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COVID-19 Sentinel Hospital Surveillance Weekly Update on Hospitalized HCWs

Update: Week 49, 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 5 December 2020 on the DATCOV platform.

HIGHLIGHTS

- As of 5 December 2020, 4369 (3.9%) of the 111904 COVID-19 hospital admissions recorded on the DATCOV surveillance database, were health care workers (HCWs), reported from 615 facilities in all nine provinces of South Africa. Among 1410/4369 (32.3%) HCWs with available data on type of work, 870/1410 (61.7%) were nurses, 276/1410 (19.6%) porters or administrators, 131/1410 (9.3%) allied HCWs, 90/1410 (6.4%) doctors, 29/1410 (2.1%) paramedics, and 14/1410 (0.9%) laboratory scientists.
 - There was an increase of 94 new HCW admissions since week 47.
 - There were 1670 (38.2%) and 2699 (61.8%) admissions reported in the public and private sector, respectively.
 - The majority of HCW admissions were reported in Gauteng (1593, 36.5%), followed by KwaZulu-Natal (1015, 23.2%), and Eastern Cape (757, 17.3%).
 - The median age of COVID-19 HCW admissions was 47 years, there were 655 (14.9%) admissions in HCWs aged 60 years and older. Among admitted HCWs with COVID-19, 3202 (73.3%) were female.
 - The prevalence of HCWs with comorbid diseases was 1765/3264 (54.1%). Among the 3264 HCWs who had reported a having a comorbid condition or not, the most commonly reported comorbid conditions were hypertension (1179/3264; 36.1%) and diabetes (768/3264; 23.5%). There were 221/3264; 6.8% HCWs who were HIV positive, 28/3264; 0.9% with active tuberculosis (TB) and 21/3264; 0.6% with a previous history of TB.
 - A total of 566 (12.9%) HCW admissions were ever treated in ICU, of these 345 (60.9%) were treated with oxygen, 214 (37.8%) were treated on ventilation and 126 (36.5%) received both treatment. Of the 4369 HCW admissions, 3817(87.4%) were discharged alive, 66 (1.5%) transferred out to either higher level care or step-down facilities, 367 (8.4%) HCWs had died and 119 (2.7%) were currently in hospital. The majority of deaths among HCWs admitted with COVID-19, 117 (31.9%), were reported in the Eastern Cape, followed by 86 (23.4%) from Gauteng and 82 (22.3%) from KwaZulu-Natal provinces. Of the HCWs who died, (258/367; 70.3%) had comorbid disease reported and (139/367; 37.9%) had more than one reported comorbidity.
 - HCWs with known in-hospital outcome had case fatality ratio of 8.7% (367/4184).
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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 5 December 2020, a total of 615 facilities, 365 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 – 5 December 2020

Provinces	Public	Private
Eastern Cape	84	18
Free State	35	20
Gauteng	38	90
KwaZulu-Natal	62	45
Limpopo	34	7
Mpumalanga	26	9
North West	13	12
Northern Cape	16	8
Western Cape	57	41
South Africa	365	250

Results

From 5 March to 5 December 2020, there was a total of 4369/111904 (3.9%) COVID-19 admissions among HCWs. Of these admissions, 1670 (38.2%) and 2699 (61.8%) were reported in the public and private sector, respectively (Figure 1). The majority of HCW admissions (3695/4369; 84.6%) were recorded in four provinces, with the highest number 1593/4369 (36.5%) reported in Gauteng, followed by 1015/4369 (23.2%) in KwaZulu-Natal, 757/4369 (17.3%) in Eastern Cape and 330/4369 (7.6%) in Western Cape provinces (Figure 1).

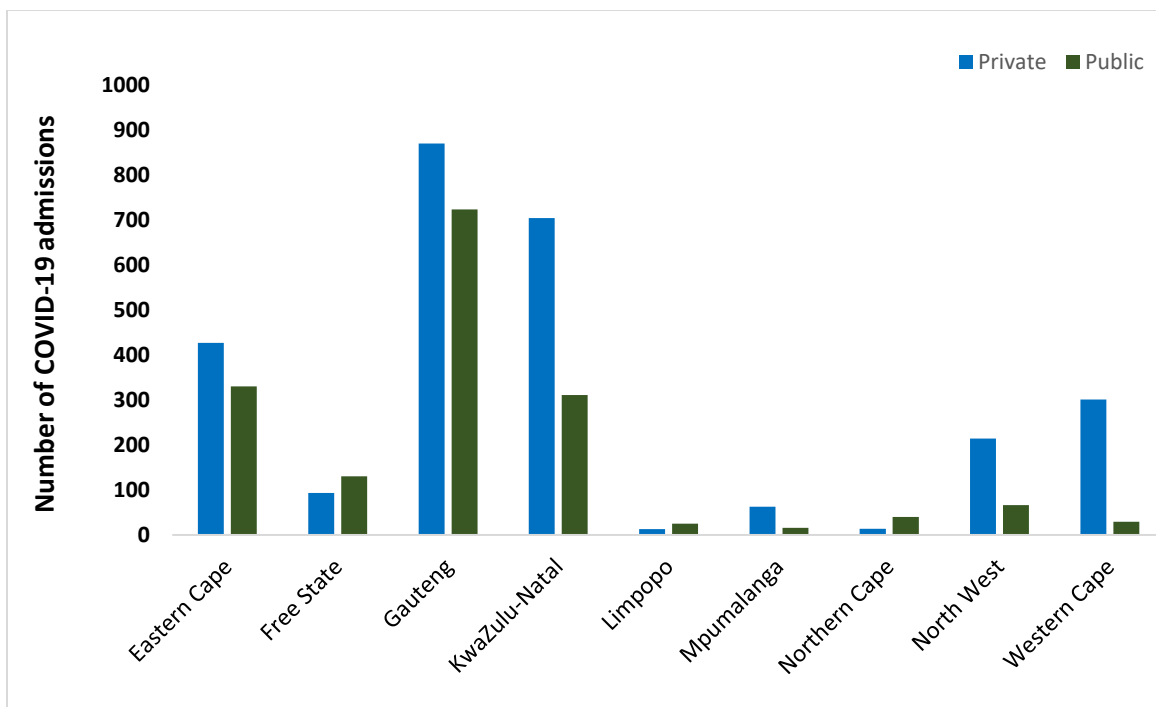


Figure 1: Number of reported COVID-19 admissions among HCWs by province and health-sector, South Africa, 5 March –5 December 2020 (n=4369)

The overall number of admissions had been decreasing since week 29, however, there was a steady increase in hospital admission from week 45 to week 48. The number of HCW admissions have declined in week 49 (Figure 2). By province, the Eastern Cape indicated the highest number of hospital admissions between week 44 to week 49 as shown in Figure 3.

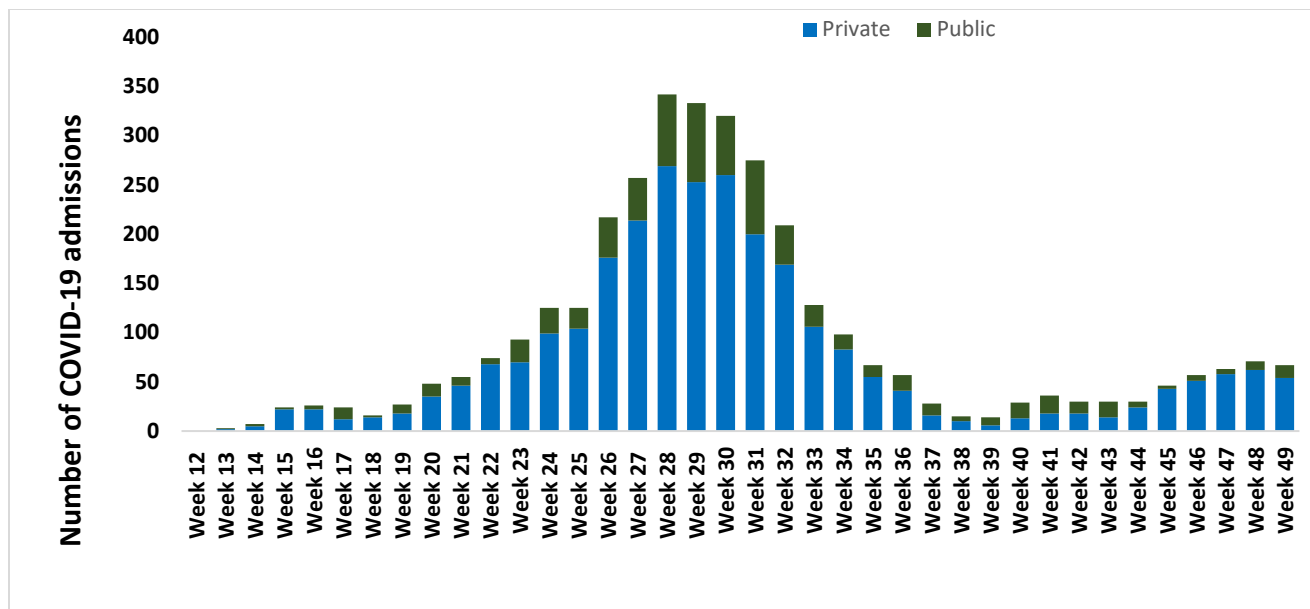


Figure 2: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and health-sector, South Africa, 5 March– 5 December 2020 (n=4369)

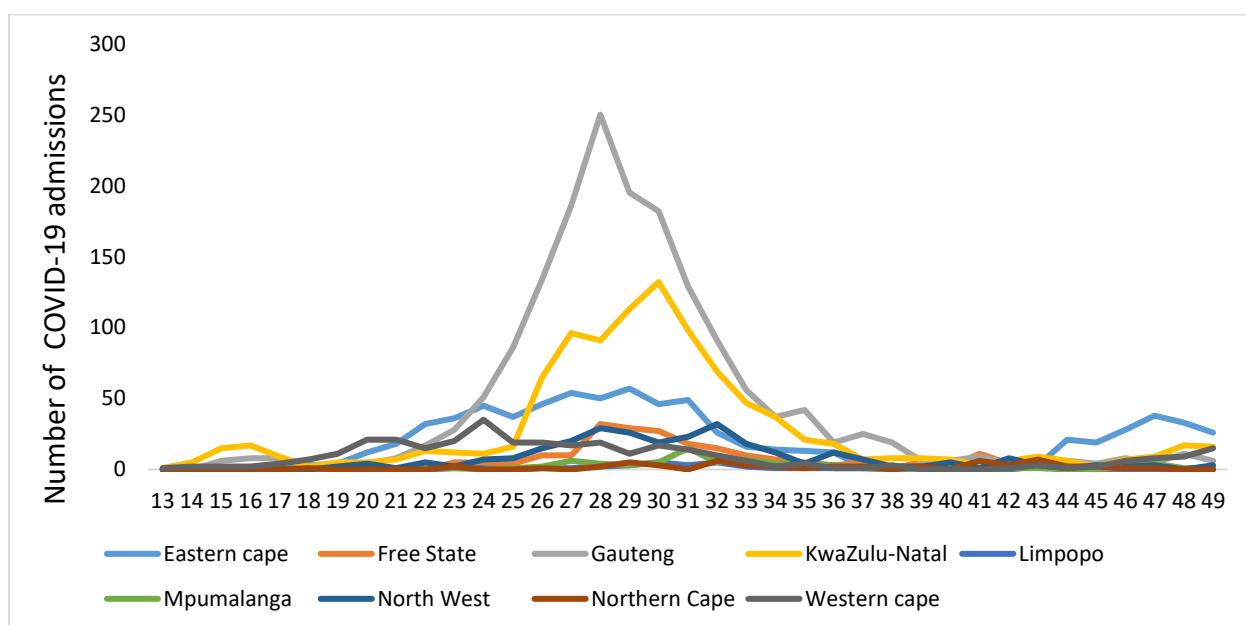


Figure 3: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and provinces, South Africa, 5 March– 5 December 2020 (n=4369)

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

The median age of COVID-19 admissions among HCWs was 47 years (interquartile range [IQR] 38–56). There were 655 (14.9%) admissions in HCW 60 years and older (Figure 3). Among admitted HCWs with COVID-19, 3202 (73.3%) were female. The sex ratio varied by age group with females more common than males in all age groups (Figure 4). Among the 3202 female admissions, 58 (1.8%) were pregnant.

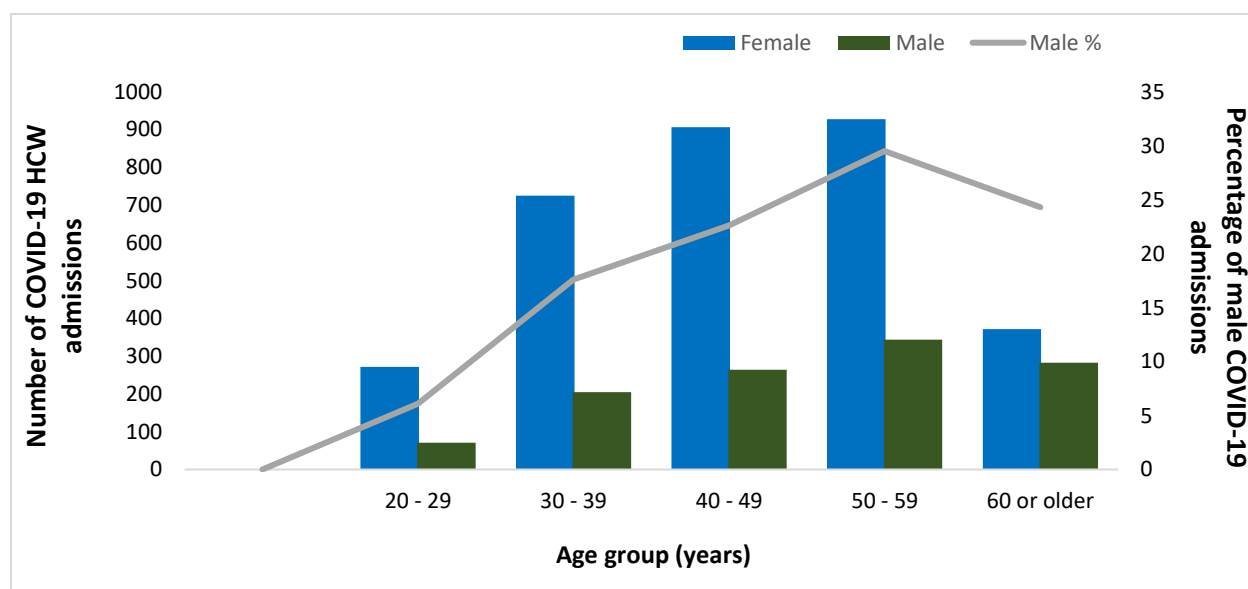


Figure 4: Number of reported COVID-19 HCW admissions by age, gender and percentage of males, South Africa, 5 March–5 December 2020 (n=4369)

The prevalence of HCWs with comorbid diseases was 1765/3264 (54.1%). Among the 3264 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (1179/3264; 36.1%) and diabetes (768/3264; 23.5%). There were 221/3264; 6.8%) HCWs who were HIV positive, 28/3264; 0.9%) with active tuberculosis (TB) and 21/3264; 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– 5 December 2020 (n=3264)

Comorbid disease*	Frequency (n)	Percentage (%)
Hypertension	1179	36.1
Diabetes mellitus	768	23.5
Chronic cardiac disease	74	2.3
Chronic pulmonary disease/Asthma	219	6.7
Chronic renal disease	19	0.6
Malignancy	23	0.7
HIV	221	6.8
Active tuberculosis	28	0.9
Previous history of tuberculosis	21	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 566 (12.9%) HCW admissions were ever treated in ICU, of these 345 (60.9%) were treated with oxygen, 214 (37.8%) were treated on ventilation and 126 (36.5%) 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, 662 (20.3%) had more than one comorbid disease ($p < 0.001$).

Outcomes

Of the 4369 HCW admissions, 3817(87.4%) were discharged alive, 66 (1.5%) transferred out to either higher level care or step-down facilities, 367 (8.4%) HCWs had died and 119 (2.7%) were currently in hospital. The case fatality ratio (CFR) of (367/4184 8.7%) among HCWs with known in-hospital outcome was lower than the CFR among non-HCW admissions reported to DATCOV 18835/98603; 19.1%) (Figure 5).

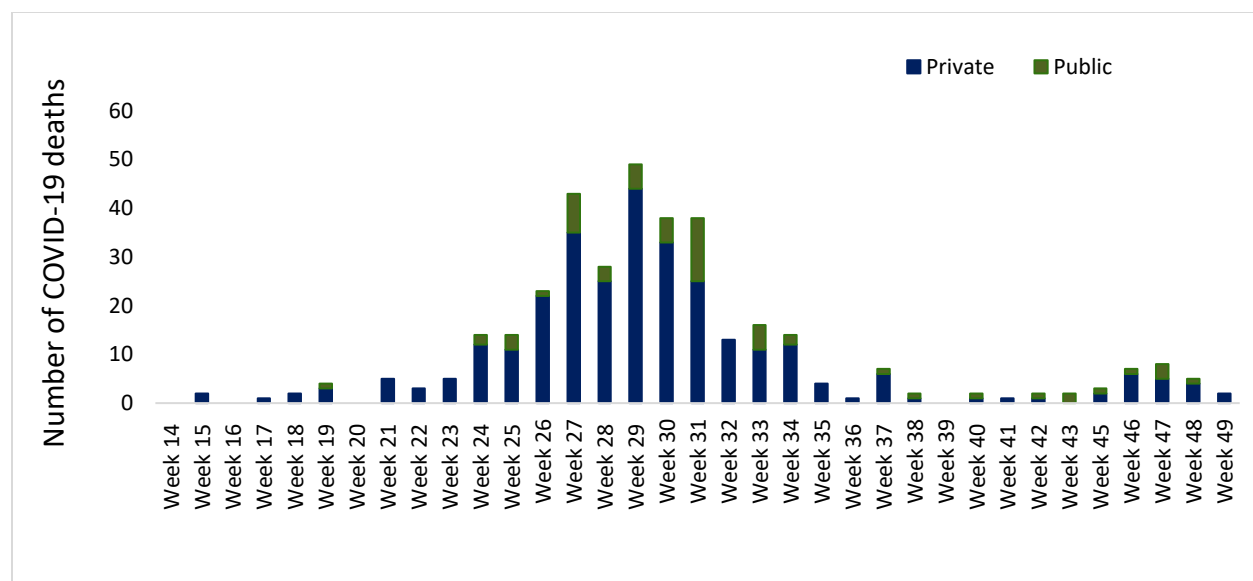


Figure 5. Number of reported COVID-19 deaths among HCW by epidemiology week in private and public sector, South Africa, 5 March– 5 December 2020.

Please note that the mortality data presented was based on available information from sentinel hospitals as of 5 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, 117 (31.9%), were reported in the Eastern Cape, followed by 86 (23.4%) from Gauteng and 82 (22.3%) from KwaZulu-Natal provinces. One hundred and fifty (40.9%) deaths recorded were among HCWs aged 60 years and older. The median age of those who died was 57 (IQR 49 – 64) years compared to 46 (IQR 37 – 55) years for those who were still alive. One hundred and forty-three, (38.9%) of the deceased were admitted in ICU, 143 (38.9%) were ventilated, and 217 (59.1 %) were given supplemental oxygen. The median length of stay for the HCWs who died was 10 days [IQR 4 – 20] compared to 6 days [3 – 10] for

those discharged alive. Of the HCWs who died, 258 (70.3%) had comorbid disease reported and 139 (37.9%) had more than one reported comorbidity. Hypertension 200 (54.5%) and diabetes 153 (44.7%) were the common reported comorbid diseases among the deceased.

Conclusion

The overall number of admissions among HCWs have declined in week 49. The CFR among HCWs was lower than in the non-HCW. A high proportion of deaths continue to be seen among healthcare workers with comorbid medical conditions.

Acknowledgements

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