SOUTH AFRICA WEEK 10 2021

## **OVERVIEW**

This report summarises data of COVID-19 cases admitted to hospital in all provinces. The report is based on data collected from 5 March 2020 to 13 March 2021.

## HIGHLIGHTS

- Asof13March2021,223,589COVID-19admissions were reported from 643 facilities (392 publicsector and 251 private-sector) in all nine provinces of South Africa. DATCOV coverage is now 100% of public and private hospitals that have had COVID-19 admissions. There were 116,877 (52.3%) and 106,712 (47.7%) admissions reported in public and private sector respectively. The majority of COVID-19 admissions were reported from four provinces, Gauteng (60,397, 27.0%), followed by Western Cape (45,812, 20.5%), KwaZulu-Natal (43,690,19.5%) and Eastern Cape (29,599, 13.2%).
- Of the 223,589 admissions, 4,726 (2.1%) patients were in hospital at the time of this report, 168,773 (75.5%) patients were discharged alive or transferred out, 222 (0.1%) died non-COVID, 49,868 (22.3%) patients died of COVID and 797(0.4%) died after discharge.
- Of the 214,207 COVID-19 patients who had recorded in-hospital outcome (died and discharged), the case fatality ratio (CFR) was 23.3%. On multivariable analysis, factors associated with in-hospital mortality were older age groups; male sex; Black African, Coloured and Indian race; admission in the public sector; and having comorbid hypertension, diabetes, chronic cardiac disease, chronic renal disease, malignancy, HIV, current and past tuberculosis, and obesity. Compared to the Western Cape Province, individuals hospitalised in Eastern Cape, Free State, Gauteng, Limpopo and Northern Cape provinces were more likely to die in-hospital.

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## **METHODS**

DATCOV hospital surveillance for COVID-19 admissions, was initiated on the 1 April 2020. 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. 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. An individual was defined as having severe disease if treated in high care or intensive care unit (ICU), or ventilated or diagnosed with acute respiratory distress syndrome (ARDS) or if dead. 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.

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 13 March 2021, a total of 643 facilities submitted data on hospitalised COVID-19 cases, 392 from public sector and 251 from private sector (Table 1). This reflects 100% coverage of all public and private hospitals that have had COVID-19 admissions to date.

Name of province	Public Sector	Private Sector
Eastern Cape	85	18
Free State	35	20
Gauteng	38	91
KwaZulu-Natal	69	45
Limpopo	4]	
Mpumalanga	31	
North West	17	12
Northern Cape	17	8
Western Cape	59	4]
South Africa	392	251

**Table 1.** Number of hospitals reporting data on COVID-19 admissions by province and sector, South Africa, 5 March 2020 to 13 March 2021

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## RESULTS

#### Epidemiological and geographic trends in admissions

From 5 March 2020 to 13 March 2021, a total of 223,589 COVID-19 admissions were reported from 643 facilities in all nine provinces of South Africa. Of these admissions, 116,877 (52.3%) and 106,712 (47.7%) were reported in public and private sector, respectively. There was a resurgence of the second wave in both public and private sector from week 40 2020; the peak weekly numbers of admissions at the peak of the second wave surpassed the numbers during the peak of the first wave in both sectors (Figure 1). Since week 1 2021, there have been decreases in numbers of admissions in both public and private sector. Decreases in the most recent week may reflect delays in data submission.



Epidemiological week of diagnosis

Figure 1. Number of reported COVID-19 admissions by health sector and epidemiological week of diagnosis, 5 March 2020-13 March 2021, n= 223,589

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The majority of admissions (175,761/223,589, 78.6%) were recorded in four provinces, with the highest number reported in Gauteng (60,397, 27.0%), followed by Western Cape (45,812, 20.5%), KwaZulu-Natal (43,690, 19.5%) and Eastern Cape (29,599, 13.2%) provinces (Figure 2).



**Figure 2**. Number of reported COVID-19 admissions, by province and epidemiological week of diagnosis, South Africa, 5 March 2020-13 March 2021, n= 223,589

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## DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF COVID-19 ADMISSIONS

The median age of COVID-19 admissions was 53 years (interquartile range [IQR] 40 – 65). There were 8,847 (4.0%) admissions in patients 18 years and younger and 38,060 (17.0%) in patients older than 70 years. Among admitted individuals with COVID-19, 124,634 (55.7%) were female. Females were more common than males in all age groups except in individuals younger than 10 years (Figure 3).



**Figure 3.** Number of reported COVID-19 admissions by age, sex and percentage of males, South Africa, 5 March 2020-13 March 2021, n= 223,589

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Of the 149,762 (66.9%) patients for whom race was known, 117,393 (78.4%) were Black African, 10,424 (7.0%) were Coloured, 8,758 (5.9%) were Indian, 12,796 (8.5%) were White and 391 (0.3%) were classified as Other race group. There were 7,084 (3.2%) health care workers (HCW) that were reported to be hospitalised. Among the 51,087 admissions in females of child-bearing age 15-50 years, there were 5,536 (10.8%) females admitted who were pregnant or within 6 weeks post-partum.

Among 171,235 (76.6%) patients for whom comorbid conditions were known, 77,933 (45.5%) had no comorbid condition reported, 49,366 (28.8%) had one comorbid condition reported, 32,756 (19.1%) had two comorbid conditions and 11,180 (6.5%) had three or more comorbid conditions reported. The most commonly reported comorbidities were hypertension (62,314, 36.4%) and diabetes (44,587, 26.0%); there were 14,230 (8.3%) patients who were HIV-infected, 2,828 (1.7%) patients with active tuberculosis (TB) and 4,630 (2.7%) patients with previous history of TB (Table 2). Obesity, defined by body mass index where available or by the subjective opinion of the attending HCW, while not consistently recorded for all reported COVID-19 admissions, was recorded as a risk factor in 8,702 (3.9%) of all patients hospitalised.

Comorbid disease*	n	%
Hypertension	62,314	36.4
Diabetes mellitus	44,587	26.0
Chronic cardiac disease	4,151	
Chronic pulmonary disease/ Asthma	10,628	6.8
Chronic renal disease	4,179	
Malignancy	1,158	0.7
HIV	14,230	8.3
Active tuberculosis	2,828	
Previous history of tuberculosis	4,630	2.7

**Table 2.** Reported comorbid conditions among COVID-19 admissions, South Africa, 5 March 2020 to 13 March 2021, n=171,235\*

\* Multiple comorbid conditions are counted more than once so the total number may be more than the total number of individuals reporting comorbid conditions.

\*\* Presence of a comorbid condition includes only the conditions reported in the table; obesity is not included.

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## **OUTCOMES**

Of the 223,589 admitted individuals, 4,726 (2.1%) were currently in hospital, 164,339 (73.5%) were discharged alive, 4,434 (2.0%) were transferred out to either higher-level care or step-down facilities, 222 (0.1%) died non-COVID, 49,868 (22.3%) died in hospital of COVID and 797 (0.4%) died after discharge. Of the 206,470 COVID-19 patients who had recorded in-hospital outcome (died and discharged), the case fatality ratio (CFR) was 23.3%.

# EPIDEMIOLOGICAL AND GEOGRAPHIC TRENDS IN MORTALITY

The peak numbers of weekly deaths were higher in the second wave than the first wave. The CFR was higher in the public health sector (27.4%) than in the private health sector (18.9%) (p<0.001). There has been a decrease in reported COVID-19 deaths since week 1 of 2021 (Figure 4).



Epidemiological week of death

**Figure 4:** Number of COVID-19 deaths reported per week by health sector and epidemiologic week, South Africa, 5 March 2020-13 March 2021, n= 49,868

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Most deaths were reported in Gauteng (11,573, 20.0%), followed by Western Cape (9,640, 21.5 %), Eastern Cape (9,312, 32.7%) and KwaZulu-Natal (10,081, 24.3%) (Figure 5).



**Figure 5:** Number reported COVID-19 deaths, by province and epidemiological week of death, South Africa, 5 March 2020-13 March 2021, n= 49,868

# DEMOGRAPHIC CHARACTERISTICS OF DEATHS

The median age of patients who died was 63 (IQR 53 – 72) years, and for those who were discharged alive was 50 (IQR 37 – 61) years. There were 345 (0.6%) deaths in children aged  $\leq$ 18 years, many of these deaths were in children with serious underlying comorbid conditions. There were 3,410 (6.8%) deaths in patients younger than 40 years (Figure 6). The CFR was higher in males (25.3%) than females (21.7%) (p<0.001).

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**Figure 6:** Number of reported COVID-19 deaths by age and gender, South Africa, 5 March 2020-13 March 2021, n= 49,868

## COMMON COMORBIDITIES REPORTED AMONG DEATHS

In all age groups older than 40 years, hypertension and diabetes were most commonly reported comorbidities among patients who died. In patients between 20 and 60 years, HIV, tuberculosis and obesity were commonly reported (Figure 7).



**Figure 7:** Frequency of comorbid conditions for reported COVID-19 deaths by age group, South Africa, 5 March 2020-13 March 2021, n= 49,868

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### FACTORS ASSOCIATED WITH IN-HOSPITAL MORTALITY

On multivariable analysis, factors associated with in-hospital mortality were older age groups; male sex; Black African, Coloured and Indian race; admission in the public sector; and having comorbid hypertension, diabetes, chronic cardiac disease, chronic renal disease, malignancy, HIV, current tuberculosis alone or both current and past tuberculosis, and obesity. Compared to March 2020, CFR increased to the peak of wave 1 in July, decreased post-wave, then increased to the peak of wave 2 in January 2021, then decreased again. Compared to the Western Cape Province, individuals hospitalised in Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West and Northern Cape provinces were more likely to die in-hospital (Table 3 and Figure 8).

**Table 3:** Univariate and multivariable analysis of factors associated with mortality among 214,207 individuals with in-hospital outcome (discharges and deaths), South Africa, 5 March 2020 to 13 March 2021

Characteristic	Case-fatality ratio n/N (%)	Unadjusted (95% CI)	OR	p-value	Adjusted (95% Cl)	OR*	p-value
Age group							
<20 years	345/8,272 (4.2)	Reference			Reference		
20-39 years	3,410/ 43,359 (7.8)	1.9 (1.8-2.2)		<0.001	2.7 (2.2-3.2)		<0.001
40-59 years	15,923/84,375(18.9)	5.3 (4.7-5.9)		<0.001	7.2 (6.0-8.7)		<0.001
60-79 years	24,263/64,474(37.6)	13.9 (12.4-15.5)		<0.001	17.3 (14.3-20.9)		<0.001
≥80 years	5,702/12,194 (46.8)	20.1 (18.0-22.6)		<0.001	30.4 (25.0-37.0)	)	<0.001
Unknown age	225/1,533 (14.7)	3.9 (3.3-4.7)		<0.001	5.1 (2.6-10.1)		<0.001
Sex							
Female	25,898/119,365 (21.7)	Reference			Reference		
Male	23,952 / 94,663 (25.3)	1.2 (1.2-1.3)		<0.001	1.3 (1.3-1.4)		<0.001
Race							
White	2,628 / 12,365 (21.3)	Reference			Reference		
Black	27,667 /111,103 (24.9)	1.2 (1.2-1.3)		<0.001	1.3 (1.2-1.4)		0.001
Coloured	2,268 / 9,902 (22.9)	1.1 (1.0-1.2)		0.003	1.2 (1.1-1.3)		<0.001
Indian	1,967/ 8,478 (23.2)	1.1 (1.0-1.2)		0.001	1.3 (1.2-1.4)		<0.001
Other	73/353 (20.7)	0.9 (0.7-1.3)		0.795	1.1 (0.7-1.8)		0.586
Unknown	15,265 /72,006 (21.2)	1.0 (0.9-1.1)		0.892	1.5 (1.4-1.6)		<0.001
Healthcare worker							
No	49,021/207,302 (23.7)	Reference					
Yes	847 /6,905 (12.3)	0.5 (0.4-0.5)		<0.001			
Peri-partum							
No	4,503/43,526 (10.4)	Reference					
Yes	177/ 5,388 (3.3)	0.3 (0.2-0.3)		<0.001			

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No co-morbidity  12,802/75,046 (17.)  Reference  -0.001    1 co-morbid condition  12,620/47,270 (26.7)  18, (17.1.8)  -0.001    2 comorbid condition  3,623/10,723 (33.8)  24 (2.4-2.5)  -0.001    3 comorbid condition  3,623/10,723 (33.8)  25 (2.4-2.6)  -0.001    1,3 (12-1.3)  -0.001  -0.001  -0.001    Hypertension  -0.01  -0.001  11 (1.1.2)  <0.001    Yes  19,176 (59,735 (32.1)  20 (19-2.1)  <0.001  11 (1.1.2)  <0.001    Diabetes mellitus  22,332/113,402 (19.7)  Reference  Reference  Reference  -0.001    No  22,332/113,402 (19.7)  Reference  -0.001  14 (1.3.1.4)  <0.001    Solow Yes  23,009/143,056 (22.4)  Reference  Reference  -0.001  14 (1.3.1.4)  <0.001    Chronic cardiac disease  32,009/143,056 (22.4)  Reference  -0.001  1.2 (1.1.3)  0.001    Chronic pulmonary  1,407 (3.88 (37.0)  2.0 (1.9-2.2)  -0.001  1.2 (1.1.3)  0.001    Chronic pulmonary  1,407 (3.88 (37.0)  2.0 (1.9-2.2)  -0.001<	Comorbid condition					
1 co-morbid condition  12,620/47,270 (26.7)  1.8 (1.71.8)  <0.001	No co-morbidity	12,802/75,046 (17.1)	Reference			
2 comorbid conditions  10,483/31,357 (33.4)  2.4 (2.4-2.5)  <0.001	1 co-morbid condition	12,620/47,270 (26.7)	1.8 (1.7-1.8)	<0.001		
\$\$ comorbid conditions  3,623/10,723 (33.8)  2,5 (2,4-2.6)  <0.001	2 comorbid conditions	10,483/ 31,357 (33.4)	2.4 (2.4-2.5)	<0.001		
Unknown  10,340/47,811 (20.8)  1.3 (1.2-1.3)  <0.001	≥3 comorbid conditions	3,623/10,723 (33.8)	2.5 (2.4-2.6)	<0.001		
Hypertension  Reference  Reference    No  18,820/99,933 (18.0)  Reference  Reference    19,76/59,735 (32.1)  2.0 (1.9-2.1)  <0.001	Unknown	10,340/ 47,811 (20.8)	1.3 (1.2-1.3)	<0.001		
Hypertension  No  18,820 /99,983 (18.8)  Reference  Reference    Yes  19,176 / 59,735 (32.1)  2.0 (1.9-2.1)  <0.001	The sector stars					
No  Reference  Reference  Reference    Yes  19,176/59,735 (32.1)  2.0 (1.9-2.1)  <0.001	Hypertension		Deference		Deference	
Yes  19,176, 59,735 (32.1)  2.0 (1.9-2.1)  20,001  1.1 (1.1-1.2)  20,001    Diabetes mellitus  22,332/113,402 (19.7)  Reference  Reference	NO	10,020/33,303 (10.0)		<0.001		-0.001
Diabetes mellitus  22,332/113,402 (19.7)  Reference  Reference    Yes  14,385/43,040 (33.4)  2.0 (2.0-2.1)  <0.001		19,170/ 59,755 (52.1)	2.0 (1.9-2.1)	<0.001	1.1 (1.1-1.2)	<0.001
No  22,352/113,402 (19:7)  Reference  Reference    Yes  14,385/43,040 (33.4)  2.0 (2.0-2.1)  <0.001	Diabetes mellitus					
Yes  14,385/43,040 (33.4)  2.0 (2.0-2.1)  <0.001  1.4 (1.3-1.4)  <0.001    Chronic cardiac disease  No  32,009/143,056 (22.4)  Reference  Reference    Yes  1,437/3,885 (37.0)  2.0 (1.9-2.2)  <0.001	No	22,332/113,402 (19.7)	Reference		Reference	
Chronic cardiac disease  32,009/143,056 (22.4)  Reference  Reference    Yes  1,437/ 3,885 (37.0)  2.0 (1.9-2.2)  <0.001	Yes	14,385/ 43,040 (33.4)	2.0 (2.0-2.1)	<0.001	1.4 (1.3-1.4)	<0.001
No    32,009/143,056 (22.4)    Reference    Reference      Yes    1,437/3,885 (37.0)    2.0 (1.9-2.2)    <0.001	Chronic cardiac disease					
Yes    1,437/3,885 (37.0)    2.0 (1.9-2.2)    <0.001    1.2 (1.1-1.3)    0.001      Chronic pulmonary disease/Asthma	No	32,009/143,056 (22.4)	Reference		Reference	
Chronic pulmonary disease/Asthma	Yes	1,437/ 3,885 (37.0)	2.0 (1.9-2.2)	<0.001	1.2 (1.1-1.3)	0.001
disease/Asthma	Chronic pulmonary					
	disease/Asthma					
No 30.655/136.203 (22.5) Reference	No	30.655/136.203 (22.5)	Reference			
Yes 2.574/10.296 (25.0) 1.1 (1.1-1.2) 0.001	Yes	2.574/10.296 (25.0)	1.1 (1.1-1.2)	0.00]		
Chronic renal disease	Chronic renal disease					
No 31,487 / 142,241 (22.1) Reference Reference	No	31,487 / 142,241 (22.1)	Reference		Reference	
Yes 1,743 / 4,003 (43.5) 2.7 (2.5-2.9) <0.001 1.5 (1.4-1.6) <0.001	Yes	1,743 / 4,003 (43.5)	2.7 (2.5-2.9)	<0.001	1.5 (1.4-1.6)	<0.001
Malignancy	Malignancy					
No 32.584/144.716 (22.5) Reference Reference	No	32.584/144.716 (22.5)	Reference		Reference	
Yes 416/1.083 (38.4) 2.1 (1.9-2.4) <0.001 1.8 (1.5-2.0) <0.001	Yes	416/ 1.083 (38.4)	2.1 (1.9-2.4)	<0.001	1.8 (1.5-2.0)	<0.001
HIV	HIV					
No 30,177 / 135,250 (22.3) Reference Reference	No	30,177 / 135,250 (22.3)	Reference		Reference	
Yes 3,292/13,325 (24.7) 1.1 (1.1-1.2) <0.001 1.3 (1.3-1.4) <0.001	Yes	3,292/ 13,325 (24.7)	1.1 (1.1-1.2)	<0.001	1.3 (1.3-1.4)	<0.001
Tuborculosis	Tuborculosis					
	No	ר ררו ססד סדו דדי חד	Deference		Deference	
NO    SU,775 / ISO,500 (22.2)    Relefence    Relefence      Droviour    750 / 2.9 (9 (25.9)    12 (1117)    <0.001		30,7737130,300 (22.2) 750729 (25 9)		<0.001		0.257
$\begin{array}{c} -1.2 \\ -1$		2/2 / 951 (25.5)	12 (10-13)	0.018	13 (11-16)	<0.001
Current and previous 299 / 1265 (26.0) 11 (0.9.13) - 0.137 1.5 (1.4.18) - 0.001	Current and provious	242/351(23.5)	11 (0 9-1 7)	0.010	15 (1.4-1.8)	
Current and previous 29971,245 (24.0) 1.1 (0.9-1.5) 0.155 1.5 (1.4-1.8) <0.001				0.155	1.5 (1.4-1.0)	~0.001
Obesity	Obesity					
No 11,840 / 50,944 (23.4) Reference Reference	No	11,840 / 50, <u>944 (23.4)</u>	Reference		Reference	
Yes 2,641/ 8,099 (32.6) 1.6 (1.5-1.7) <a>&lt;0.001</a> 1.3 (1.2-1.4) <0.001	Yes	2,641/8,099 (32.6)	1.6 (1.5-1.7)	<0.001	1.3 (1.2-1.4)	<0.001
Unknown 35,374/155,058 (22.8) 0.9 (0.9-1.0) 0.046 0.9 (0.9-1.0) 0.114	Unknown	35,374/155,058 (22.8)	0.9 (0.9-1.0)	0.046	0.9 (0.9-1.0)	0.114

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Month of admission					
March 2020	44 /395 (11.1)	Reference		Reference	
April 2020	183/1,444 (12.8)	1.2 (0.8-1.7)	0.412	1.3 (0.8-1.9)	0.273
May 2020	1,073/ 5,786 (18.5)	1.9 (1.3-2.5)	<0.001	1.5 (1.1-2.2)	0.023
June 2020	3,677/ 18,111 (20.3)	2.0 (1.4-2.8)	<0.001	1.6 (1.1-2.2)	0.020
July 2020	8,235/ 37,960 (21.7)	2.2 (1.6-3.0)	<0.001	1.4 (0.9-2.1)	0.050
August 2020	3,675/ 19,504 (18.8)	1.9 (1.4-2.6)	<0.001	1.1 (0.8-1.6)	0.503
September 2020	1,309 / 8,782 (14.9)	1.4 (1.0-2.0)	0.040	0.9 (0.6-1.3)	0.402
October 2020	1,159/ 7,612 (15.2)	1.4 (1.0-2.0)	0.027	0.9 (0.6-1.3)	0.534
November 2020	2,502/ 11,042 (22.7)	2.3 (1.7-3.2)	<0.001	1.3 (0.9-1.8)	0.159
December 2020	10,469/ 39,188 (26.7)	2.9 (2.1-4.0)	<0.001	2.0 (1.4-2.8)	<0.001
January 2021	15,016/ 51,253 (29.3)	3.3 (2.4-4.5)	<0.001	2.0 (1.4-2.9)	<0.001
February 2021	2,247/ 11,476 (19.6)	1.9 (1.4-2.7)	<0.001	1.2 (0.9-1.8)	0.195
March 2021	273/1,603 (17.0)	1.6 (1.2-2.3)	0.004	1.2 (0.8-1.8)	0.315
Health sector					
Drivate sector	19 517/ 103 565 (18 9)	Deference		Deference	
Public sector	30 351/110 642 (27 4)	16 (16-17)	<0.001	14(13-14)	<0.001
	50,551/ 110,042 (27.4)	1.0 (1.0 1.7)	-0.001	וד (ו.ט ו.ד)	-0.001
Province					
Western Cape	9,640/44,798 (21.5)	Reference		Reference	
Eastern Cape	9,312/28,523 (32.7)	1.8 (1.7-1.8)	<0.001	2.0 (1.9-2.1)	<0.001
Free State	2,537/ 11,375 (22.3)	1.0 (0.9-1.1)	0.070	1.3 (1.2-1.4)	<0.001
Gauteng	11,573 / 57,795 (20.0)	0.9 (0.9-0.9)	<0.001	1.2 (1.1-1.3)	<0.001
KwaZulu-Natal	10,081/ 41,570 (24.3)	1.2 (1.1-1.2)	<0.001	1.5 (1.4-1.6)	<0.001
Limpopo	2,377 / 7,873 (30.2)	1.6 (1.5-1.7)	<0.001	1.7 (1.6-1.9)	<0.001
Mpumalanga	2,088/ 7,949 (25.8)	1.3 (1.2-1.4)	<0.001	1.3 (1.2-1.4)	<0.001
North West	1,578 / 10,934 (14.4)	0.6 (0.6-0.7)	<0.001	1.1 (1.0-1.2)	0.003
Northern Cape	682/3,390 (20.1)	0.9 (0.8-1.0)	0.055	1.3 (1.2-1.5)	<0.001
Ever ICU					
No	35,100/184,846 (18,9)	Reference			
Yes	14.768 / 29.361 (50.3)	4.3 (4.2-4.4)	<0.001		
Ever High Care					
No	44,091/196,514 (22.4)	Reference			
Yes	5,777 / 17,693 (32.7)	1.7 (1.6-1.7)	<0.001		
Ever ventilated					
No	41,959/202,075 (20.8)	Reference			
Yes	7,909/12,132 (65.2)	7.1 (6.9-7.4)	<0.001		
Ever on oxvgen					
No	22 698 /125 233 (18 1)	Reference			
Yes	27,170/88,974 (30,5)	20(19-20)	<0.001		
105	27,170,00,374 (30.3)	2.0 (1.3 2.0)	0.001		

\* Multivariable model excluded all individuals with unknown comorbid conditions

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**Figure 8:** Multivariable analysis of factors associated with mortality among 214,207 individuals with inhospital outcome (discharges and deaths), South Africa, 5 March 2020 to 13 March 2021

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### DISCUSSION

DATCOV currently includes 223,589 admissions from 643 public and private hospitals in all nine provinces in South Africa. It also includes 49,868 deaths that have occurred to date.

The findings confirm factors associated with in-hospital mortality were older age groups; male sex; Black, Indian and Coloured race; and having comorbid hypertension, diabetes, chronic cardiac disease, chronic renal disease, malignancy, HIV, current and previous tuberculosis, and obesity. Increased risks for mortality have similarly been observed in non-white patients and in those from lower socio-economic groups in other countries (1)(2).

Trends in CFR over time and provincial differences may be affected by many factors such as hospital admission criteria, timeousness of closing cases, testing criteria in different provinces, and the severity of illness in admitted cases.

The availability of reliable surveillance data is of critical importance to gain a better understanding of the epidemiology of COVID-19 in South Africa, to monitor the COVID-19 epidemic and to respond with adequate control measures. It has been suggested that when local transmission is widespread and testing strategies change, hospital admission or mortality surveillance systems provide a more reliable picture of the epidemic progression than overall confirmed case numbers.

DATCOV provides real-time data and summary analyses, which inform modelling and reporting at a national level. It also addresses a knowledge gap, in the lack of data from low and middle income countries (LMIC), allowing for analysis of COVID-19 epidemiology in a country with a younger population, unique disease profile with epidemics of both infectious (HIV and tuberculosis) and non-communicable diseases, and an overburdened public health system.

## 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 in six provinces to support hospitals to improve data submission.

In patients with non-communicable diseases, the current data collection platform is not able to distinguish between those that had pre-existing disease and those that were newly-diagnosed; and between those with well or poorly controlled disease. New variables have been introduced to allow for this analysis. For obesity, the platform now also captures weight, height and BMI.

Data on socioeconomic status are not collected. Data on treatment and medical interventions have not been analysed because the data were incomplete. Efforts are ongoing to improve the quality and completeness of data on symptom of these data will be included in future reports.

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.

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### REFERENCES

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



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### **APPENDIX**

**Table 4:** Number of reported COVID-19 admissions and deaths by age and gender, South Africa, 5 March2020 to 13 March 2021

ADMI	SSIONS					DEATHS		
Age (years)	Female	Male	Unknown	Total	Female	e Male	Unknown	Total
	1634	1930			62			
5-9		559		996	10			
		686			32			56
15-19	2315	1235		3553	85			
				6053	162			
25-29	6959		6	10095	338			539
30-34	9565			15085	610			1057
35-39		7586	6	18292	838	735		1573
		8989		19333	1078			
45-49	11865	10908	8	22781	1624	1660		3286
	13891			26106	2205			
55-59	15194	13081	8	28283	3172			6184
60-64	13509	12119		25640	3564	3673		7238
65-69	11094	9701	8	20803	3578	3326		6906
	8874	7793		16678	3034	2934		5972
75-79	6338		6		2285			4361
80-84	4604	3179		7787	1764			
85-89	2393	1479		3873	958	693		1651
90-94				1576	500	250		750
>=95	359				151			226
	831	670	99	1600	106			229
Total	136770	108600	195	245565	26156	24158	18	50332