

COVID-19 SENTINEL HOSPITAL SURVEILLANCE UPDATE

SOUTH AFRICA WEEK 46 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 14 November 2020.

HIGHLIGHTS

- As of 14 November, 99 804 COVID-19 admissions were reported from 605 facilities (357 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 four 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.
- The districts immediately neighbouring Nelson Mandela Metro have also shown increasing trends in COVID-19 admissions, particularly Sarah Baartman in Eastern Cape and Garden Route in Western Cape.



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 14 November 2020, a total of 605 facilities submitted data on hospitalised COVID-19 cases, 357 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-14 November 2020

Facilities reporting	Public	Private
Eastern Cape	82	17
Free State	35	20
Gauteng	38	90
KwaZulu-Natal	62	45
Limpopo	33	7
Mpumalanga	25	9
North West	12	12
Northern Cape	14	8
Western Cape	56	40
South Africa	357	248

RESULTS

Epidemiological and geographic trends in admissions

From 5 March to 14 November, a total of 99,804 COVID-19 admissions were reported from 606 facilities in all nine provinces of South Africa. Initially, most admissions were reported in the private sector; from week 16 a higher proportion of total admissions was reported in the public sector; and since week 27 a higher proportion was again reported in the private sector. There has been a decrease in reported COVID-19 admissions since the peak in weeks 29 and 30 (Figure 1).

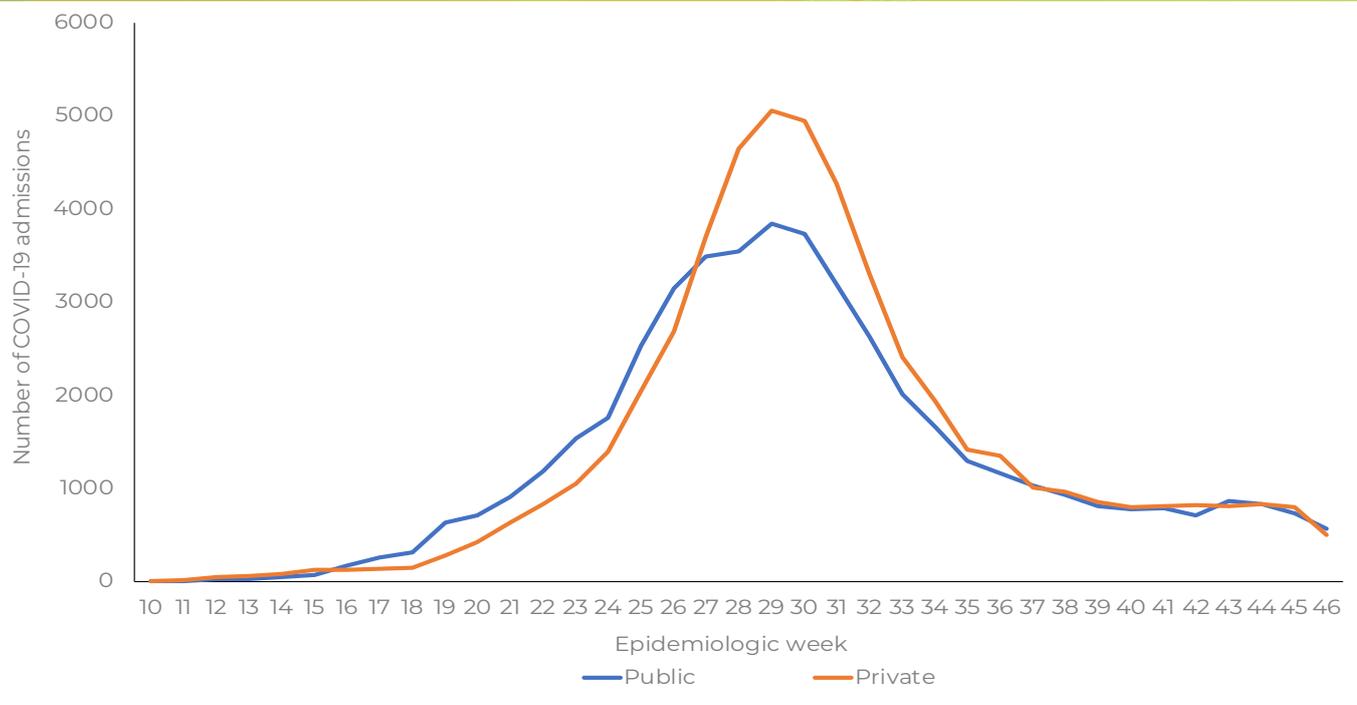


Figure 1: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, 5 March-14 November 2020, n=99 804

The majority of admissions were recorded in four provinces, Gauteng (29,851; 29.9%), followed by Western Cape (20,208; 20.3%), KwaZulu-Natal (15,927; 16.0%) and Eastern Cape (14,261; 14.3%) provinces (Figure 2). Admissions have increased in Eastern Cape over the past five weeks.

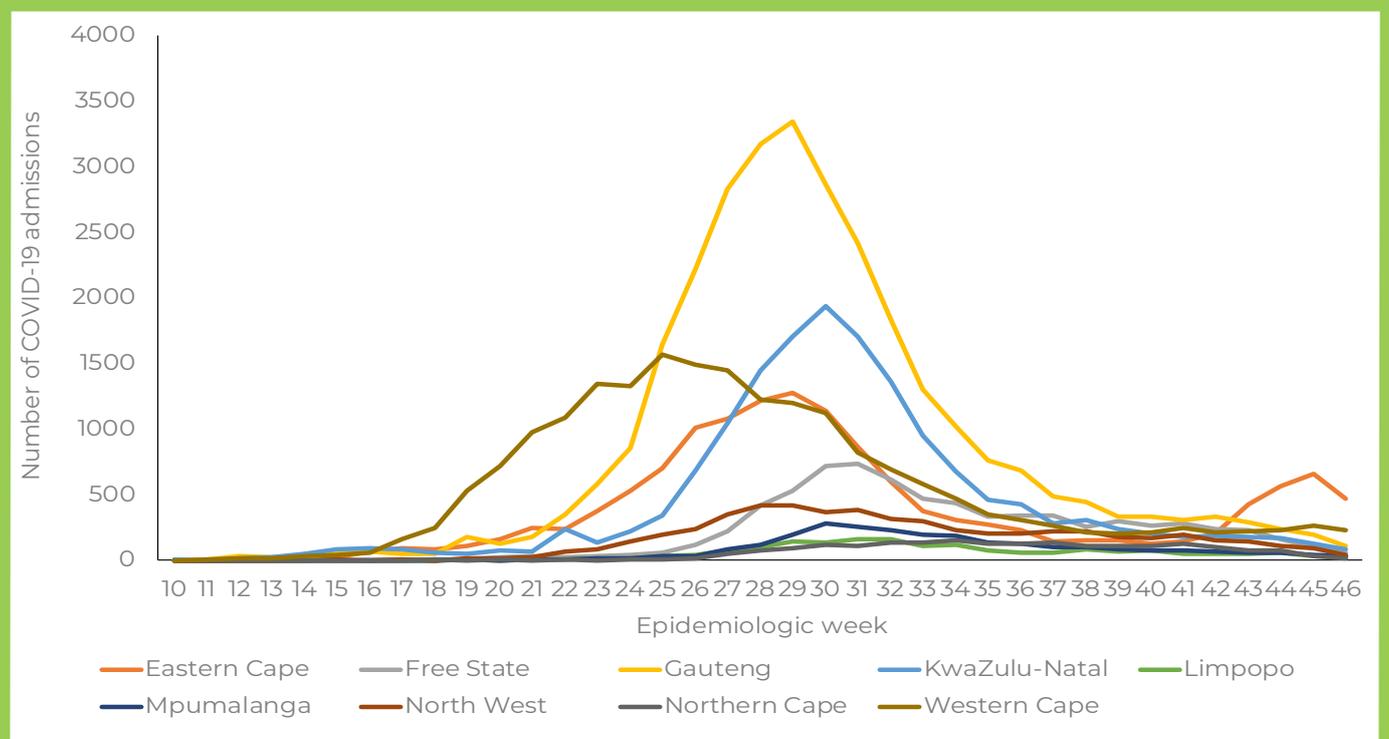


Figure 2: Number of reported COVID-19 admissions, by province and epidemiologic week of diagnosis, South Africa, 5 March-14 November 2020, n=99 804

Epidemiological and geographic trends in in-hospital mortality

Of the 99 804 COVID-19 admissions, there were 17 034 in-hospital deaths. Among 93 070 individuals with in-hospital outcome (died or discharged), the case fatality ratio was 18.3%. Most deaths have been reported in the public sector. There has been a decrease in reported COVID-19 deaths since the peak in week 30 (Figure 3).

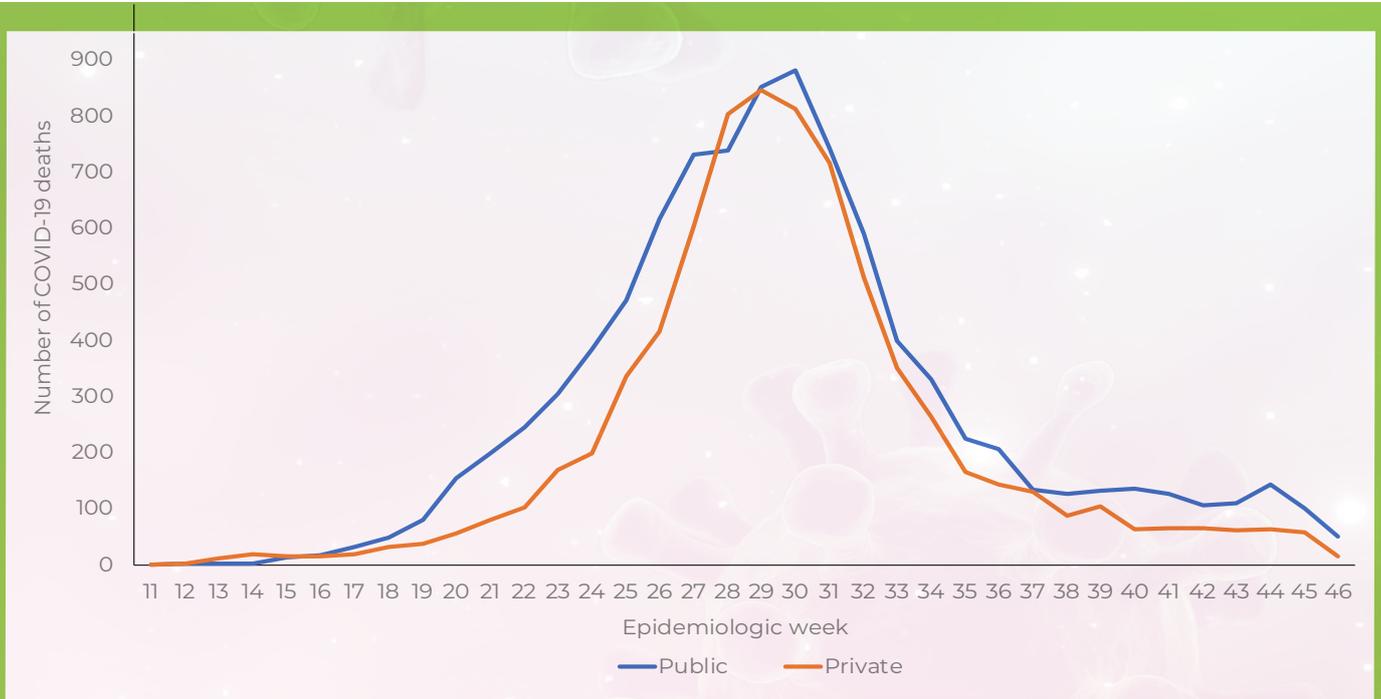


Figure 3: Number of COVID-19 deaths reported per week by health sector and epidemiologic week, South Africa, 5 March-14 November 2020, n=17 034

Most deaths were reported in Gauteng (4,205; 24.7%), followed by Eastern Cape (3,745; 22.0%), Western Cape (3,732; 21.9%), and KwaZulu-Natal (2,464; 14.5%) (Figure 4). An increase in deaths was reported in Eastern Cape since week 42.

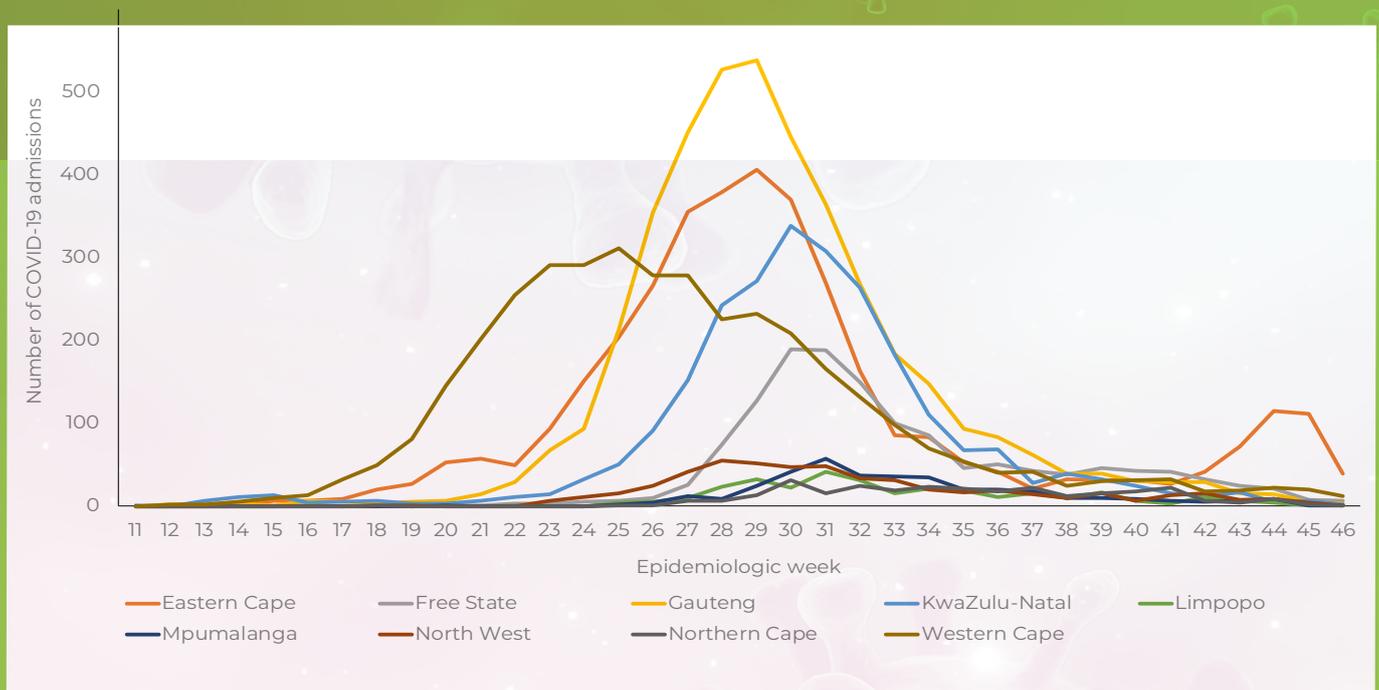


Figure 4: Number of reported COVID-19 deaths, by province and epidemiologic week of death, South Africa, 5 March-14 November 2020, n=17 034

The cumulative incidence risks of COVID-19 admissions and deaths were highest in Western Cape, Free State and Eastern Cape 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-14 November 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	14 067	208.9	3 673	54.5
Free State	2 928 903	7 407	252.9	1 375	46.9
Gauteng	15 488 137	29 727	191.9	4 174	26.9
KwaZulu-Natal	11 531 628	15 878	137.7	2 444	21.2
Limpopo	5 852 553	1 824	31.2	314	5.4
Mpumalanga	4 679 786	2 616	55.9	377	8.1
North West	4 108 816	5 505	134.0	521	12.7
Northern Cape	1 292 786	2 052	158.7	293	22.7
Western Cape	7 005 741	20 117	287.2	3 721	53.1
South Africa	59 622 350	99 193	166.4	16 892	28.3

*StatsSA mid-year population estimates 2020

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, 55 511 (55.6%) were female. Most admissions were reported in individuals aged 45 to 64 years (Figure 5).

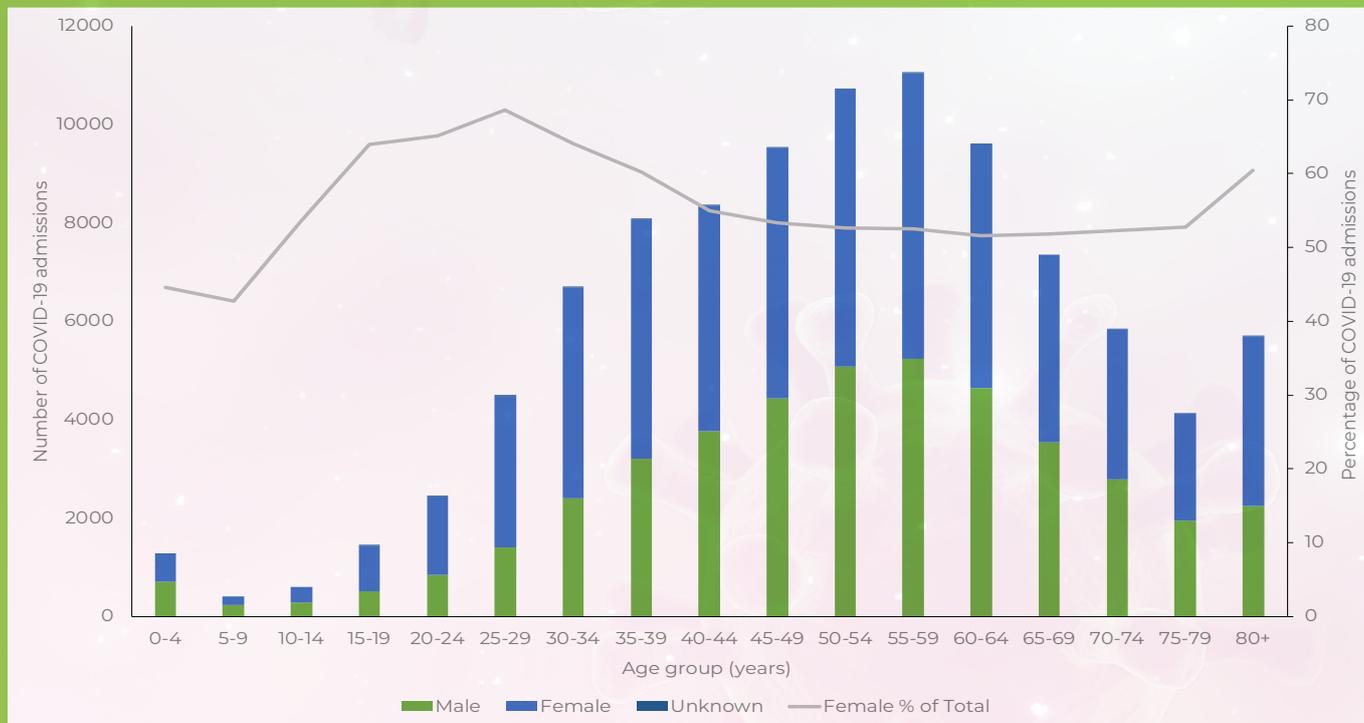


Figure 5: Number of reported COVID-19 admissions by age, gender and percentage female, South Africa, 5 March-14 November 2020, n=99 804

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 deaths by age and sex, South Africa, 5 March-14 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
0-4	2 834 009	16	0.6	2 909 441	13	0.4
5-9	2 820 796	3	0.1	2 895 156	6	0.2
10-14	2 769 792	4	0.1	2 821 761	7	0.2
15-19	2 371 692	15	0.6	2 402 887	28	1.2
20-24	2 398 166	44	1.8	2 425 201	31	1.3
25-29	2 680 316	100	3.7	2 740 438	63	2.3
30-34	2 783 148	193	6.9	2 858 602	123	4.3
35-39	2 393 741	273	11.4	2 404 552	266	11.1
40-44	1 896 907	345	18.2	1 837 035	386	21.0
45-49	1 623 621	504	31.0	1 546 027	555	35.9
50-54	1 392 029	693	49.8	1 179 234	771	65.4
55-59	1 240 292	983	79.3	971 017	1 110	114.3
60-64	1 038 455	1 082	104.2	757 861	1 290	170.2
65-69	836 829	1 084	129.5	571 836	1 155	202.0
70-74	619 184	877	141.6	387 990	956	246.4
75-79	403 457	708	175.5	233 605	755	323.2

* StatsSA mid-year population estimates 2020

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).

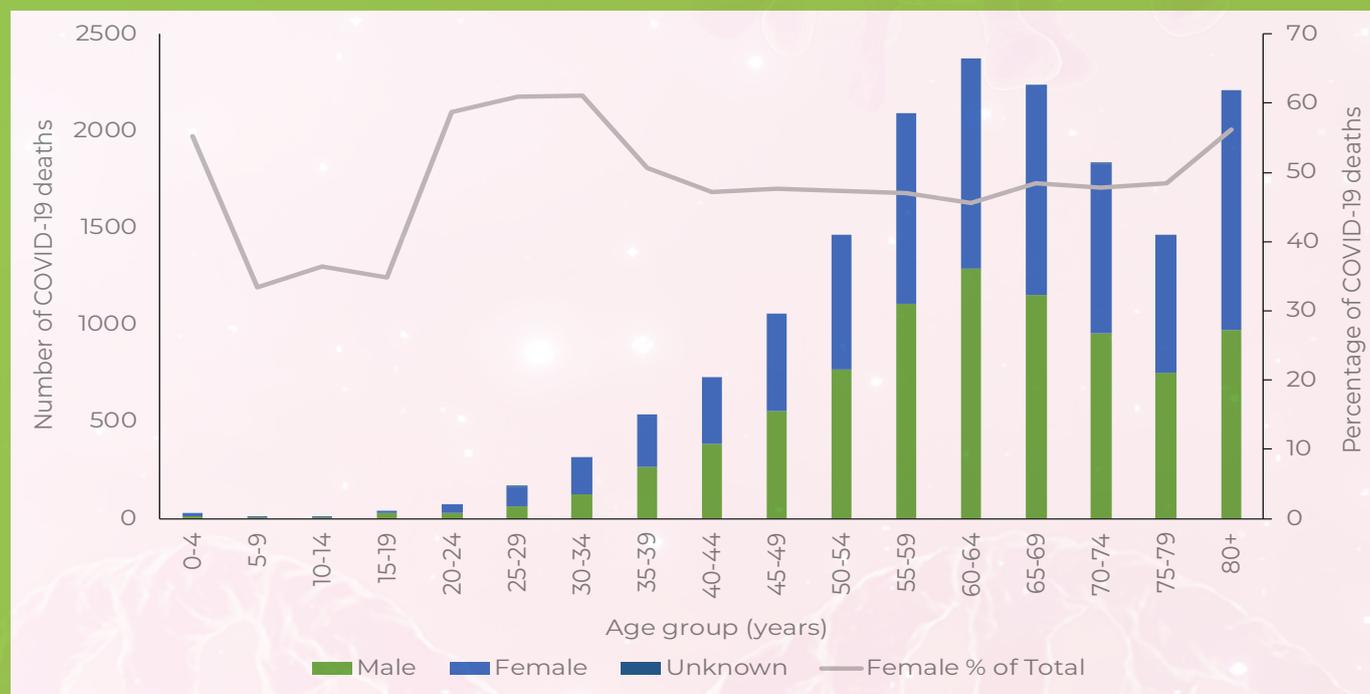


Figure 6: Number of reported COVID-19 deaths by age and gender, South Africa, 5 March-14 November 2020, n=17,034

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-14 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
0-4	2 834 009	16	0.6	2 909 441	13	0.4
5-9	2 820 796	3	0.1	2 895 156	6	0.2
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70-74	619 184	877	141.6	387 990	956	246.4
75-79	403 457	708	175.5	233 605	755	323.2
80+	391 041	1 241	317.4	186 232	971	521.4
Unknown	-	114	0	-	124	0

*StatsSA mid-year population estimates 2020

TRENDS IN ADMISSIONS

The number of COVID-19 admissions decreased in all provinces from week 45 to week 46, which is most likely related to delays in reporting. 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 45 to week 46, by province, South Africa, 5 March-14 November 2020

Province	Hospital admissions		Percentage change in admissions	Percentage of total new admissions	Weekly incidence risk of new admissions /100 000 persons
	Week 45	Week 46*			
Eastern Cape	679	473	-30	43.2	7.0
Free State	101	56	-45	5.1	1.9
Gauteng	208	118	-43	10.8	0.8
KwaZulu-Natal	127	82	-35	7.5	0.7
Limpopo	41	21	-49	1.9	0.4
Mpumalanga	49	28	-43	2.6	0.6
North West	100	47	-53	4.3	1.1
Northern Cape	33	16	-52	1.5	1.2
Western Cape	281	255	-9	23.3	3.6
South Africa	1 619	1 096	-32	100.0	1.8

* 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 6).

Table 6: Number and cumulative incidence risk of COVID-19 hospitalisations per 100,000 persons by district, South Africa, 5 March-14 November 2020

Districts*	Province	Population Mid-2020	Cumulative hospital admissions	Cumulative Incidence Risk of Admissions/ 100 000
Nelson Mandela Metro	Eastern Cape	1 213 060	5,815	479.4
Mangaung Metro	Free State	870 920	3,961	454.8
Buffalo City Metro	Eastern Cape	800 874	3,354	418.8
Dr Kenneth Kaunda	North West	797 716	3,034	380.3
Frances Baard	Northern Cape	414 911	1,389	334.8
City of Cape Town Metro	Western Cape	4 604 986	15 325	332.8
Garden Route	Western Cape	623 658	1 679	269.2
Lejweleputswa	Free State	653 601	1 729	264.5
West Rand	Gauteng	954 737	2 211	231.6
eThekweni Metro	KwaZulu-Natal	3 981 205	9 095	228.4

* Location of hospital is used and not patient address

There were six districts across the country that reported increased number of admissions from week 45 to week 46, though many of these increases were small, possibly affected by delays in reporting (Table 7). The increase in COVID-19 admissions in Garden Route district in the Western Cape, in close proximity to Nelson Mandela Metro is concerning.

Table 7: Districts with positive increases in admissions epidemiologic week 45 to week 46 South Africa, 5 March - 14 November

Districts	Cumulative hospital admissions	Hospital admissions		Percentage change in admissions
		Week 45	Week 46*	
Xhariep (FS)	164	0	1	100
Alfred Nzo (EC)	537	4	7	75
Garden Route (WC)	1679	60	84	40
O R Tambo (EC)	944	10	13	30
iLembe (KZN)	331	5	6	20
Thabo Mofutsanyana (FS)	955	6	7	17

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

Current trends in Eastern Cape

Since mid-October there has been an increase in admissions reported in the Eastern Cape, seen across both public and private sectors (Figure 7).

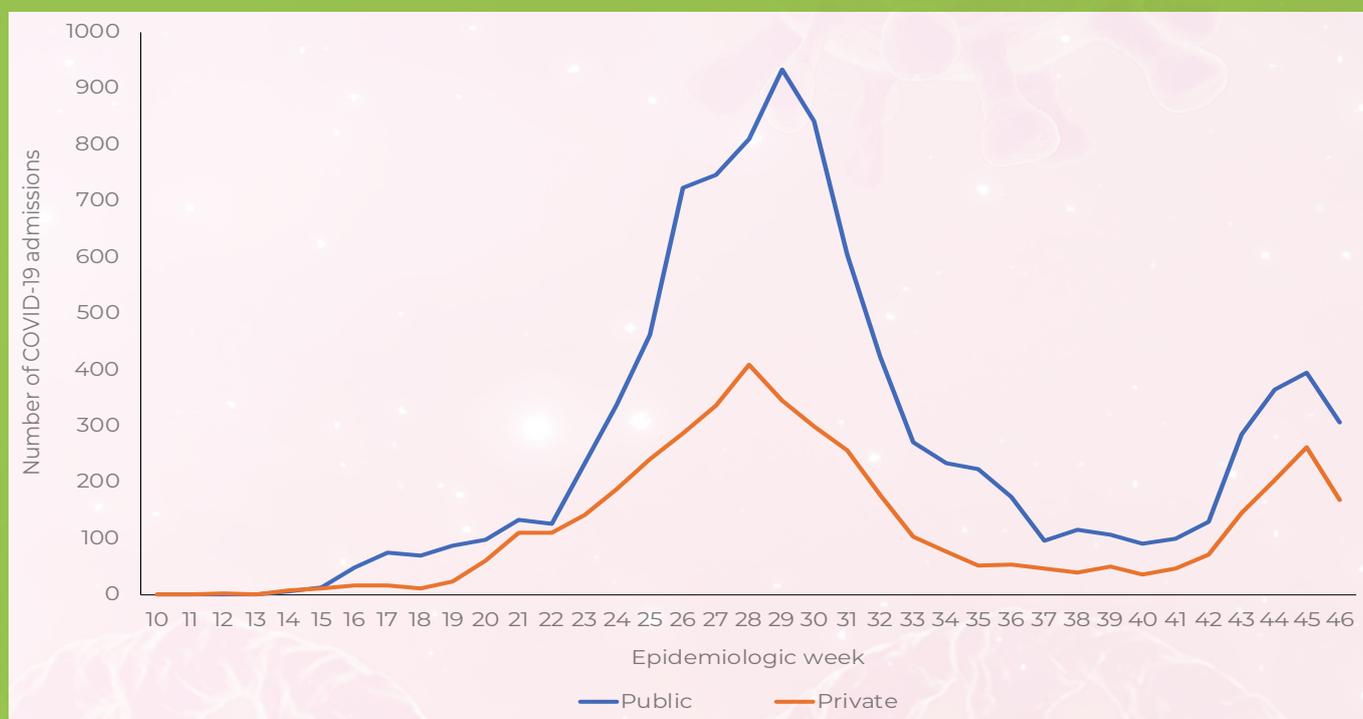


Figure 7: Number of reported COVID-19 admissions by health sector and epidemiologic week of diagnosis, Eastern Cape, 5 March-14 November 2020

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

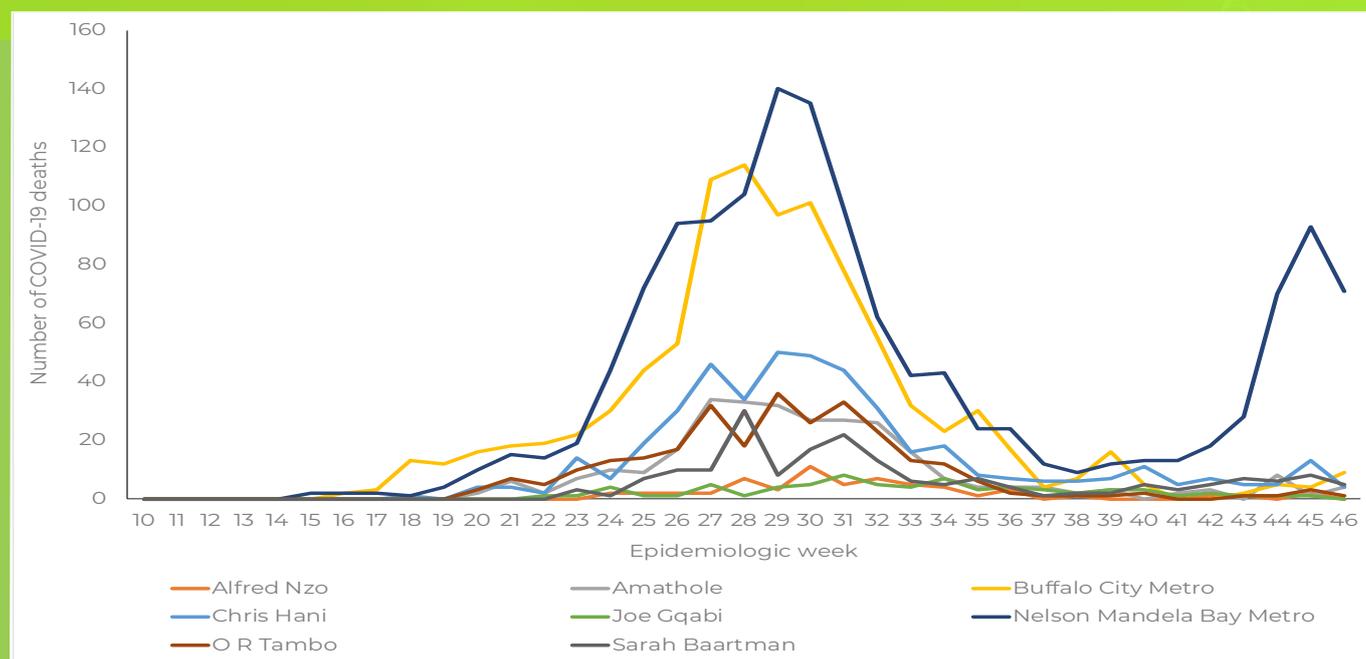


Figure 8: Number of reported COVID-19 admissions, by district and epidemiologic week, Eastern Cape, 5 March-14 November 2020

The number of COVID-19 admissions decreased in all Eastern Cape districts from week 45 to week 46, possibly due to delays in reporting. The highest proportion of new admissions and the highest incidence risk of new admissions was in Nelson Mandela Metro followed by the neighbouring district, Sarah Baartman (Table 8).

Table 8: Percentage change in COVID-19 admissions and deaths, epidemiologic week 45 to week 46, by district, Eastern Cape, 5 March-14 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	537	4	7	75	1.5	0.2
Amathole	1 019	15	8	-47	1.7	0.2
Buffalo City Metro	3 354	58	32	-45	6.8	0.8
Chris Hani	1 434	26	17	-35	3.6	0.5
Joe Gqabi	196	1	1	0	0.2	0.1
Nelson Mandela Bay Metro	5 815	522	369	-29	78.0	6.4
O R Tambo	944	10	13	30	2.7	0.2
Sarah Baartman	754	43	26	-40	5.5	1.1

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 the previous peak in admissions in July.

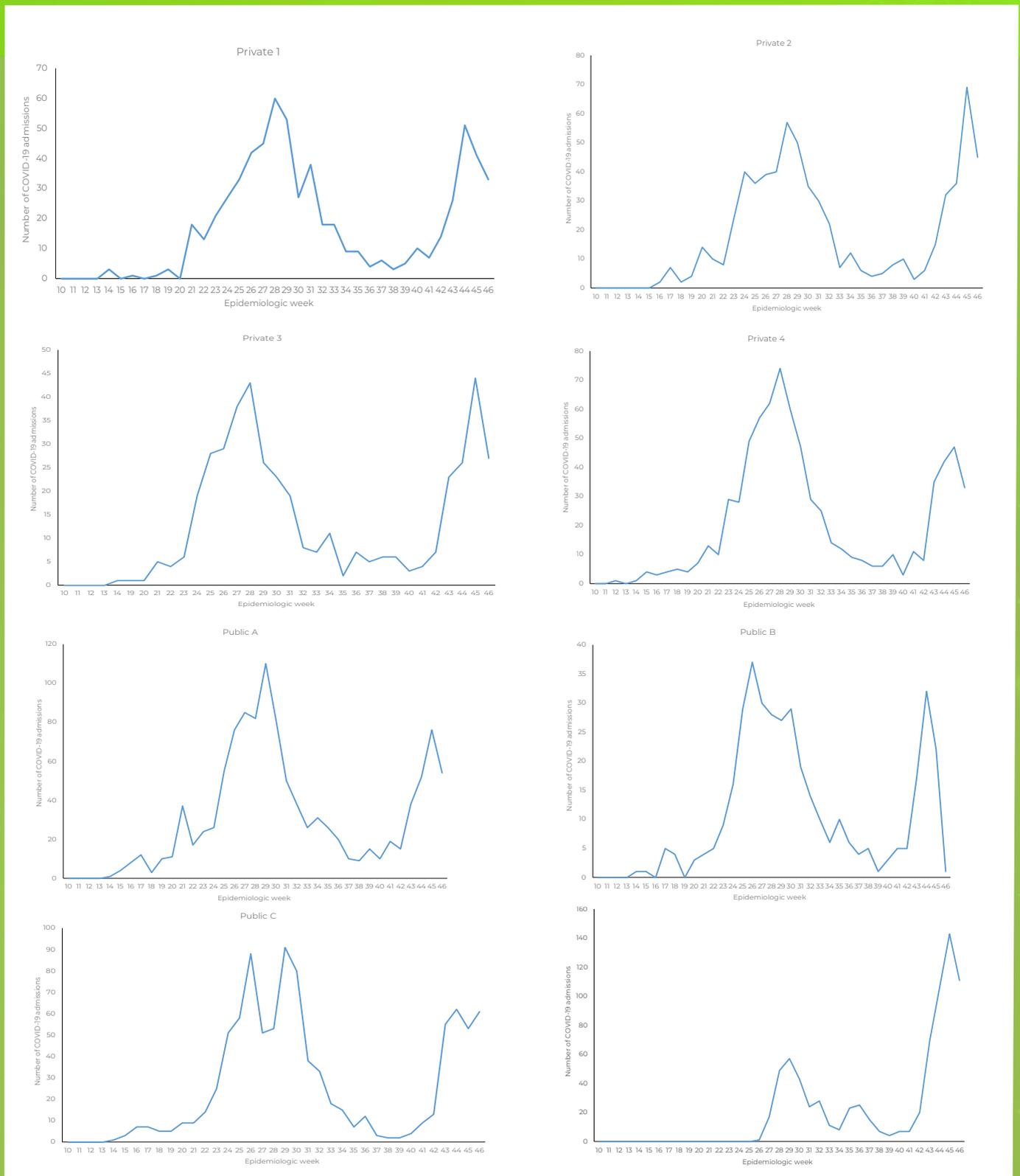


Figure 9: Number of reported COVID-19 admissions, by hospital and epidemiologic week of diagnosis, Nelson Mandela Metro, 5 March-14 November 2020

There has been an increase in deaths in Eastern Cape, driven predominantly by deaths in Nelson Mandela Metro (Figure 10). The apparent decrease in deaths in this district in the past week is possibly related to delays in reporting.

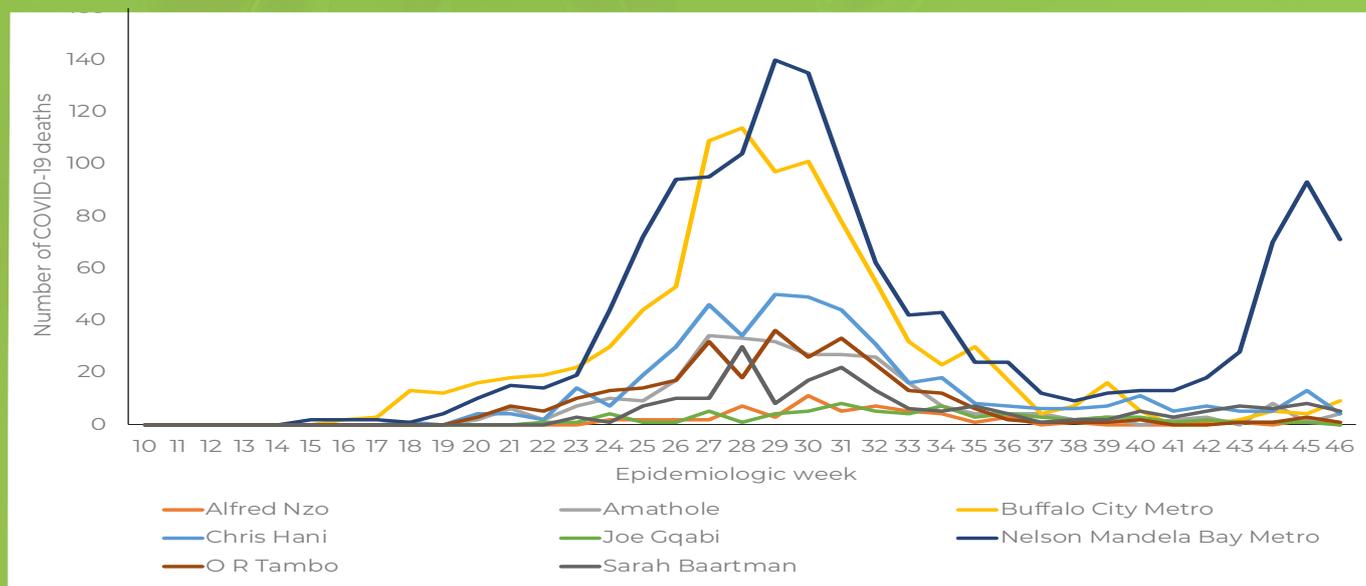


Figure 10: Number of reported COVID-19 deaths, by district and epidemiologic week, Eastern Cape, 5 March-14 November 2020

Trends in neighbouring districts

The districts immediately neighbouring Nelson Mandela Metro have also shown increasing trends in COVID-19 admissions, particularly Sarah Baartman in Eastern Cape and Garden Route in Western Cape (Figure 11).

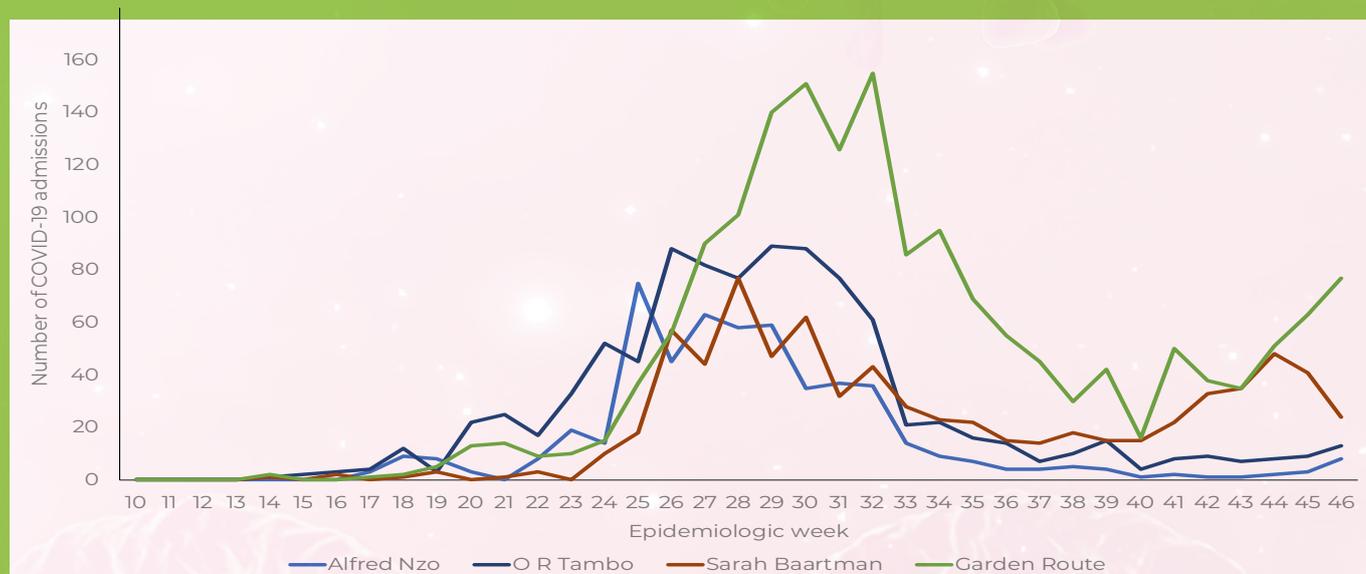


Figure 11: Number of reported COVID-19 deaths, by epidemiologic week, neighbouring districts to Nelson Mandela Metro, 5 March-14 November 2020

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)

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APPENDIX

TABLE 9: NUMBER OF REPORTED COVID-19 ADMISSIONS AND DEATHS BY AGE AND GENDER, SOUTH AFRICA, 5 MARCH-14 NOVEMBER 2020

Age (years)	ADMISSIONS				DEATHS			
	Female	Male	Unknown	Total	Female	Male	Unknown	Total
0-4	567	718	2	1 287	16	12	0	28
5-9	179	231	0	410	4	6	0	10
10-14	339	303	0	642	4	8	0	12
15-19	1 007	561	1	1 569	17	29	0	46
20-24	1 710	896	2	2 608	45	37	0	82
25-29	3 238	1 493	2	4 733	112	65	1	178
30-34	4 432	2 494	1	6 927	200	134	0	334
35-39	4 847	3 270	3	8 120	287	273	0	560
40-44	4 663	3 849	5	8 517	349	398	0	747
45-49	5 142	4 544	4	9 690	532	588	0	1 120
50-54	5 768	5 114	2	10 884	726	809	0	1 535
55-59	5 819	5 236	2	11 057	1 023	1 125	0	2 148
60-64	4 833	4 590	1	9 424	1 079	1 318	0	2 397
65-69	3 789	3 483	0	7 272	1 086	1 142	0	2 228
70-74	2 946	2 690	2	5 638	849	929	1	1 779
75-79	2 181	1 923	0	4 104	721	752	0	1 473
80-84	1 638	1 170	1	2 809	563	481	0	1 044
85-89	1 011	609	0	1 620	367	285	0	652
90-94	466	248	0	714	205	133	0	338
>95	154	97	0	251	56	26	0	82
Unknown	782	635	110	1 527	114	126	1	241
	55 511	44 154	138	99 803	8 355	8 676	3	17 034