

# COVID-19

## Sentinel Hospital Surveillance

### Weekly Update on Hospitalized HCWs

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[Update: Week 10, 2021](#)



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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 2020 to 13 March 2021 on the DATCOV platform.

# HIGHLIGHTS

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- As of 13 March 2021, 6758 (3.1%) of the 216228 COVID-19 hospital admissions recorded on the DATCOV surveillance database, were health care workers (HCWs), reported from 643 facilities in all nine provinces of South Africa. Among 2194/6758 (32.5%) HCWs with available data on type of work, 1312 /2194 (59.8%) were nurses, 475/2194 (21.7%) porters or administrators, 189/2194 (8.6%) allied HCWs, 144 /2194 (6.7%) doctors, 52/2194 (2.4%) paramedics, and 22/2194 (1.0%) laboratory scientists.
  - There was an increase of 92 new HCW admissions since week 6 of 2021. There were 3739 (55.3%) and 3019 (44.7%) HCW admissions in the first and second wave, respectively. A total of 423 (43.8%) HCWs died in the second wave compared to the 330 (56.2%) in the first wave. The CFR of HCWs was lower in the first wave (9.0%) than in the second wave (14.5%).
  - There were 2293 (33.9%) and 4465 (66.1%) admissions reported in the public and private sector, respectively.
  - The majority of HCW admissions (5740/6758; 84.9%) were recorded in four provinces, with the highest number 2187/6758 (32.4%) reported in Gauteng, followed by 1769/6758 (26.2%) in KwaZulu-Natal, 978/6758 (14.5%) in Eastern Cape and 806/6758 (11.9%) in Western Cape provinces. The median age of COVID-19 admissions among HCWs was 49 years (interquartile range [IQR] 39–57). There were 1238 (18.3%) admissions in HCW 60 years and older. Among admitted HCWs with COVID-19, 4739 (70.2%) were female.
  - The prevalence of comorbid diseases among HCW was 3046/5696 (53.5%). Among the 5696 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (1998/5696; 35.1%) and diabetes (1301/5696; 22.8%). There were 5.4% (310/5696) of HCWs that were HIV positive, 5.6% (320/5696) were obese, 0.8% (46/5696) had active tuberculosis (TB) and 0.9% (49/5696) reported a previous history of TB.
  - A total of 1114 (16.5%) HCW admissions were ever treated in ICU, of these 694 (62.3%) were treated with oxygen, 389 (34.9%) were treated on ventilation and 830 (74.5%) received both treatments. Of the 6758 HCW admissions, 5834 (86.3%) were discharged alive, 96 (1.4%) transferred out to either higher level care or step-down facilities, 753 (11.1%) HCWs had died and 75 (1.1%) were currently in hospital. The majority of deaths among HCWs admitted with COVID-19, were reported in Kwa-Zulu Natal (211, 28.0%), followed by the Gauteng 193 (25.6%) and 172 (22.8%) from Eastern Cape provinces. Of the HCWs who died, 726 reported on comorbidities, 69.4% (504/726) had at least one comorbid disease reported and 37.2% (270/726) had more than one reported comorbidity.
  - Among HCWs with known in-hospital outcome the case fatality ratio was 11.4% (753/6587).
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# Methods

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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 (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 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).

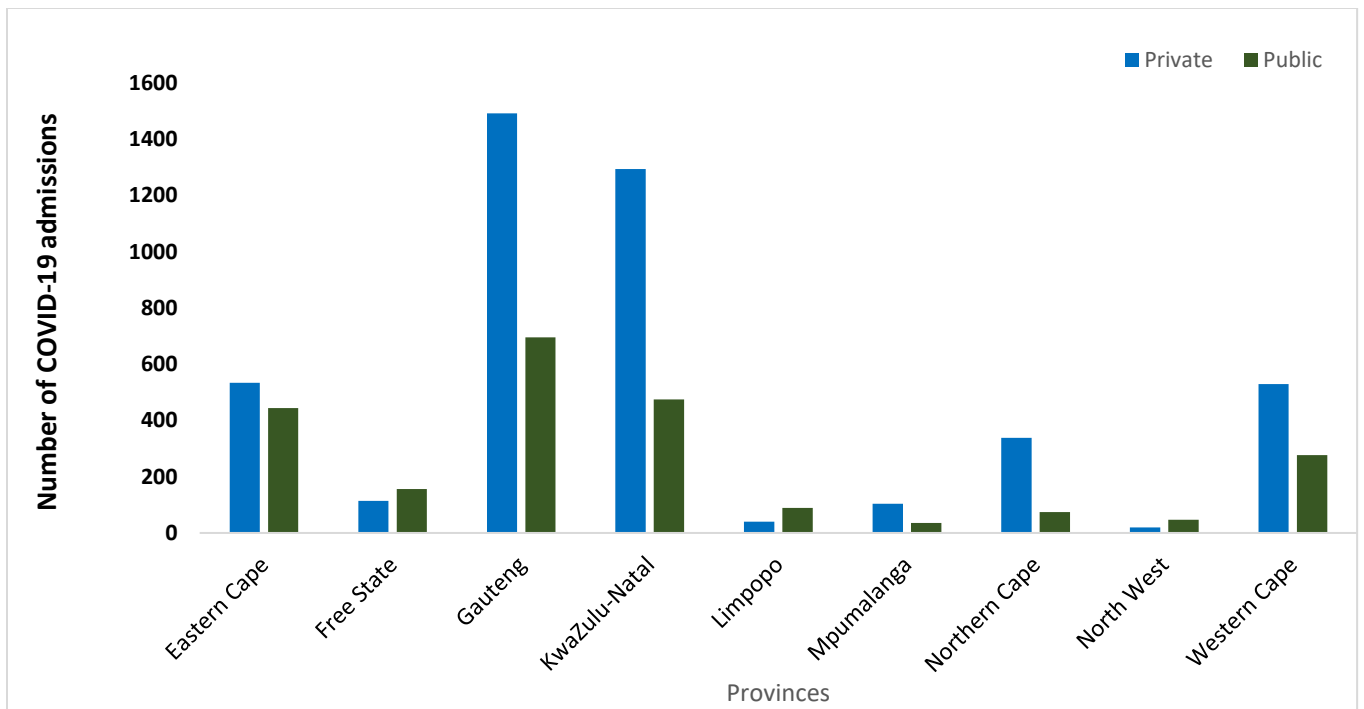
Data on all COVID-19 admissions are received from all private and public hospitals nationally, in all nine provinces. As new hospitals join the surveillance system, they retrospectively captured all admissions recorded. As of 13 March 2021, a total of 643 facilities, 383 from public sector and 260 from 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 2020 – 13 March 2021**

Provinces	Public	Private
Eastern Cape	85	18
Free State	35	20
Gauteng	38	91
KwaZulu-Natal	69	45
Limpopo	41	7
Mpumalanga	31	9
North West	17	12
Northern Cape	8	17
Western Cape	59	41
South Africa	383	260

# Results

From 5 March 2020 to 13 March 2021, there was a total of 6758/216228 (3.1%) COVID-19 admissions among HCWs. Of these admissions, 2293 (33.9%) and 4465 (66.1%) were reported in the public and private sector, respectively (Figure 1). The majority of HCW admissions (5740/6758; 84.9%) were recorded in four provinces, with the highest number 2187/6758 (32.4%) reported in Gauteng, followed by 1769/6758 (26.2%) in KwaZulu-Natal, 978/6758 (14.5%) in Eastern Cape and 806/6758 (11.9%) 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 2020 – 13 March 2021 (n=6758)**

During the first wave of the pandemic, HCW admissions peaked in week 28, and declined from week 29 to week 39 and remained steadily low, until it started increasing again in the second wave from

week 44. The second peak occurred in week one of 2021. From the second week of 2021, the number of admissions declined dramatically. (Figure 2).

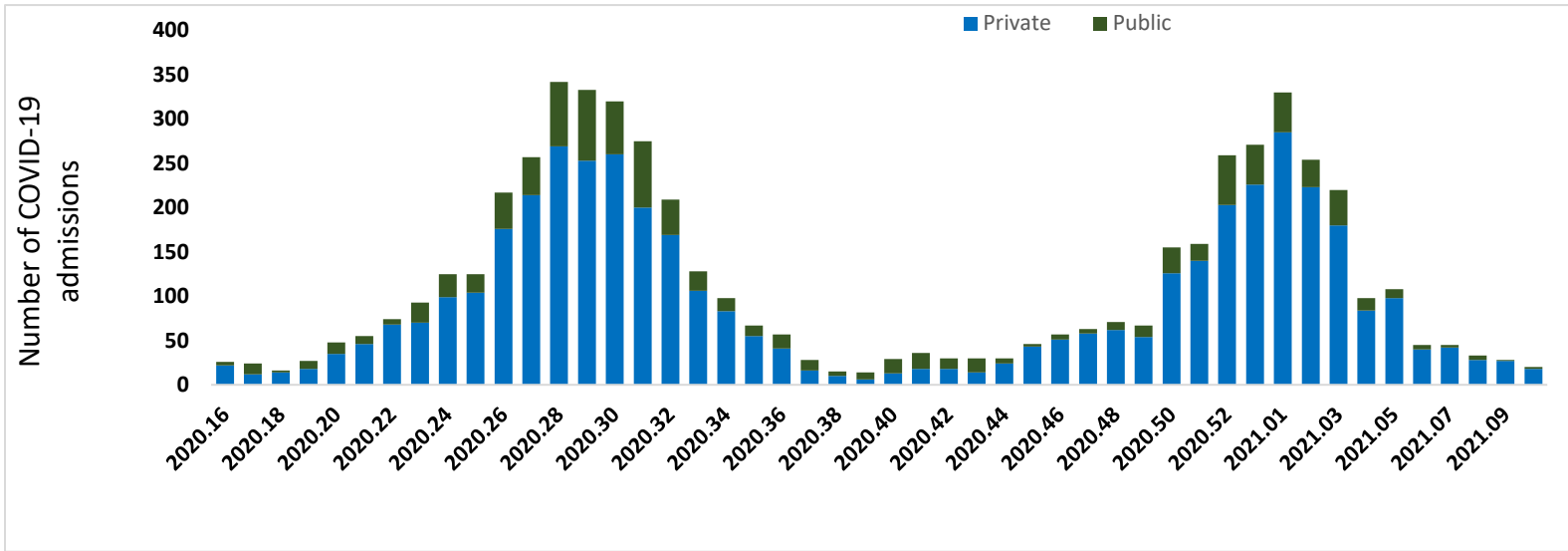


Figure 2: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and health-sector, South Africa, 5 March 2020 – 13 March 2021 (n=6758)

In Gauteng and KwaZulu Natal HCW admissions in the first wave peaked during weeks 28 -30 (Figure 3). Weekly admissions then declined and started increasing again at the beginning of the second wave, first in the Eastern Cape in week 46, followed by the Western Cape in week 48 then Kwa-Zulu Natal and Gauteng in week 49. Between week 53 in 2020 and week 10 of 2021 HCW admissions declined across provinces.

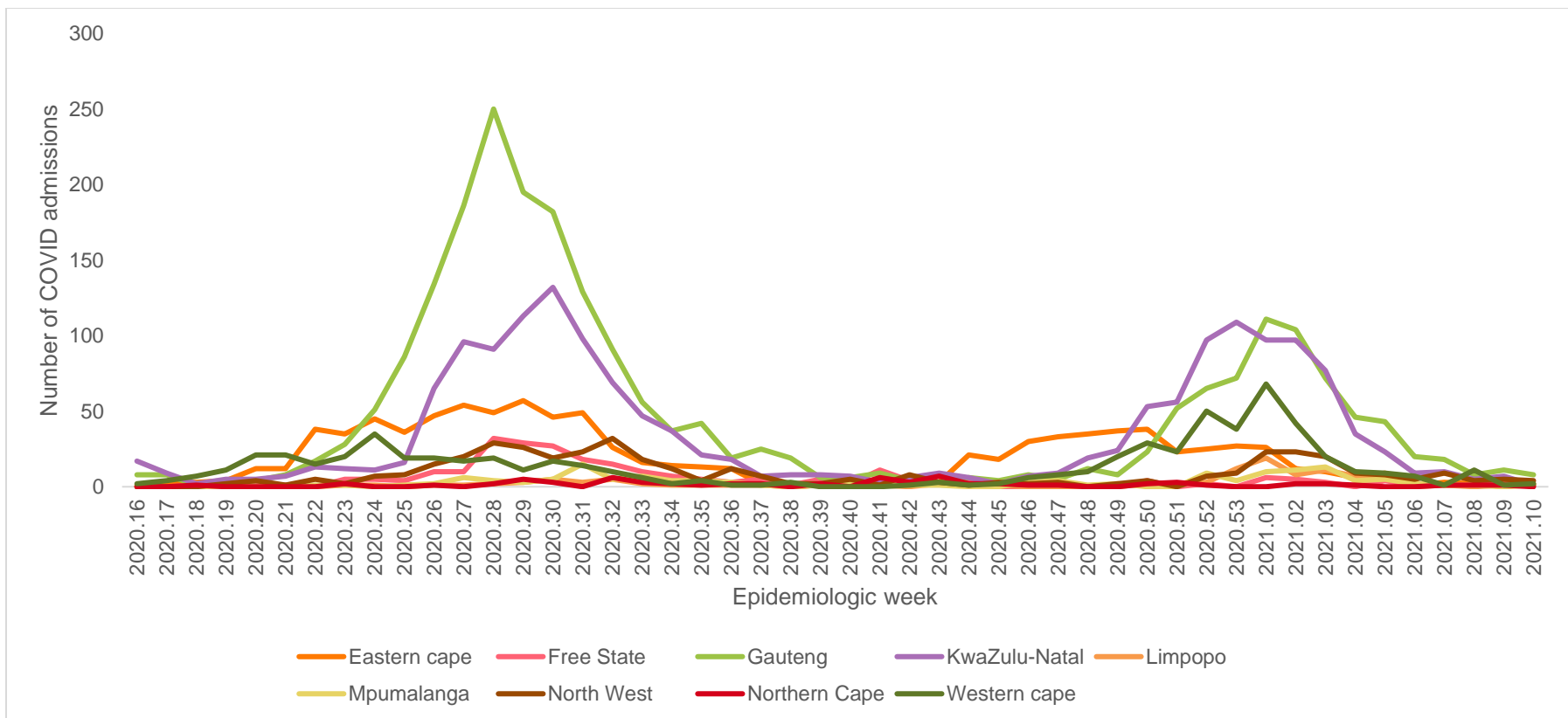


Figure 3: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and provinces, South Africa, 5 March 2020 –13 March 2021 (n=6758)

# Demographic and clinical characteristics of HCWs admitted with COVID-19, South Africa, 5 March 2020 –13 March 2021

The median age of COVID-19 admissions among HCWs was 49 years (interquartile range [IQR] 39–57). There were 1238 (18.3%) admissions in HCW 60 years and older (Figure 4). Among admitted HCWs with COVID-19, 4739 (70.2%) were female. The sex ratio varied by age group with females more common than males in all age groups (Figure 4). Among the 4739 female admissions, 120 (2.5%) were pregnant.

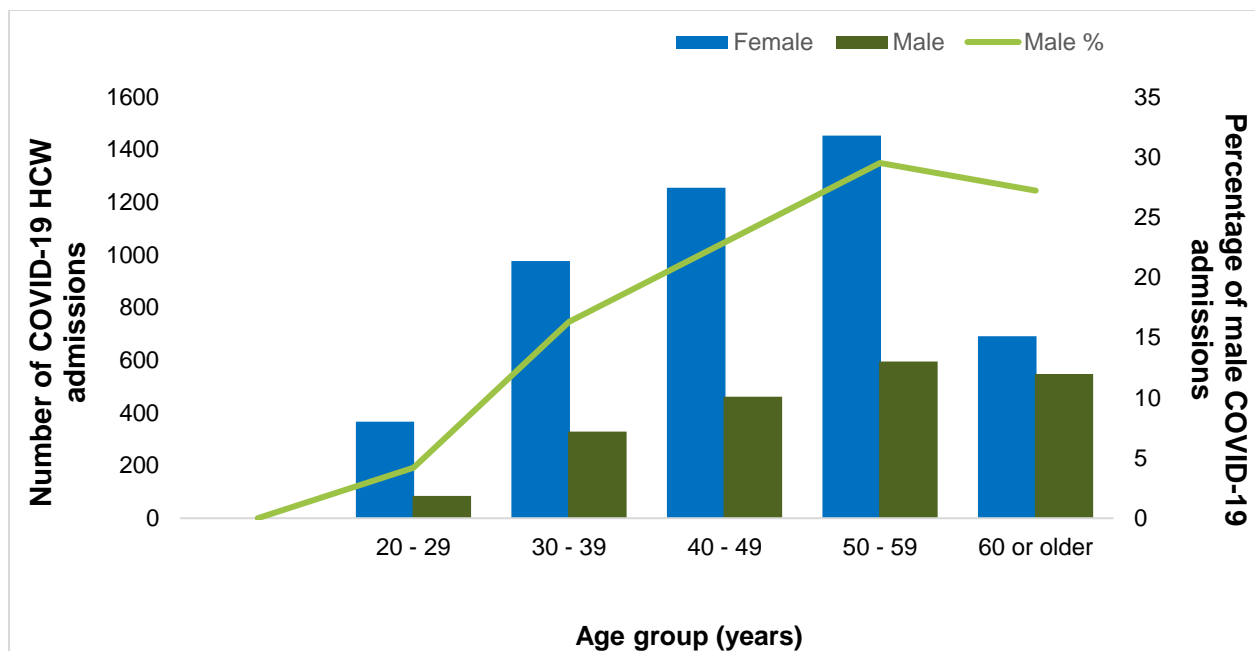


Figure 4: Number of reported HCW admitted with COVID-19 by age, gender and percentage of males, South Africa, 5 March 2020 – 13 March 2021 (n=6758)

The prevalence of comorbid diseases among HCW was 3046/5696 (53.5%). Among the 5696 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (1998/5696; 35.1%) and diabetes (1301/5696; 22.8%). There were 5.4 % (310/5696) of HCWs that were HIV positive, 5.6% (320/5696) were obese, 0.8% (46/5696) had active tuberculosis (TB) and 0.9% (49/5696) reported a previous history of TB (Table 2).

**Table 2: The number and prevalence of comorbid diseases in HCW admitted with COVID-19, South Africa, 5 March 2020 – 13 March 2021 (n=5696)**

Comorbid disease*	Frequency (n)	Percentage (%)
Hypertension	1998	35.1
Diabetes mellitus	1301	22.8
Chronic cardiac disease	111	1.9
Chronic pulmonary disease/Asthma	374	6.6
Chronic renal disease	31	0.5
Malignancy	28	0.5
HIV	310	5.4
Active tuberculosis	46	0.8
Previous history of tuberculosis	49	0.9
Obesity	320	5.6

\* 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

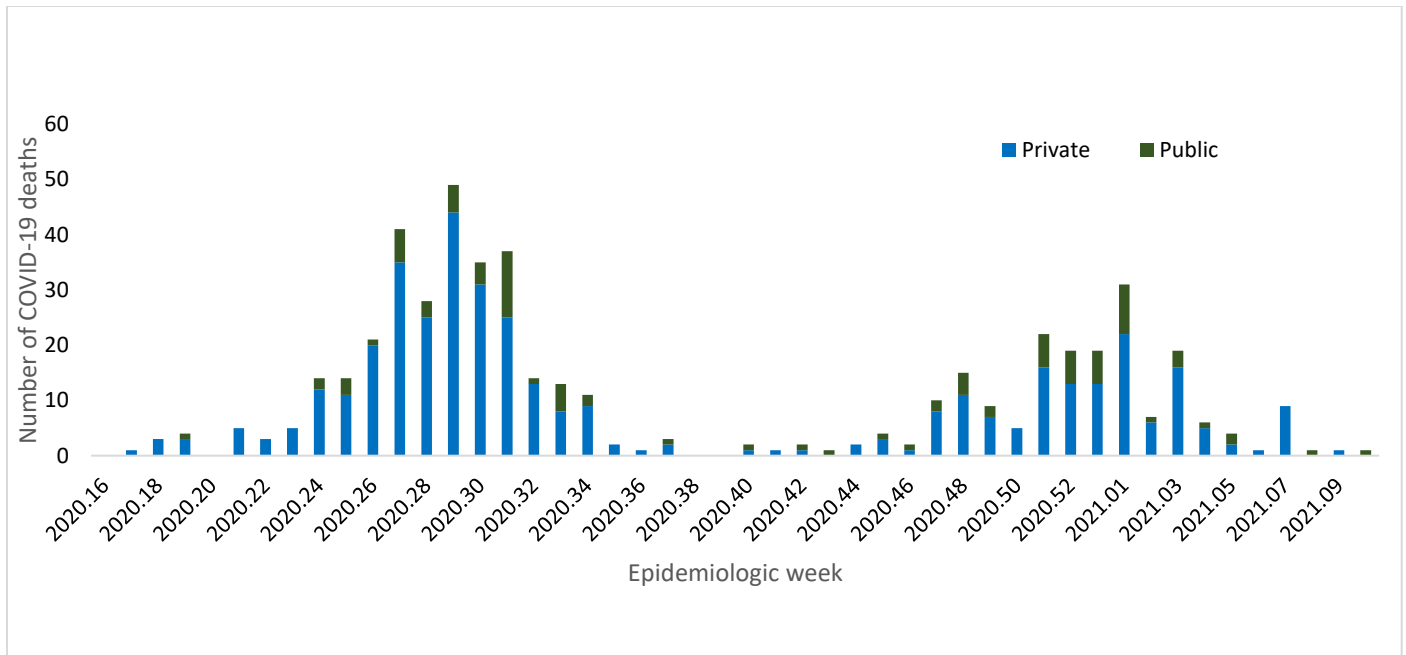
A total of 1114 (16.5%) HCW admissions were ever treated in ICU, of these 694 (62.3%) were treated with oxygen, 389 (34.9%) were treated on ventilation and 830 (74.5%) received both treatments. The mean age of patients who received oxygen or ventilation as an intervention (51.6 years) was significantly older than those who did not receive oxygen or ventilation intervention (46.1 years) ( $p < 0.0001$ ).

Of the all HCW admissions treated with oxygen or ventilation, 713/2738 (26.0%) had more than one comorbid disease ( $p < 0.001$ ).



## Outcomes

Of the 6758 HCW admissions, 5834 (86.3%) were discharged alive, 96 (1.4%) transferred out to either higher level care or step-down facilities, 753 (11.1%) HCWs had died and 75 (1.1%) were currently in hospital. The case fatality ratio (CFR) of HCWs with known in-hospital outcome reported to DATCOV was (753/6587, 11.4%) compared to a CFR of (49016/207247; 23.7%) among non-HCW admissions ( $p < 0.001$ ) (Figure 5).



**Figure 5. Number of reported COVID-19 deaths among admitted HCW by epidemiologic week in private and public sector, South Africa, 5 March – 13 March 2021.**

Please note that the mortality data presented was based on available information from sentinel hospitals as of 13 March 2021, 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 HCWs admitted with COVID-19, were reported in Kwa-Zulu Natal (211, 28.0%), followed by the Gauteng 193 (25.6%) and 172 (22.8%) from Eastern Cape provinces. Three hundred and twenty-nine (43.7%) of the deaths were recorded among HCWs aged 60 years and older. The median age of those who died was 58 (IQR 50 – 64) years compared to 47 (IQR 38 – 56) years for those who were still alive. Four hundred and forty-four (58.9%) of the deceased were admitted in ICU, 234 (31.1%) were ventilated, and 477 (63.35%) were given supplemental oxygen. The median

length of stay for the HCWs who died was 10 days [IQR 4 – 18] compared to 6 days [3 – 10] for those discharged alive. Of the HCWs who died, 504(69.4%) had comorbid disease reported and 270 (37.3%) had more than one reported comorbidity. Hypertension 389 (54.9%), diabetes 281 (40.2%) and obesity 57 (23.2%) were the common reported comorbid diseases among the deceased.

### **Comparison of COVID-19 admissions and deaths among HCWs in the first and second wave**

There were 3739 (55.3%) and 3019 (44.7%) HCW admissions in the first and second wave, respectively. Comparison of the proportion of admissions in the first and second wave indicated a significant difference in admissions ( $P < 0.0001$ ). A total of 423 (43.8%) HCWs died in the second wave compared to the 330 (56.2%) in the first wave. The proportion of deaths in the second wave was significantly higher than that of the first wave ( $p=0.0008$ ). The CFR of HCWs was lower in the first wave (9.0%) than in the second wave (14.5%). CFR for Non-HCWs was 20.9% in the first wave, and 25.3% in the second wave.

## **Conclusions**

The number of HCW admissions started increasing in the second wave of COVID-19 infections around week 45 of 2020 and declined from week 2 of 2021. By province, Gauteng, KwaZulu-Natal, Eastern Cape and the Western Cape had a higher number of HCW admissions from week 46-49. While the numbers of admissions were lower in the second wave, the number of deaths and the CFR of HCWs was higher in the second wave than in the first wave. A higher proportion of deaths was observed among healthcare workers with comorbid medical conditions than among those without comorbid conditions.

## **Acknowledgements**

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