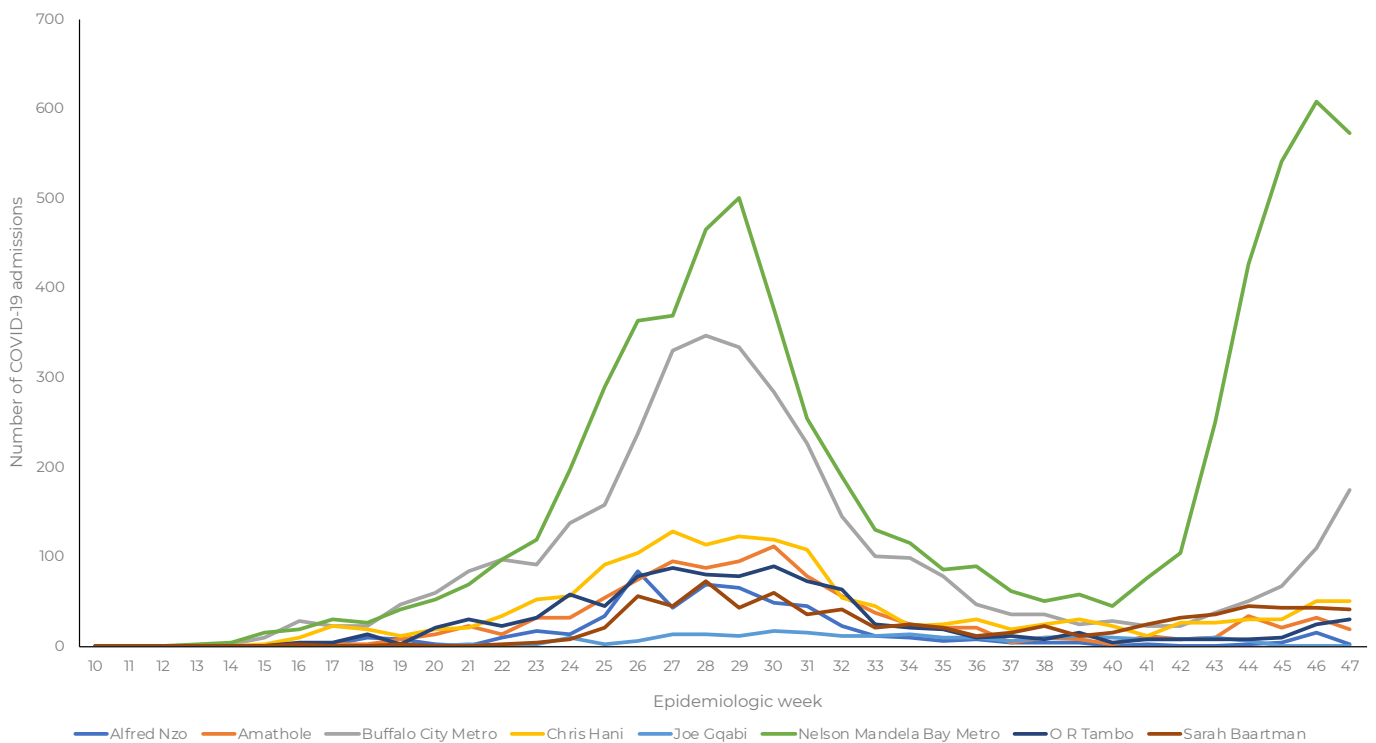


**Figure 7:** Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Eastern Cape, 5 March-21 November 2020

# COVID-19 SENTINEL HOSPITAL SURVEILLANCE UPDATE

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The increase in admissions in Eastern Cape is driven predominantly by admissions in Nelson Mandela Metro (Figure 8). The apparent decrease in admissions in the past week is possibly related to delays in reporting.



**Figure 8:** Number of reported COVID-19 admissions, by district and epidemiologic week, Eastern Cape, 5 March-21 November 2020



# COVID-19 SENTINEL HOSPITAL SURVEILLANCE UPDATE

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The number of COVID-19 admissions increased in Buffalo City and OR Tambo districts from week 46 to week 47. The highest proportion of new admissions and the highest incidence risk of new admissions was in Nelson Mandela Metro followed by Buffalo City (Table 8).

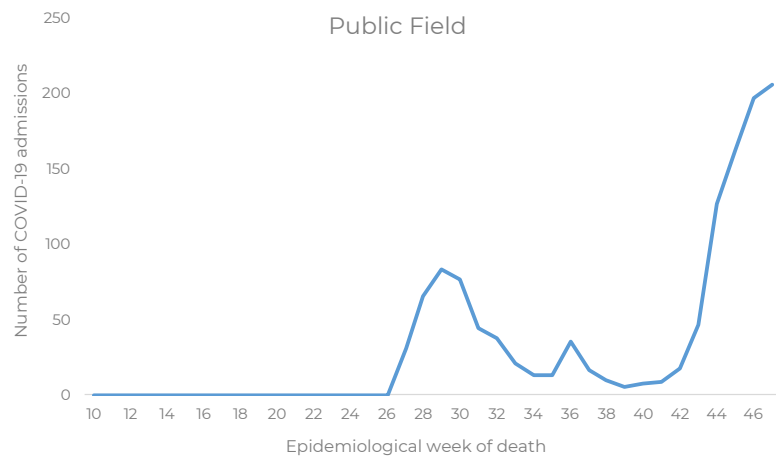
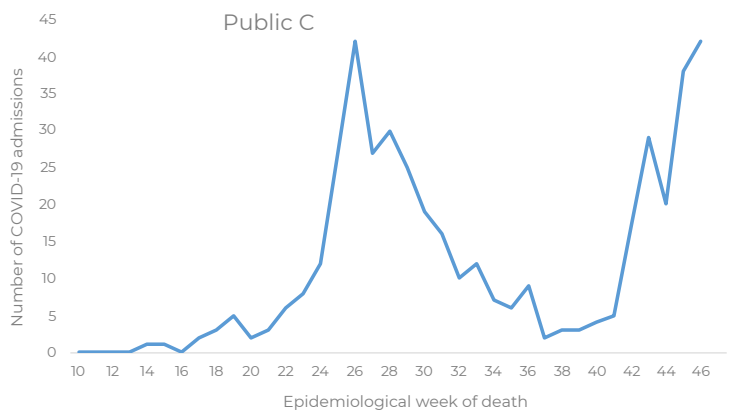
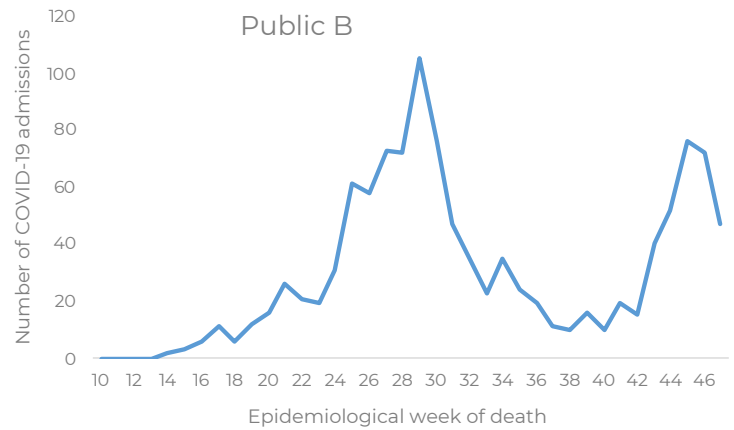
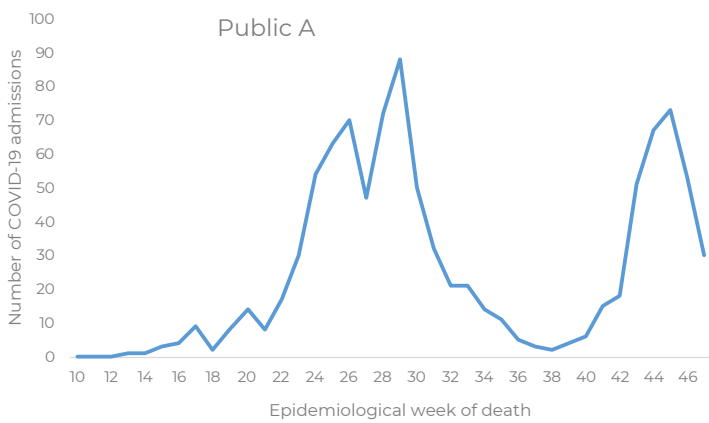
**Table 8.** Percentage change in COVID-19 admissions and deaths, epidemiologic week 45 to week 46, by district, Eastern Cape, 5 March-21 November 2020

District	Cumulative hospital admissions	Admissions Week 45	Admissions Week 46	Percentage change in admissions	Percentage of total new admissions	Incidence risk of new admissions /100 000 persons
Alfred Nzo	548	15	3	-80	0.3	0.0
Amathole	1,033	31	19	-39	2.1	0.3
Buffalo City Metro	3,587	109	175	61	19.7	2.5
Chris Hani	1,522	51	50	-2	5.6	0.8
Joe Gqabi	215	1	1	0	0.1	0.0
Nelson Mandela Bay Metro	6,692	608	572	-6	64.3	5.3
O R Tambo	984	24	29	21	3.3	0.2
Sarah Baartman	799	42	41	-2	4.6	1.0

The increase in admissions is reported across most hospitals in Nelson Mandela Metro (Figure 9). The four public and four private hospitals are experiencing a surge close to or larger than the previous peak in admissions in July.

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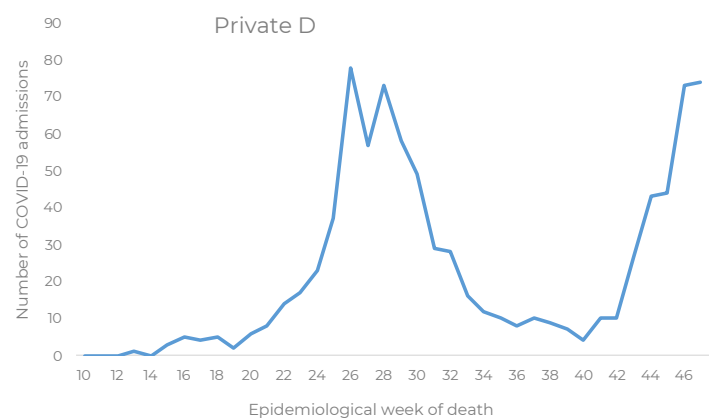
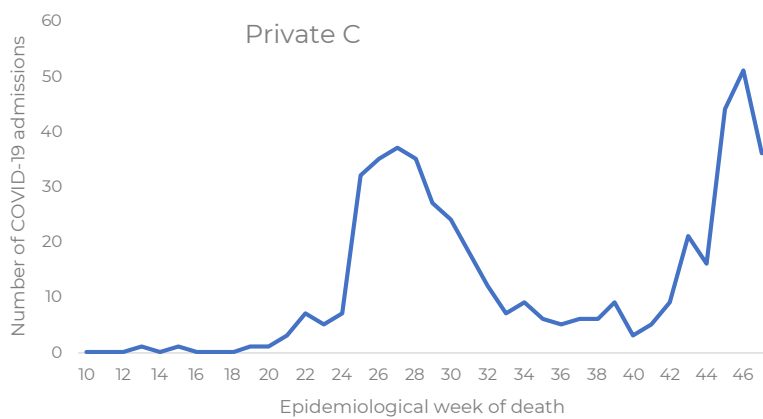
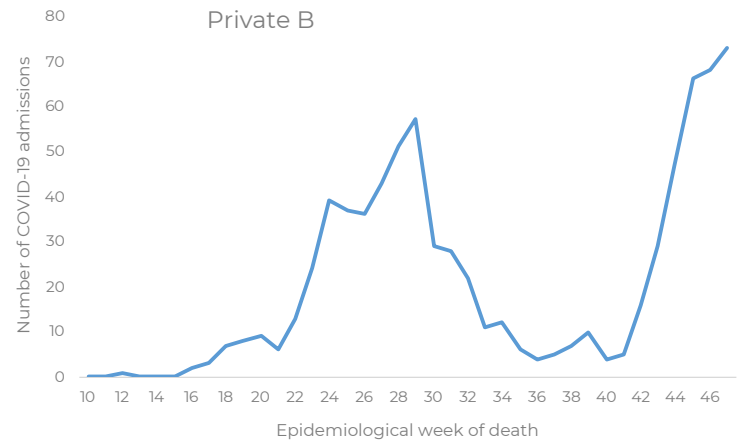
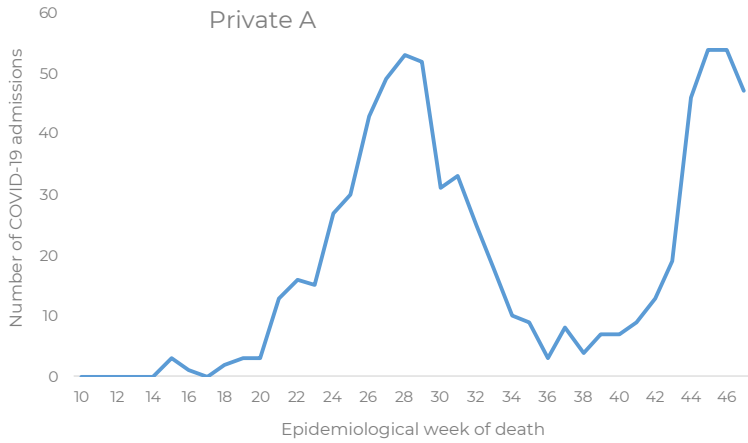
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**Figure 9:** Number of reported COVID-19 admissions, by hospital and epidemiologic week of diagnosis, Nelson Mandela Metro, 5 March-21 November 2020

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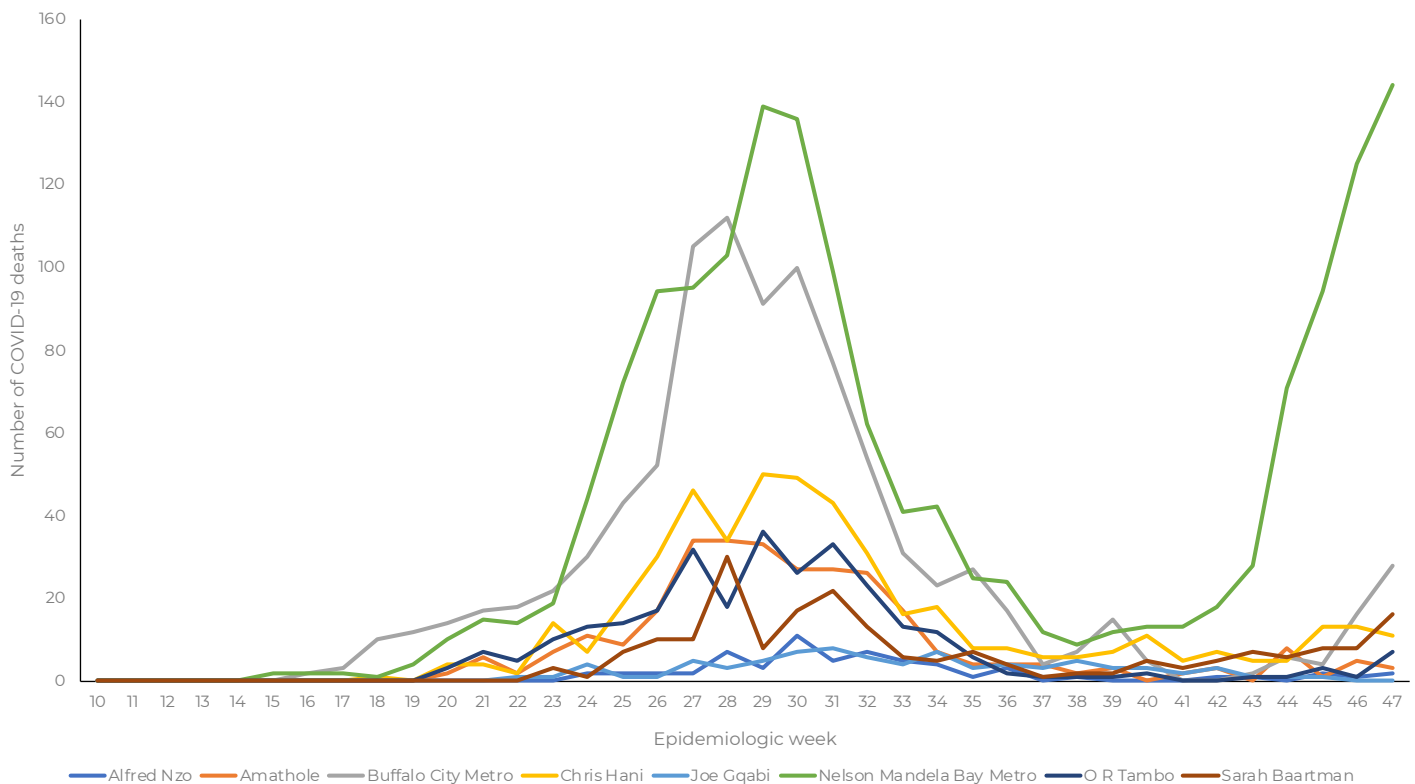


**Figure 9:** Number of reported COVID-19 admissions, by hospital and epidemiologic week of diagnosis, Nelson Mandela Metro, 5 March-21 November 2020

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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 10). There are also increases in deaths in Buffalo City, Sarah Baartman and OR Tambo districts.



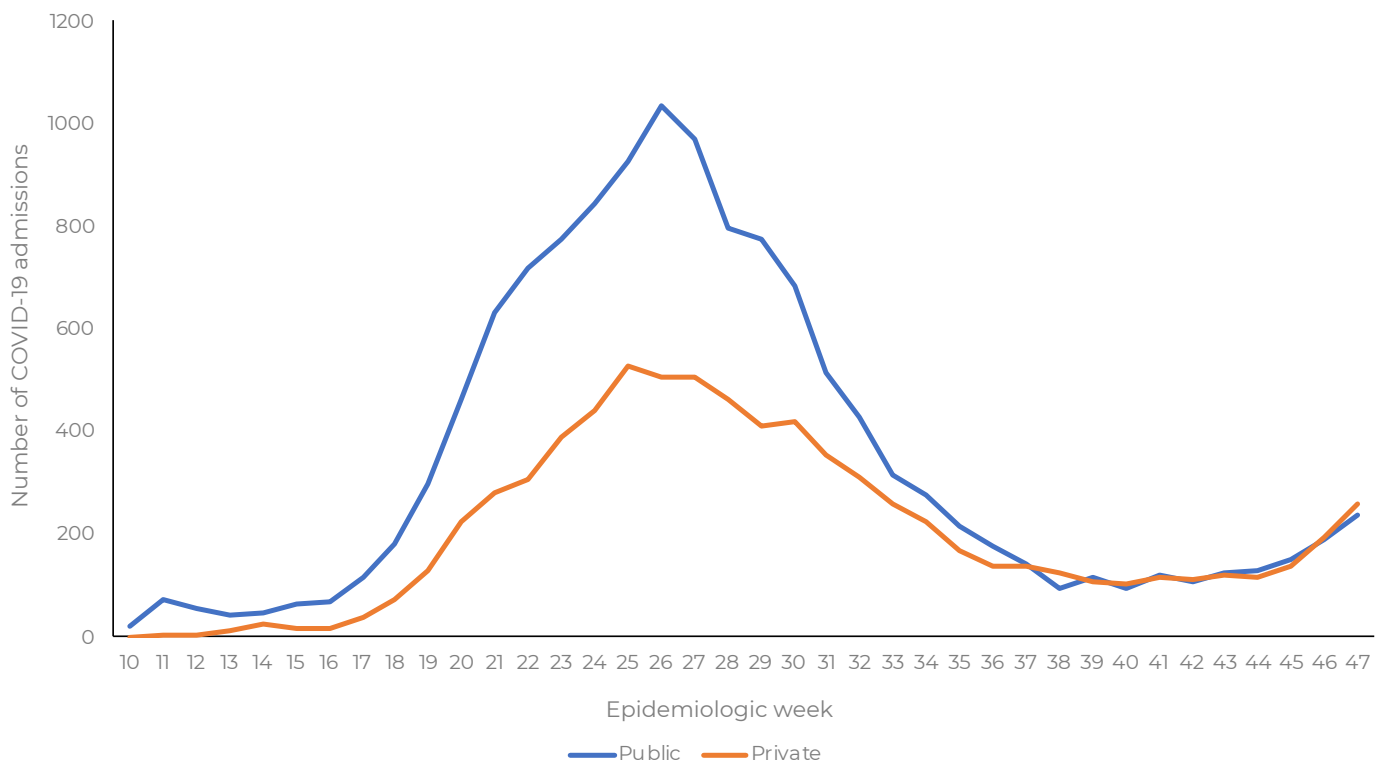
**Figure 10:** Number of reported COVID-19 deaths, by district and epidemiologic week, Eastern Cape, 5 March-21 November 2020

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## CURRENT TRENDS IN 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 11).

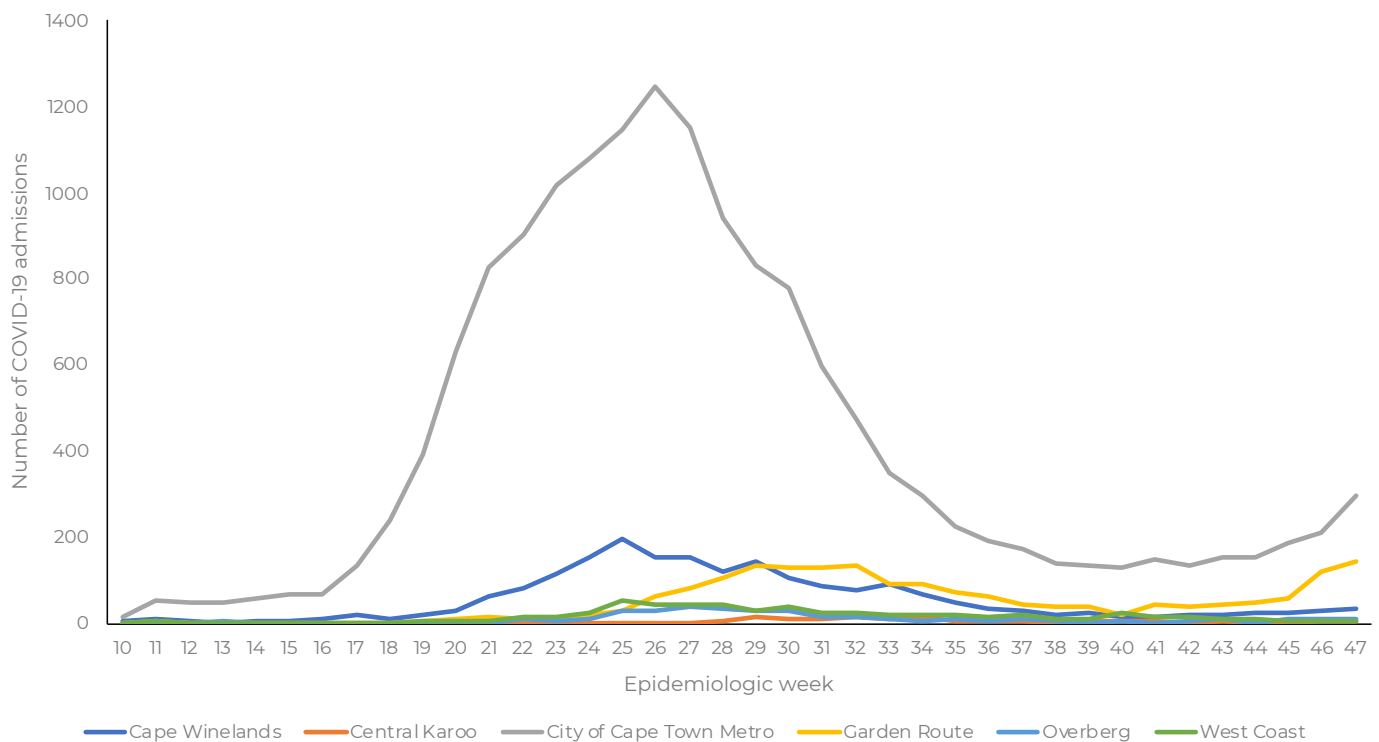


**Figure 11:** Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Western Cape, 5 March-21 November 2020

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The increase in admissions in Western Cape is driven predominantly by admissions in Garden Route and City of Cape Town Metro (Figure 12).



**Figure 12:** Number of reported COVID-19 admissions, by district and epidemiologic week, Western Cape, 5 March-21 November 2020

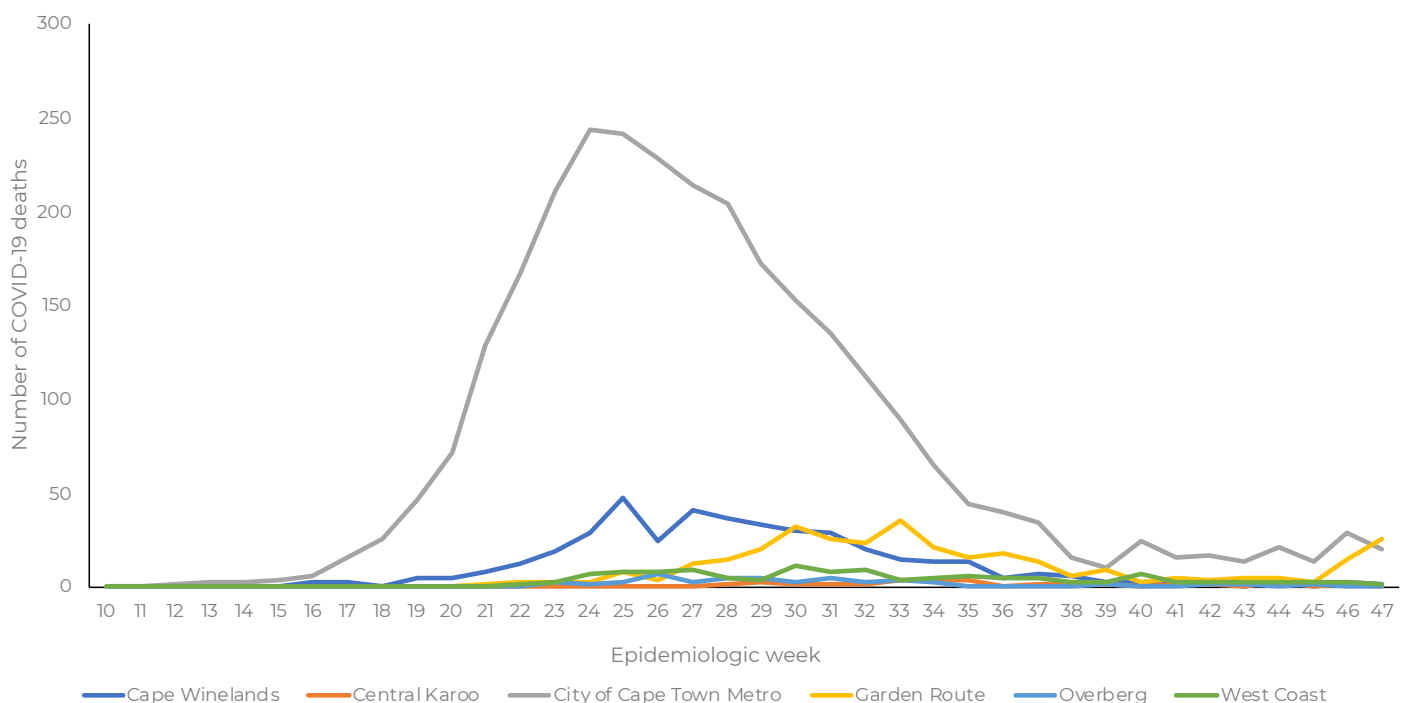
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The number of COVID-19 admissions increased in Cape Winelands, City of Cape Town, Garden Route and Overberg districts from week 46 to week 47. The highest proportion of new admissions and the highest incidence risk of new admissions was in Garden Route (Table 9).

District	Cumulative hospital admissions	Admissions Week 46	Admissions Week 47	Percentage change in admissions	Percentage of total new admissions	Incidence risk of new admissions /100 000 persons
Cape Winelands	2,086	28	36	29	7.2	0.8
Central Karoo	142	4	4	0	0.8	1.1
City of Cape Town Metro	15,665	209	299	43	60.2	1.3
Garden Route	1,858	122	142	16	28.6	4.6
Overberg	391	13	12	-8	2.4	0.8
West Coast	598	5	4	-20	0.8	0.2

There has been a small increase in deaths in Western Cape, predominantly in Garden Route (Figure 13).



**Figure 13:** Number of reported COVID-19 deaths, by district and epidemiologic week, Western Cape, 5 March-21 November 2020

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## 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.



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## 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)

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## APPENDIX

**Table 10:** Number of reported COVID-19 admissions and deaths by age and gender, South Africa, 5 March-21 November 2020

Age (years)	ADMISSIONS				DEATHS			
	Female	Male	Unknown	Total	Female	Male	Unknown	Total
0-4	585	744	2	1331	17	14	0	31
5-9	183	239	0	422	2	7	0	9
10-14	359	310	0	669	6	8	0	14
15-19	1046	580	1	1627	19	28	0	47
20-24	1781	927	2	2710	45	39	0	84
25-29	3349	1535	1	4885	114	65	1	180
30-34	4571	2565	1	7137	206	140	0	346
35-39	5006	3362	0	8368	296	274	0	570
40-44	4800	3968	1	8769	367	420	0	787
45-49	5287	4661	2	9950	543	600	0	1143
50-54	5948	5248	0	11196	746	823	0	1569
55-59	6016	5373	1	11390	1058	1155	0	2213
60-64	5025	4752	1	9778	1132	1351	1	2484
65-69	3945	3597	0	7542	1123	1178	0	2301
70-74	3106	2814	2	5922	900	965	1	1866
75-79	2266	1975	0	4241	752	774	0	1526
80-84	1701	1215	1	2917	574	498	0	1072
85-89	1043	628	0	1671	377	290	0	667
90-94	475	257	0	732	210	138	0	348
>95	163	101	0	264	57	27	0	84
Unknown	771	623	110	1504	113	122	1	236
	<b>57426</b>	<b>45474</b>	<b>125</b>	<b>103025</b>	<b>8657</b>	<b>8916</b>	<b>4</b>	<b>17577</b>