

HIGHLIGHTS

- As of 21 November 2020, 4275 (4.2%) of the 102835 COVID-19 hospital admissions recorded on the DATCOV surveillance database, were health care workers (HCWs), reported from 603 facilities in all nine provinces of South Africa. Among 1340/4275 (30.2%) HCWs with available data on type of work, 836/1340 (62.4%) were nurses, 254/1340 (18.9%) porters or administrators, 128/1340 (9.6%) allied HCWs, 83/1340 (6.2%) doctors, 28/1340 (2.1%) paramedics, and 11/1340 (0.8%) laboratory scientists.
- There was an increase of 85 new HCW admissions since week 45.
- There were 1698 (39.7%) and 2577 (60.1%) admissions reported in the public and private sector, respectively.
- The majority of HCW admissions were reported in Gauteng (1636, 38.3%), followed by KwaZulu-Natal (977, 22.9%), and Eastern Cape (693, 16.2%).
- The median age of COVID-19 HCW admissions was 47 years, there were 616 (14.4%) admissions in HCWs aged 60 years and older. Among admitted HCWs with COVID-19, 3152 (73.7 %) were female.
- The prevalence of HCWs with comorbid diseases was 1630/3043 (53.6%). Among the 3043 HCWs who had reported on having a comorbid condition or not, the most commonly reported comorbid conditions were hypertension (1087/3043; 35.7%) and diabetes (700/3043; 23.0%). There were 212/3043; 6.9%) HCWs who were HIV positive, 28/3043; 0.9%) with active tuberculosis (TB) and 19/3043; 0.6%) with a previous history of TB.
- A total of 503 (11.8%) HCW admissions were ever treated in ICU, of these 297 (59.1%) were treated with oxygen, 187 (36.6%) were treated on ventilation and 99 (33.3%) received both treatment. Of the 4275 HCW admissions, 3726 (87.2%) were discharged alive, 60 (1.4%) transferred out to either higher level care or step-down facilities, 341 (8.0%) HCWs had died and 148 (3.5%) were currently in hospital. The majority of deaths among HCWs admitted with COVID-19, 105 (30.8%), were reported in the Eastern Cape, followed by 82 (24.1%) from Gauteng and 81 (23.8%) from KwaZulu-Natal provinces. Of the HCWs who died, (242/341; 75.7%) had comorbid disease reported and (130/341; 39.8%) had more than one reported comorbidity.
- HCWs with known in-hospital outcome had a case fatality ratio of 8.8% (341/4067).

Methods

DATCOV, sentinel 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 (Table 1). 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. All hospitalized patients who were noted to be doctors, nurses, allied health care workers, laboratory staff, porters and administrative staff were captured as health care workers (HCWs). 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).

Data on all COVID-19 admissions are received from all private and public hospitals nationally, in all nine provinces. As new hospitals join the surveillance system, they retrospectively captured all admissions recorded. As of 21 November 2020, a total of 603 facilities, 355 from public sector and 248 from private sector, submitted data on hospitalized patients with COVID-19 (Table 1). There were no additional hospitals reporting COVID-19 admissions since the last report.

Table 1: Number of hospitals reporting data on COVID-19 admissions by province and health-sector, South Africa, 5 March – 21 November 2020

Provinces	Public	Private
Eastern Cape	81	17
Free State	35	20
Gauteng	38	90
KwaZulu-Natal	62	45
Limpopo	33	7
Mpumalanga	25	9
North West	12	12
Northern Cape	13	8
Western Cape	56	40
South Africa	355	248

Results

From 5 March to 21 November 2020, there was a total of 4275/102835 (4.2%) COVID-19 admissions among HCWs. Of these admissions, 1698 (39.7%) and 2577 (60.1%) were reported in the public and private sector, respectively (Figure 1). The majority of HCW admissions (3611/4275; 84.5%) were recorded in four provinces, with the highest number 1636/4275 (38.3%) reported in Gauteng, followed by 977/4275 (22.9) in KwaZulu-Natal, 693/4275 (16.2%) in Eastern Cape and 305/4275 (7.1%) in Western Cape provinces (Figure 1).

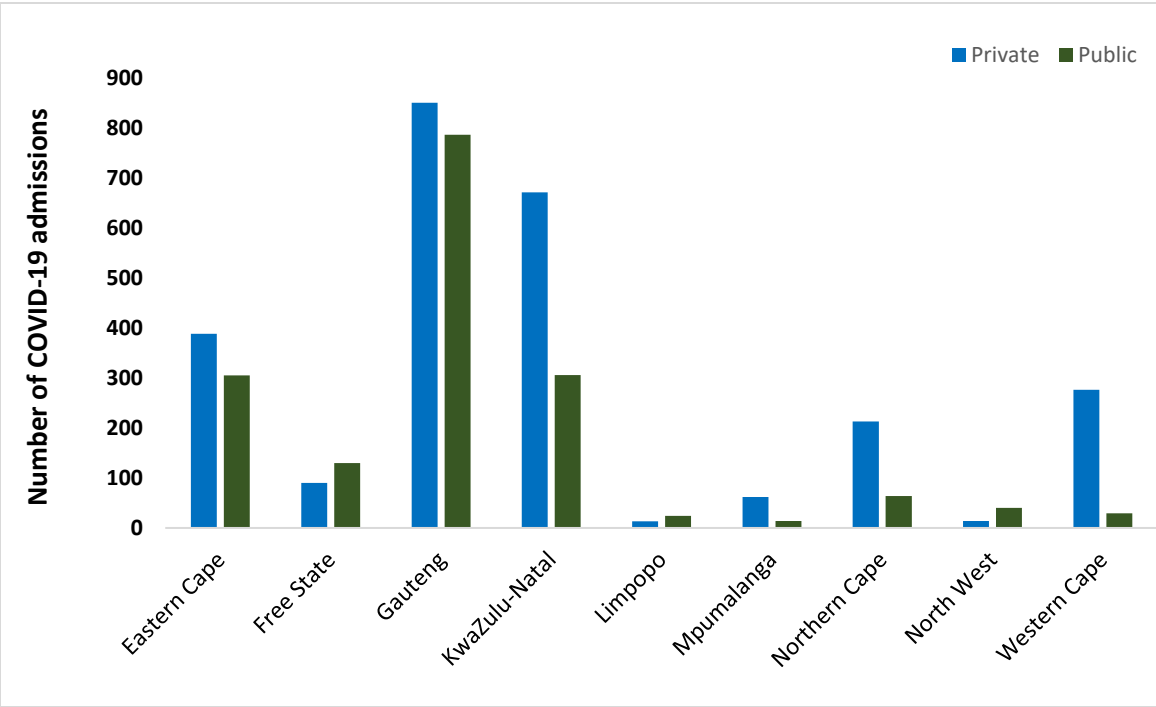


Figure 1: Number of reported COVID-19 admissions among HCWs by province and health-sector, South Africa, 5 March –21 November 2020 (n=4275)

The overall number of admissions has been decreasing since week 30, however, there is a steady increase of hospital admission from week 44 to week 47. (Figure 2). By province, the Eastern Cape indicated the highest number of hospital admissions as shown in Figure 3.

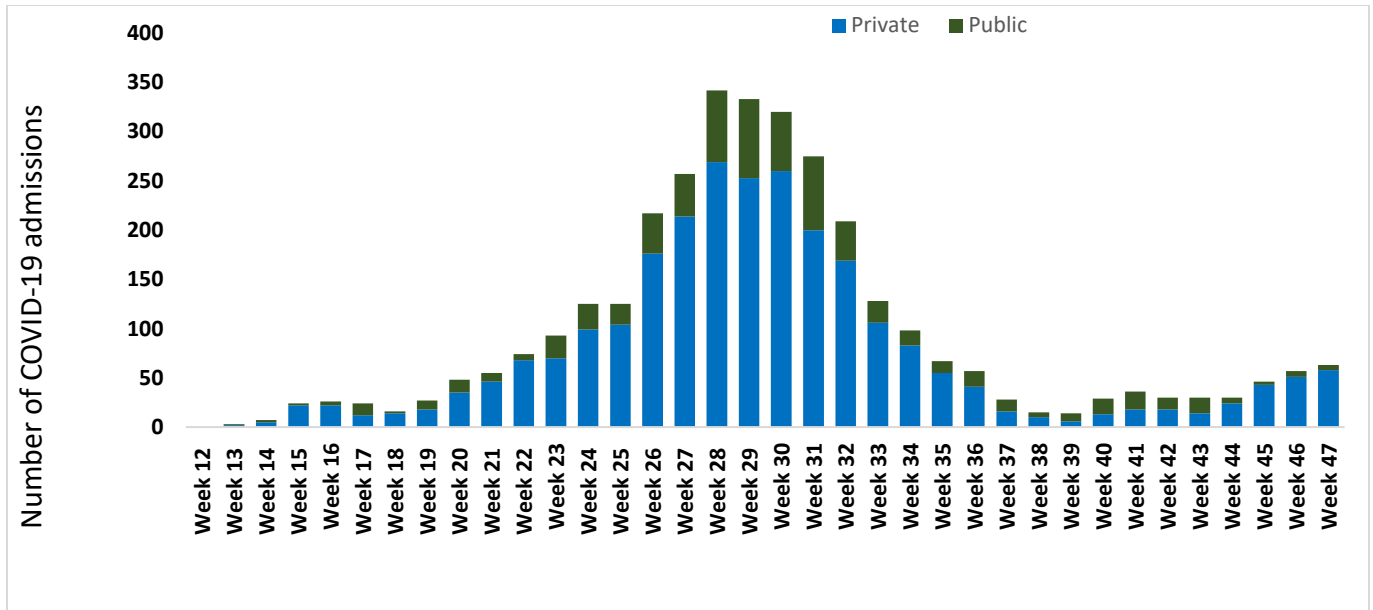


Figure 2: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and health-sector, South Africa, 5 March– 21 November 2020 (n=4275)

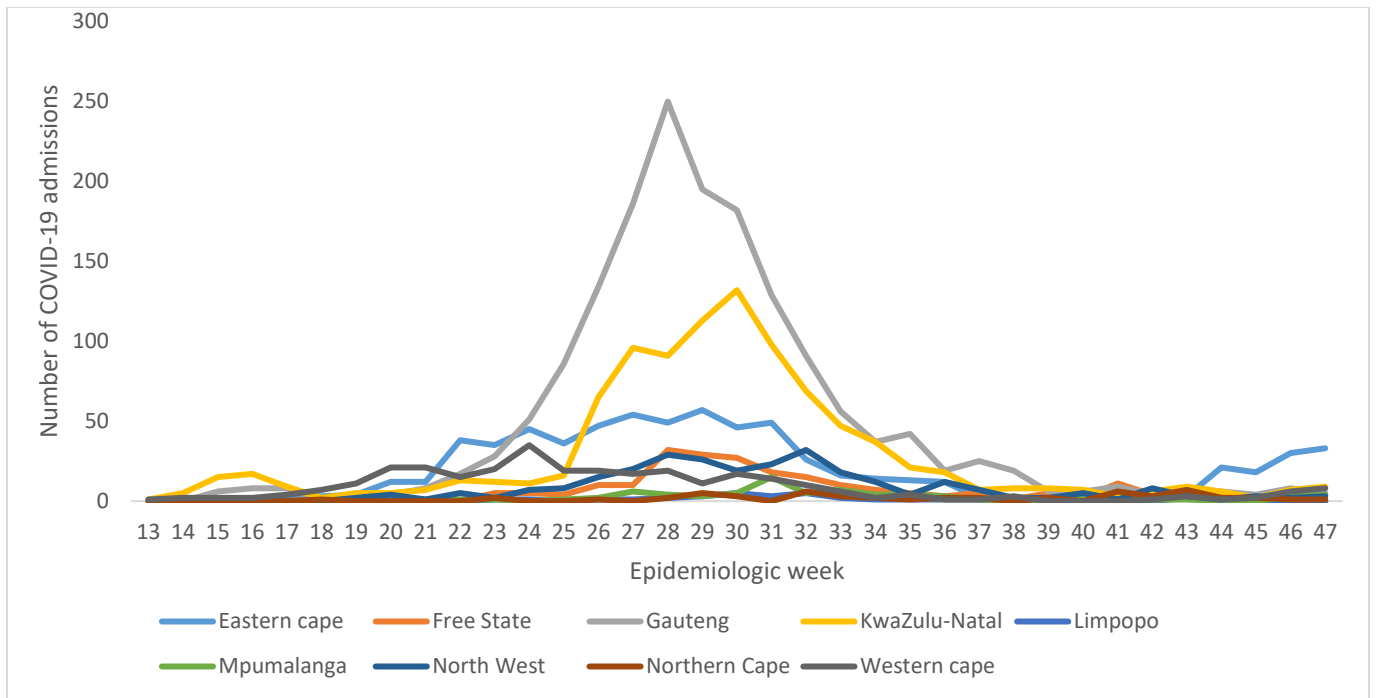


Figure 3: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and provinces, South Africa, 5 March– 21 November 2020 (n=4275)

Demographic and clinical characteristics of COVID-19 admissions among HCWs, South Africa, 5 March– 21 November 2020

The median age of COVID-19 admissions among HCWs was 47 years (interquartile range [IQR] 37–56). There were 616 (14.39%) admissions in HCW 60 years and older (Figure 3). Among admitted HCWs with COVID-19, 3152 (73.7%) were female. The sex ratio varied by age group with females more common than males in all age groups (Figure 4). Among the 3152 female admissions, 54 (1.7%) were pregnant.

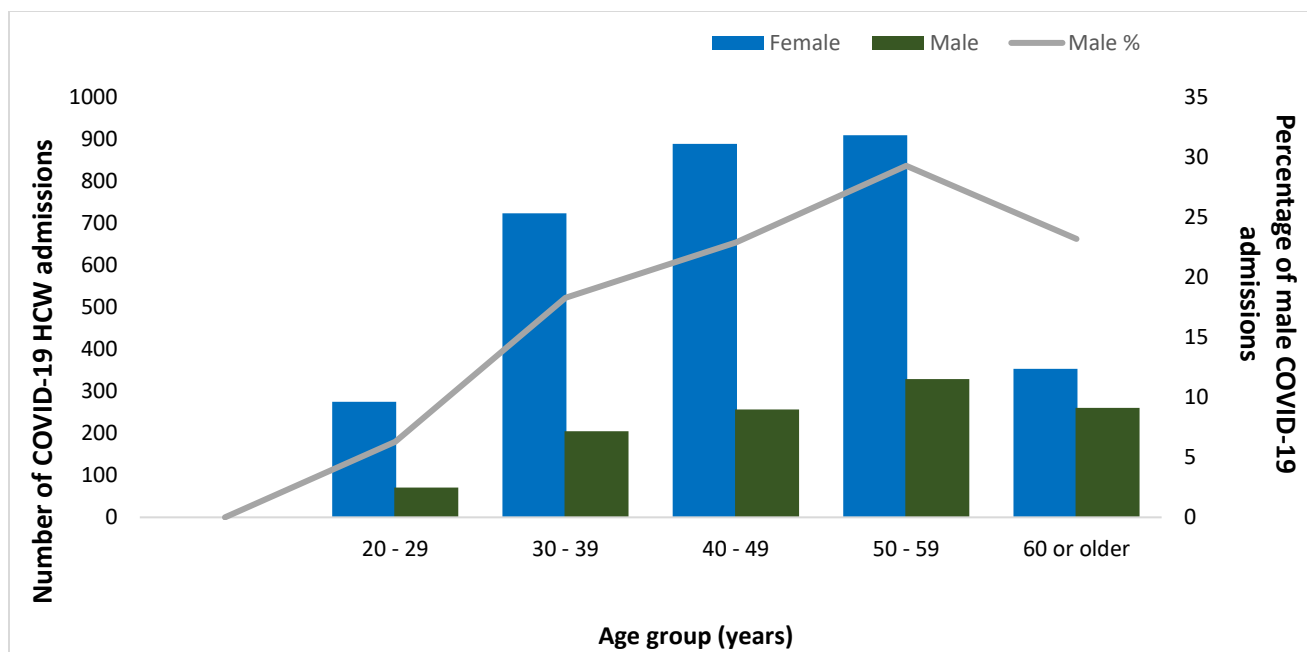


Figure 4: Number of reported COVID-19 HCW admissions by age, gender and percentage of males, South Africa, 5 March–21 November 2020 (n=4275)

The prevalence of HCWs with comorbid diseases was 1630/3043 (53.6%). Among the 3043 HCWs who had reported whether they had a comorbid condition or not, the most commonly reported comorbid conditions

were hypertension (1087/3043; 35.7%) and diabetes (700/3043; 23.0%). There were 212/3043; 6.9%) HCWs who were HIV positive, 28/3043; 0.9%) with active tuberculosis (TB) and 19/3043; 0.6%) with a previous history of TB (Table 2).

Table 2: The prevalence of comorbid diseases in COVID-19 admissions among HCWs in, South Africa, 5 March– 21 November 2020 (n=3043)

Comorbid disease*	Frequency (n)	Percentage (%)
Hypertension	1087	35.7
Diabetes mellitus	700	23.0
Chronic cardiac disease	70	2.3
Chronic pulmonary disease/Asthma	212	6.9
Chronic renal disease	18	6.9
Malignancy	23	0.7
HIV	212	6.9
Active tuberculosis	28	0.9
Previous history of tuberculosis	19	0.6

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

Severity

- A total of 503 (11.8%) HCW admissions were ever treated in ICU, of these 297 (59.1%) were treated with oxygen, 187 (36.6%) were treated on ventilation and 99(33.3%) received both treatment. The mean age of patients who received oxygen or ventilation as an intervention (51 years) was significantly different from those who did not receive oxygen or ventilation intervention (45 years) ($p < 0.0001$). Of the HCW admissions treated with oxygen or ventilation, 486 (37.7%) had at least one comorbid disease ($p < 0.001$).

Outcomes

Of the 4275 HCW admissions, 3726 (87.2%) were discharged alive, 60 (1.4%) transferred out to either higher level care or step-down facilities, 341 (8.0%) HCWs had died and 148(3.5%) were currently in hospital. The case fatality ratio (CFR) of 8.4% (341/4067) among HCWs with known in-hospital

outcome was lower than the CFR among non-HCW admissions reported to DATCOV (16647/88774; 18.8%). (Figure 5).

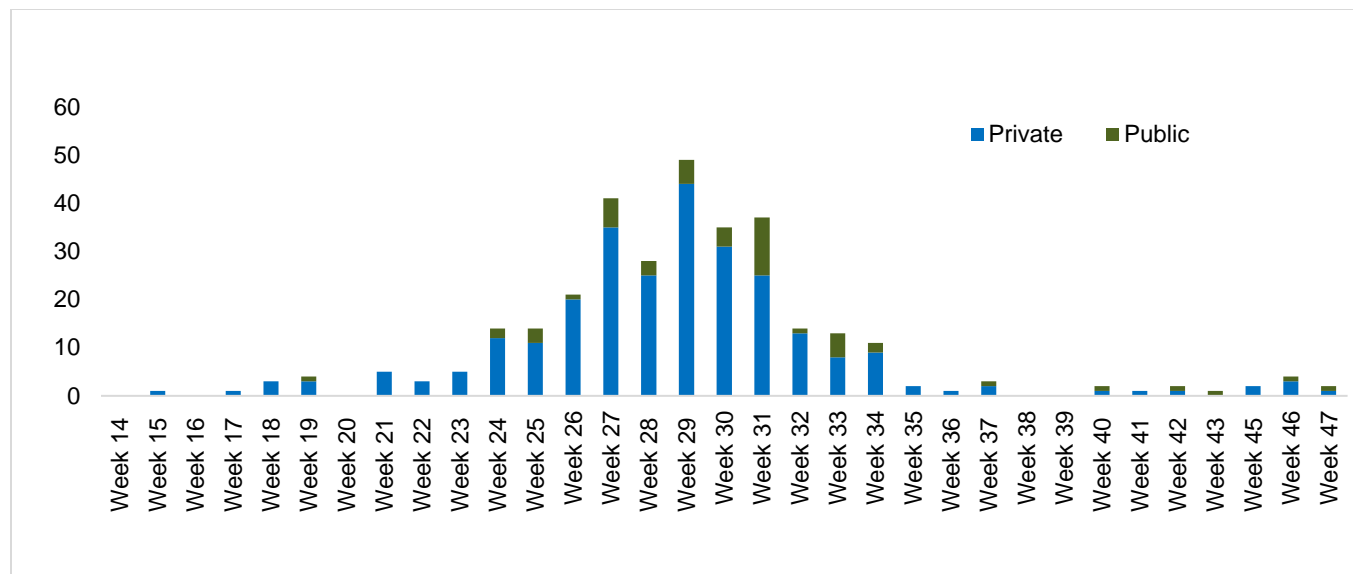


Figure 5. Number of reported COVID-19 deaths among HCW by epidemiology week in private and public sector, South Africa, 5 March– 21 November 2020.

Please note that the mortality data presented was based on available information from sentinel hospitals as of 21 November 2020, thus not all deaths that occurred during the reporting period nationally are included. Deaths that were subsequently confirmed not to be of a HCW were removed from the data set.

The majority of deaths among HCW admitted with COVID-19, 105 (30.8%), were reported in the Eastern Cape, followed by 82 (24.1%) from Gauteng and 81 (23.8%) from KwaZulu-Natal provinces. One hundred and thirty-eight (40.5%) deaths recorded were among HCWs aged 60 years and older. The median age of those who died was 57 (IQR 50 – 64) years compared to 46 (IQR 37 – 55) years for those who were still alive. One hundred and thirty-two, (38.7%) of the deceased were admitted in ICU, 130 (38.1%) were ventilated, and 194 (56.9 %) were given supplemental oxygen. The median length of stay for the HCWs who died was 10 days [IQR 4 – 20] compared to 6 days [2 – 11] for those discharged alive. Of the HCWs who died, 242 (75.7%) had comorbid disease reported and 130 (39.8%) had more than one reported comorbidity. Hypertension 186 (59.1%) and diabetes 142 (45.4%) were the common reported comorbid diseases among the deceased.

Conclusion

Admissions among HCWs are declining in keeping with the national trend. However, there has been a steady increase in number of admissions since week 44 albeit at a slower rate. The CFR among HCWs was lower than in the non-HCW. Healthcare workers with comorbid medical conditions also have a high proportion of deaths.

Acknowledgements

Our gratitude goes to the National Institute for Communicable Diseases for granting access to the data.