

COVID-19 Sentinel Hospital Surveillance Weekly Update on Hospitalized HCWs

Update: Week 51, 2020



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This report summarises data of COVID-19 cases admitted to sentinel hospital surveillance sites in all provinces. The report is based on data collected from 5 March to 19 December 2020 on the DATCOV platform.

HIGHLIGHTS

- As of 19 December 2020, 4696 (3.8%) of the 125067 COVID-19 hospital admissions recorded on the DATCOV surveillance database, were health care workers (HCWs), reported from 618 facilities in all nine provinces of South Africa. Among 1511/4696 (32.3%) HCWs with available data on type of work, 939/1511 (62.1%) were nurses, 295/1511 (19.5%) porters or administrators, 136/1511 (9.0%) allied HCWs, 90/1511 (5.9%) doctors, 33/1511 (2.2%) paramedics, and 18/1511 (0.12%) laboratory scientists.
- There was an increase of 327 new HCW admissions since week 49.
- There were 1731(36.9%) and 2965 (63.1%) admissions reported in the public and private sector, respectively.
- The majority of HCW admissions (4006, 85.3%) were recorded in four provinces, with the highest number (1653, 35.20%) reported in Gauteng, followed by (1136, 24.2%) in KwaZulu-Natal, (829, 17.7%) in Eastern Cape and (388, 8.3%) in Western Cape provinces
- The median age of COVID-19 admissions among HCWs was 48 years (interquartile range [IQR] 38–56). There were 743 (15.8%) admissions in HCW 60 years and older (Figure 3). Among admitted HCWs with COVID-19, 3411 (72.7%) were female.
- The prevalence of HCWs with comorbid diseases was 1901/3542 (53.7%). Among the 3542 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (1281/3542; 36.2%) and diabetes (835/3542; 23.5%). There were 233/3542; 6.6% HCWs who were HIV positive, 30/3542; 0.8% with active tuberculosis (TB) and 22/3542; 0.6% with a previous history of TB.
- A total of 750 (15.9%) HCW admissions were ever treated in ICU, of these 417 (55.6%) were treated with oxygen, 241 (32.1%) were treated on ventilation and 524 (69.8%) received both treatments. Of the 4696 HCW admissions, 4012(85.4%) were discharged alive, 73 (1.6%) transferred out to either higher level care or step-down facilities, 396 (8.4%) HCWs had died and 215 (4.6%) were currently in hospital. The majority of deaths among HCW admitted with COVID-19, 133 (33.6%), were reported in the Eastern Cape, followed by 89 (22.5%) from KwaZulu-Natal and 85 (21.5%) from Gauteng provinces. Of the HCWs who died, 287/396 (72.4%) had a comorbid disease reported and 153/396 (38.6%) had more than one reported comorbidity
- HCWs with known in-hospital outcome had case fatality ratio of (396/4408, 9.0%).

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 19 December 2020, a total of 618 facilities, 368 from public sector and 250 from private sector, submitted data on hospitalized patients with COVID-19 (Table 1).

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

Provinces	Public	Private
Eastern Cape	84	18
Free State	35	20
Gauteng	38	90
KwaZulu-Natal	62	45
Limpopo	35	7
Mpumalanga	27	9
North West	13	12
Northern Cape	16	8
Western Cape	58	41
South Africa	368	250

Results

From 5 March to 19 December 2020, there was a total of 4696/125067 (3.8%) COVID-19 admissions among HCWs. Of these admissions, 1731(36.9%) and 2965 (63.1%) were reported in the public and private sector, respectively (Figure 1). The majority of HCW admissions (4006/4696; 85.3%) were recorded in four provinces, with the highest number 1653/4696 (35.20%) reported in Gauteng, followed by 1136/4696 (24.2%) in KwaZulu-Natal, 829/4696 (17.7%) in Eastern Cape and 388/4696 (8.3%) in Western Cape provinces (Figure 1).

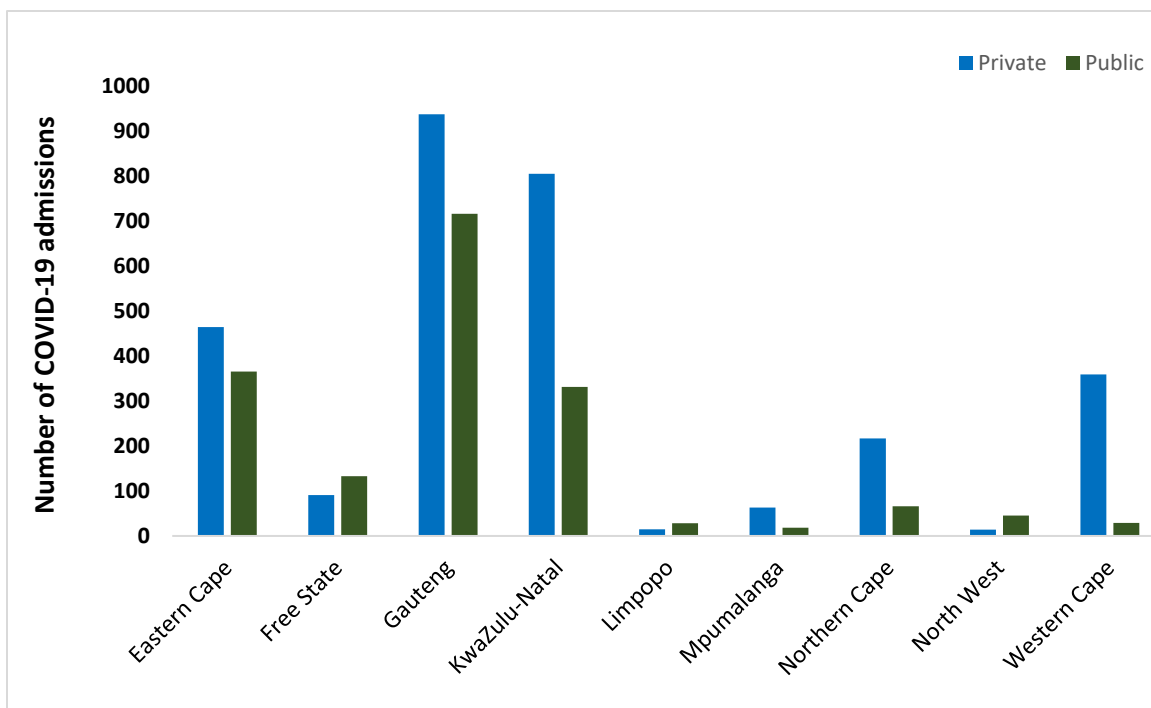


Figure 1: Number of reported COVID-19 admissions among HCWs by province and health-sector, South Africa, 5 March –19 December 2020 (n=4696)

The overall number of admissions has been decreasing since week 29, however, there was a steady increase in hospital admissions from week 45 to week 48. After the slight decline in number of admissions in week 49, week 50 and 51 showed a dramatic increase in the number of new admissions. By province, the Kwa-Zulu-Natal and Gauteng indicated the highest number of hospital admissions from week 50 to week 51 as shown in Figure 3.

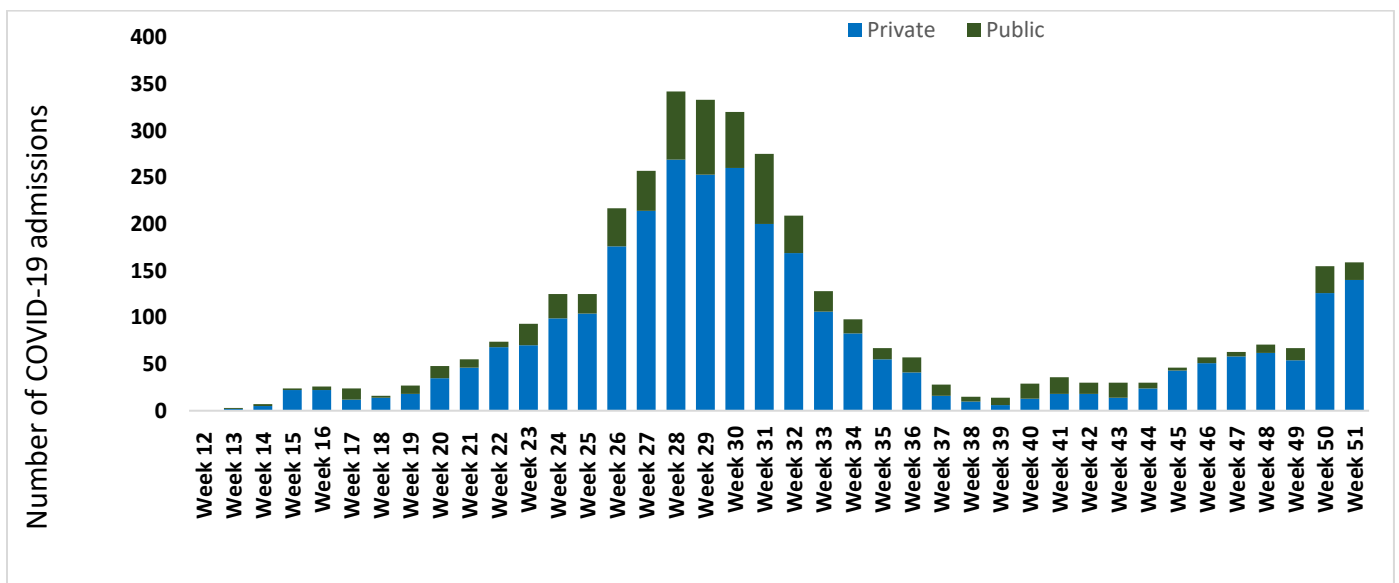


Figure 2: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and health-sector, South Africa, 5 March– 19 December 2020 (n=4696)

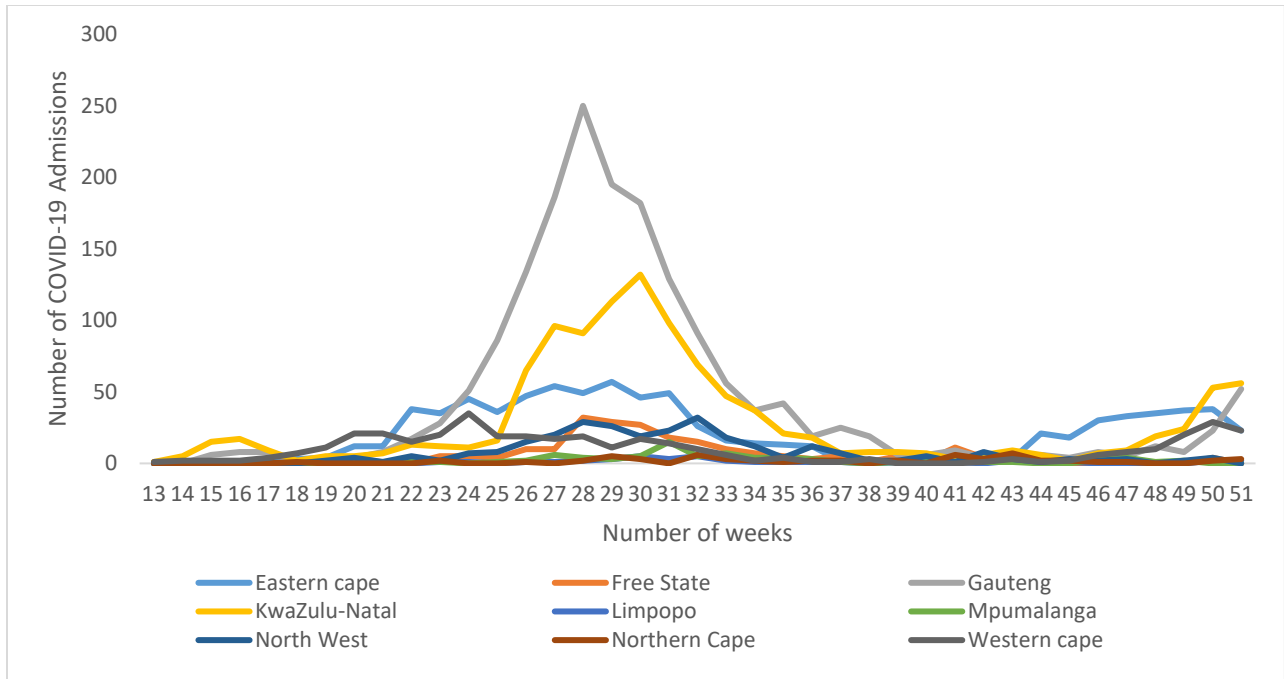


Figure 3: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and provinces, South Africa, 5 March– 19 December 2020 (n=4696)

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

The median age of COVID-19 admissions among HCWs was 48 years (interquartile range [IQR] 38–56). There were 743 (15.8%) admissions in HCW 60 years and older (Figure 3). Among admitted HCWs with COVID-19, 3411 (72.7%) were female. The sex ratio varied by age group with females more common than males in all age groups (Figure 4). Among the 3411 female admissions, 65 (1.9%) were pregnant.

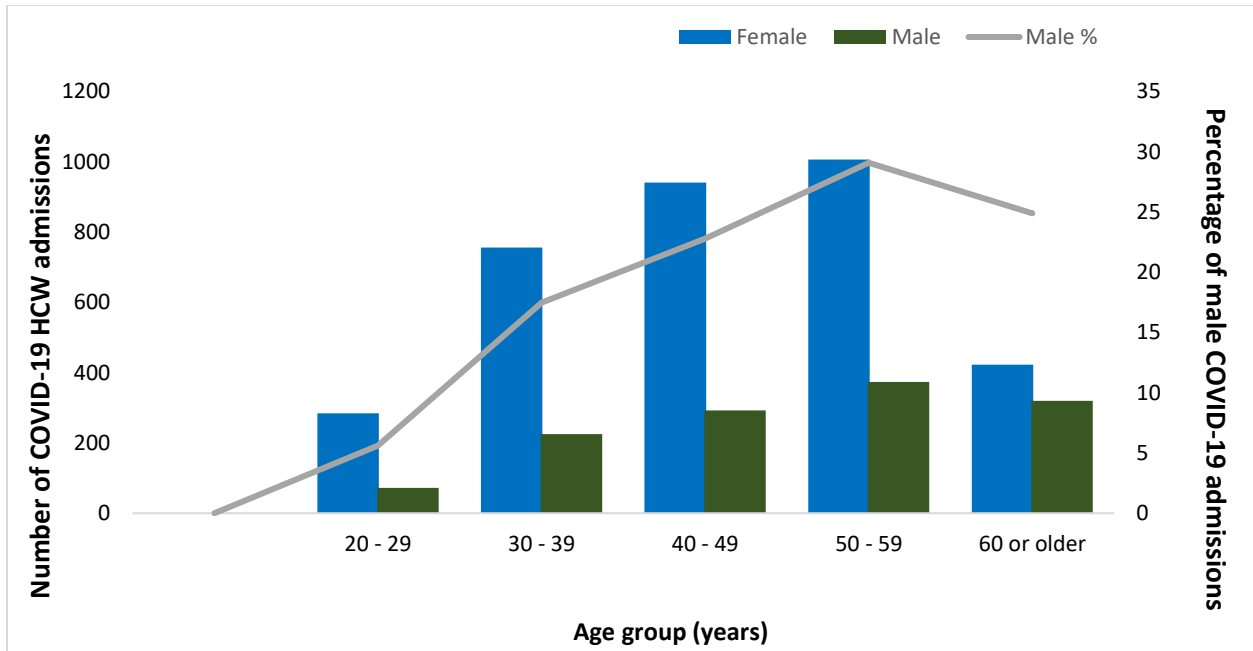


Figure 4: Number of reported COVID-19 HCW admissions by age, gender and percentage of males, South Africa, 5 March–19 December 2020 (n=4696)

The prevalence of HCWs with comorbid diseases was 1901/3542 (53.7%). Among the 3542 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (1281/3542; 36.2%) and diabetes (835/3542; 23.5%). There were 233/3542; 6.6%) HCWs who were HIV positive, 30/3542; 0.8%) with active tuberculosis (TB) and 22/3542; 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– 19 December 2020 (n=3542)

Comorbid disease*	Frequency (n)	Percentage (%)
Hypertension	1281	36.2
Diabetes mellitus	835	23.6
Chronic cardiac disease	80	2.2
Chronic pulmonary disease/Asthma	233	6.6
Chronic renal disease	21	0.6
Malignancy	23	0.6
HIV	233	6.6
Active tuberculosis	30	0.8
Previous history of tuberculosis	22	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 750 (15.9%) HCW admissions were ever treated in ICU, of these 417 (55.6%) were treated with oxygen, 241 (32.1%) were treated on ventilation and 524 (69.8%) received both treatment. The mean age of patients who received oxygen or ventilation as an intervention (52 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, 413 (26.0%) had more than one comorbid disease ($p < 0.001$).

Outcomes

Of the 4696 HCW admissions, 4012 (85.4%) were discharged alive, 73 (1.6%) transferred out to either higher level care or step-down facilities, 396 (8.4%) HCWs had died and 215 (4.6%) were currently in hospital. The case fatality ratio (CFR) of (396/4408, 9.0%) among HCWs with known in-hospital outcome was lower than the CFR among non-HCW admissions reported to DATCOV 21236/109143; 19.5%) (Figure 5)

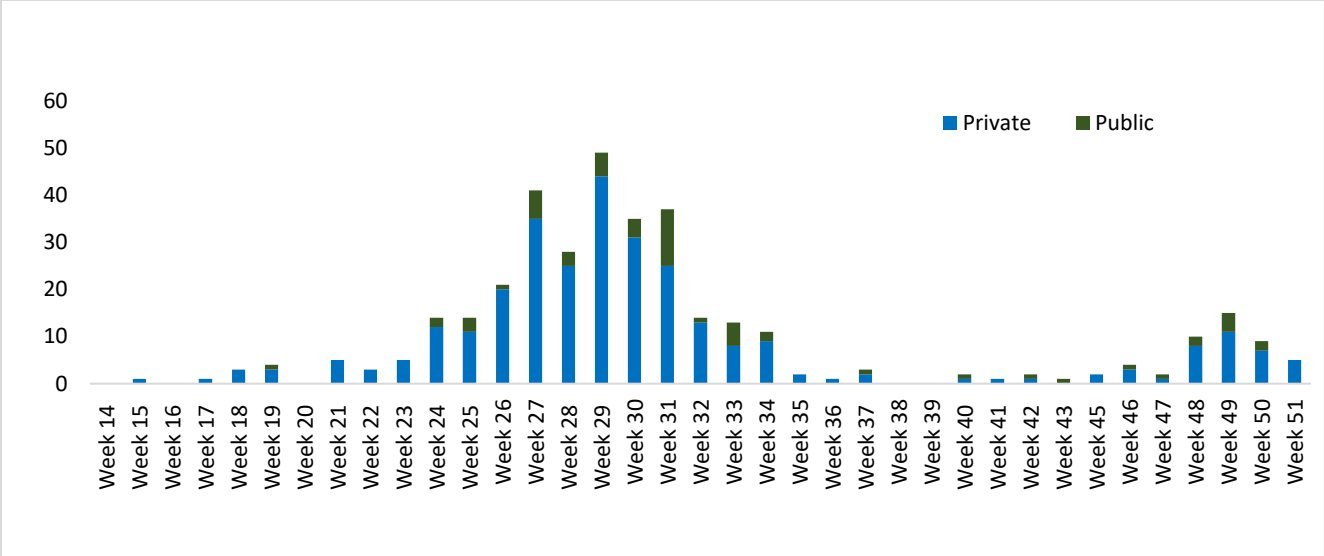


Figure 5. Number of reported COVID-19 deaths among HCW by epidemiology week in private and public sector, South Africa, 5 March– 19 December 2020.

Please note that the mortality data presented was based on available information from sentinel hospitals as of 19 December 2020, thus not all deaths that occurred during the reporting period nationally are included. Deaths that were subsequently confirmed not be of a HCW were removed from the data set.

The majority of deaths among HCW admitted with COVID-19, 133 (33.6%), were reported in the Eastern Cape, followed by 89 (22.5%) from KwaZulu-Natal and 85 (21.5%) from Gauteng provinces. One hundred sixty-even (42.2%) deaths recorded were among HCWs aged 60 years and older. The median age of those who died was 58 (IQR 50 – 65) years compared to 46 (IQR 37 – 55) years for those who were still alive. Two hundred and fifty-four, (64.14%) of the deceased were admitted in ICU, 141 (35.6%) were ventilated, and 231 (58.33 %) were given supplemental oxygen. The median length of stay for the HCWs who died was 10 days [IQR 4 – 19] compared to 6 days [3 – 10] for those discharged alive. Of the HCWs who died, 287 (72.5%) had comorbid disease reported and 153 (38.6%) had more than one reported comorbidity. Hypertension 224 (56.6%) and diabetes 170 (42.9%) were the common reported comorbid diseases among the deceased.

Conclusion

The overall number of admissions among HCWs increased significantly in week 50 and 51. The CFR among HCWs was lower than in the non-HCW. A high proportion of deaths were seen among healthcare workers with comorbid medical conditions.

Acknowledgements

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