

# COVID-19 Sentinel Hospital Surveillance Weekly Update on Hospitalized HCWs

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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 10 October 2020 on the DATCOV platform.

# HIGHLIGHTS

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- As of 10 October 2020, 3927 (4.5%) of the 87 748 COVID-19 hospital admissions recorded on the DATCOV surveillance database, were health care workers (HCWs), reported from 301 facilities in all nine provinces of South Africa. Among 1112/3927 (28.3%) HCWs with available data on type of work, 690/1112 (62.1%) were nurses, 172/1112 (15.5%) porters or administrators, 114/1112 (10.2%) allied HCWs, 76/1112 (6.8%) doctors, 22/1112 (1.9%) paramedics, and 9/1112 (0.8%) laboratory scientists.
  - There was an increase of 48 new HCW admissions since week 39.
  - There were 1526 (38.9%) and 2401 (61.1%) admissions reported in the public and private sector, respectively.
  - The majority of HCW admissions were reported in Gauteng (1630, 41.5%), KwaZulu-Natal (869, 22.1%), Eastern Cape (578, 14.7%) and Western Cape (288, 7.3%).
  - The median age of COVID-19 HCW admissions was 47 years, there were 558 (14.2%) admissions in HCWs aged 60 years and older. Among admitted HCWs with COVID-19, 2908 (74.1 %) were female.
  - Of the 2967 (75.5%) HCWs for whom comorbid disease was known, 1220/2967 (41.1%) had at least one comorbid disease and 425/1220 (34.8%) had more than one comorbidity reported. Among the 1220 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (765/1220; 66.0%) and diabetes (501/1220; 42.0%). There were 200 (14%) HCWs who were HIV positive, 22 (1.8%) with active tuberculosis (TB) and eight (0.7%) with a previous history of TB.
  - A total of 461 (11.7%) HCW admissions were in ICU, of these 155 (33.6%) were treated with oxygen, 100 (21.7%) were treated on ventilation and 55 (11.9%) received both treatment. The remainder 151 (32.8%) did not receive oxygen or ventilation support.
  - Of the 3927 HCW admissions, 270 (6.8%) were in hospital at the time of this report, 3292 (83.8%) were discharged alive, 51 (1.3%) transferred out and 314 (8.0%) HCWs had died. 93 of the 314 deaths (29.6%) were reported in the Eastern Cape, 79 (25.1%) from KwaZulu-Natal, and 76 (24.2%) from Gauteng. Of those who died, 201 (67.9%) had at least one comorbid disease reported and 95(32.1%) had more than one reported comorbidity.
  - The case fatality ratio among HCWs with known in-hospital outcome was 7.4%.
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# Methods

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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 hospitals nationally, in all nine provinces. As new hospitals join the surveillance system, they retrospectively captured all admissions recorded. As of 10 October 2020, a total of 584 facilities submitted data on hospitalized COVID-19 cases, 340 from public sector and 244 from private sector (Table1). This reflects 96% and 100% coverage of all public and private hospitals respectively that have had COVID-19 admissions. Data on hospitalized HCWs who were diagnosed with COVID-19 from 5 March to 10 October 2020 were collected from 301 hospitals (132 are public, and 169 private hospitals) of the 584 participating sentinel hospitals.

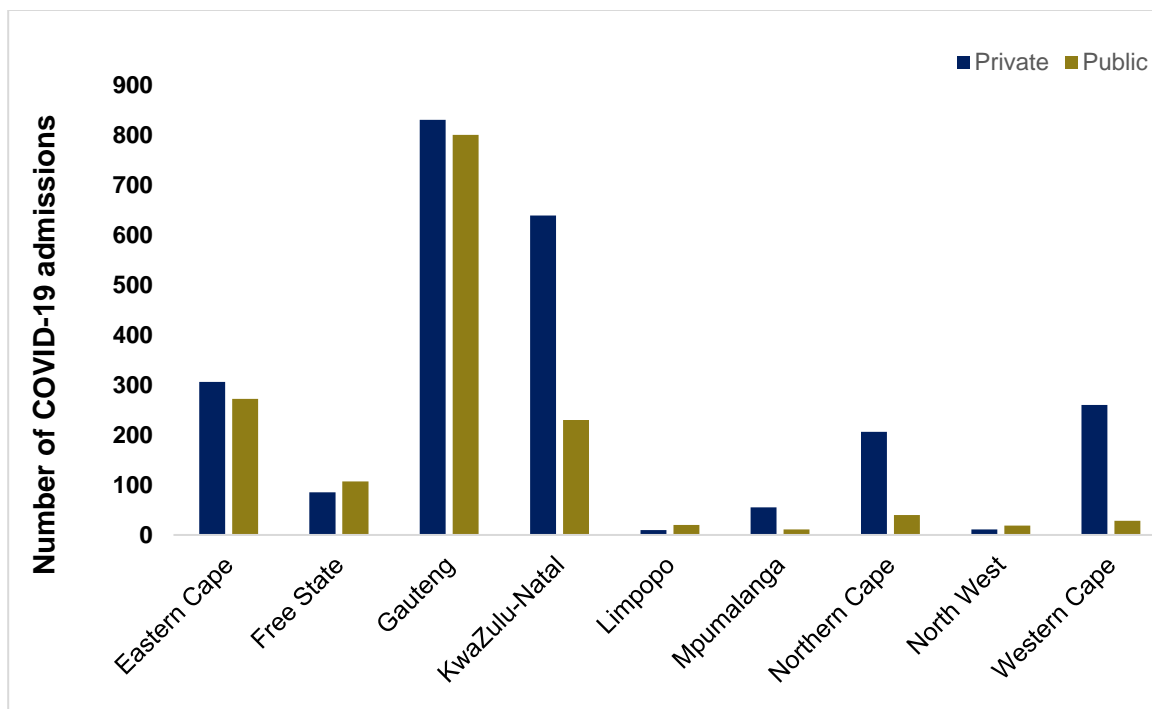
**Table 1:** Number of hospitals reporting data on COVID-19 admissions by province and health-sector, South Africa, 5 March – 10 October 2020

Provinces	Public	Private
Eastern Cape	81	17
Free State	33	20
Gauteng	38	88
KwaZulu-Natal	58	45
Limpopo	32	6
Mpumalanga	24	9
North West	9	12
Northern Cape	9	77
Western Cape	56	40
South Africa	340	244

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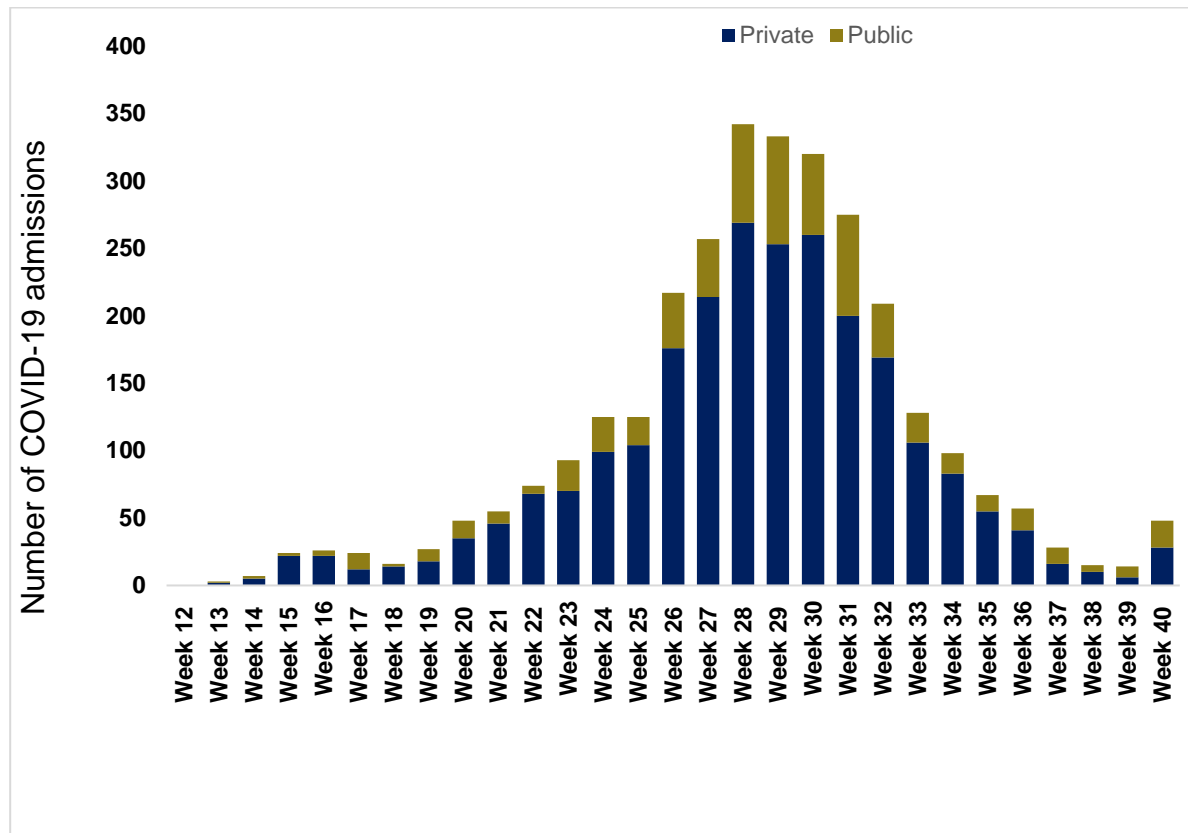
# Results

From 5 March to 10 October 2020, there was a total of 3927/87 748 (4.5%) COVID-19 admissions among HCWs (48 additional admissions from the last report) reported from 301 facilities in all nine provinces of South Africa. Of these admissions, 1526 (38.9%) and 2401 (61.1%) were reported in the public and private sector, respectively (Figure 1). The majority of HCW admissions (3365/3927; 85.6%) were recorded in four provinces, with the highest number 1630/3927 (41.5%) reported in Gauteng, followed by 869/3927 (22.1) in KwaZulu-Natal, 578/3927 (14.7%) in Eastern Cape and 288/3927 (7.3%) 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 –10 October 2020 (n=3927)

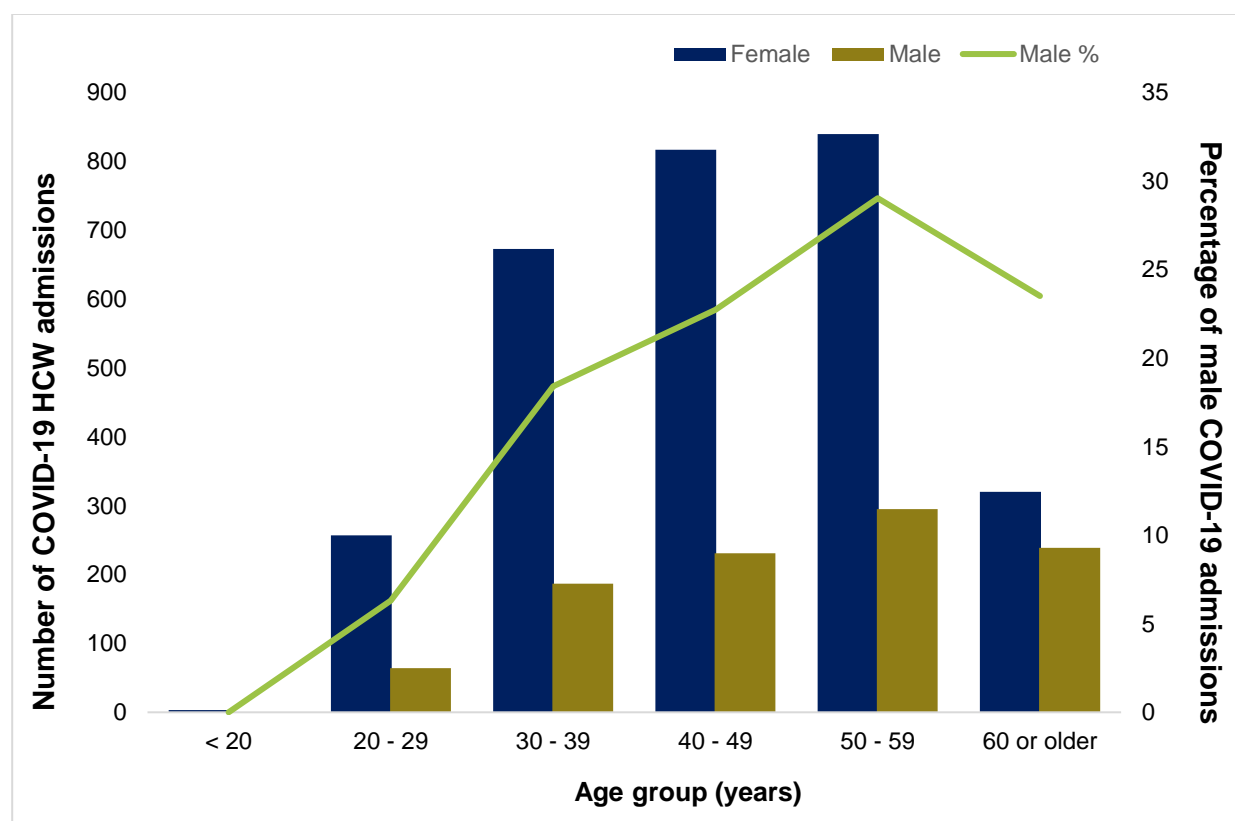
The majority of HCW admissions continue to be reported in the private sector (61.1%) (Figure 2). The overall number of admissions has been decreasing since week 30, however in week 40 there has been an increase from 21 admissions in week 39 to 48 admissions in week 40. Thirteen of the admissions in week 40 were from Gauteng, ten were from Kwa-Zulu Natal and seven from the Eastern Cape.



**Figure 2:** Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and health-sector, South Africa, 5 March– 10 October 2020 (n=3927)

# Demographic and clinical characteristics of COVID-19 admissions among HCWs, South Africa, 5 March– 10 October 2020

There were four HCWs whose age was unknown at the time of this report’s dissemination. The median age of COVID-19 admissions among HCWs was 47 years (interquartile range [IQR] 37–56). There were 558 (14.2%) admissions in patients 60 years and older (Figure 3). Among admitted HCWs with COVID-19, 2908 (74.1%) were female. The sex ratio varied by age group with females more common than males in all age groups (Figure 3). Among the 2908 female admissions, 51 (1.8%) were pregnant.



**Figure 3:** Number of reported COVID-19 HCW admissions by age, gender and percentage of males, South Africa, 5 March– 10 October 2020 (n=3927)

Of the 2967 (75.5%) HCWs for whom comorbid disease was known, 1220/2967 (41.1%) had at least one comorbid disease and 425/1220 (34.8%) had more than one comorbidity reported. Among the 1220 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (765/1220; 66.0%) and diabetes (501/1220; 42.0%). There were 200 (14%) HCWs who were HIV positive, 22 (1.8%) with active tuberculosis (TB) and eight (0.7%) with a previous history of TB (Table 2).

**Table 2:** Reported comorbid diseases in COVID-19 admissions among HCWs reporting at least one comorbid disease, South Africa, 5 March– 10 October 2020 (n=1220)

Comorbid disease*	Frequency (n)	Percentage (%)
Hypertension	765	62.7
Diabetes mellitus	501	41.0
Chronic cardiac disease	44	3.6
Chronic pulmonary disease/Asthma	163	13.4
Chronic renal disease	9	0.7
Malignancy	15	1.2
HIV	201	16.5
Active tuberculosis	22	1.8
Previous history of tuberculosis	8	0.7

\* 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 461 (11.7%) HCW admissions were in ICU, of these 155 (33.6%) were treated with oxygen, 100 (21.7%) were treated on ventilation and 55 (11.9%) 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 have severe disease (45 years) ( $p = <0.0001$ ). Of the HCW admissions treated with oxygen or ventilation, 224 (20.1%) had at least one comorbid disease ( $p <0.001$ ).

## Outcomes

Of the 3927 HCW admissions, 3292 (83.8%) were discharged alive, 51 (1.3%) transferred out to either higher level care or step-down facilities, 314 (8.0%) HCWs had died and 272 (6.92 %) were currently in hospital. The case fatality ratio (CFR) of 7.4% among HCWs with known in-hospital outcome was lower than the CFR among non-HCW admissions reported to DATCOV (14.1%). Only 1 death was recorded in week 40 (Figure 4)

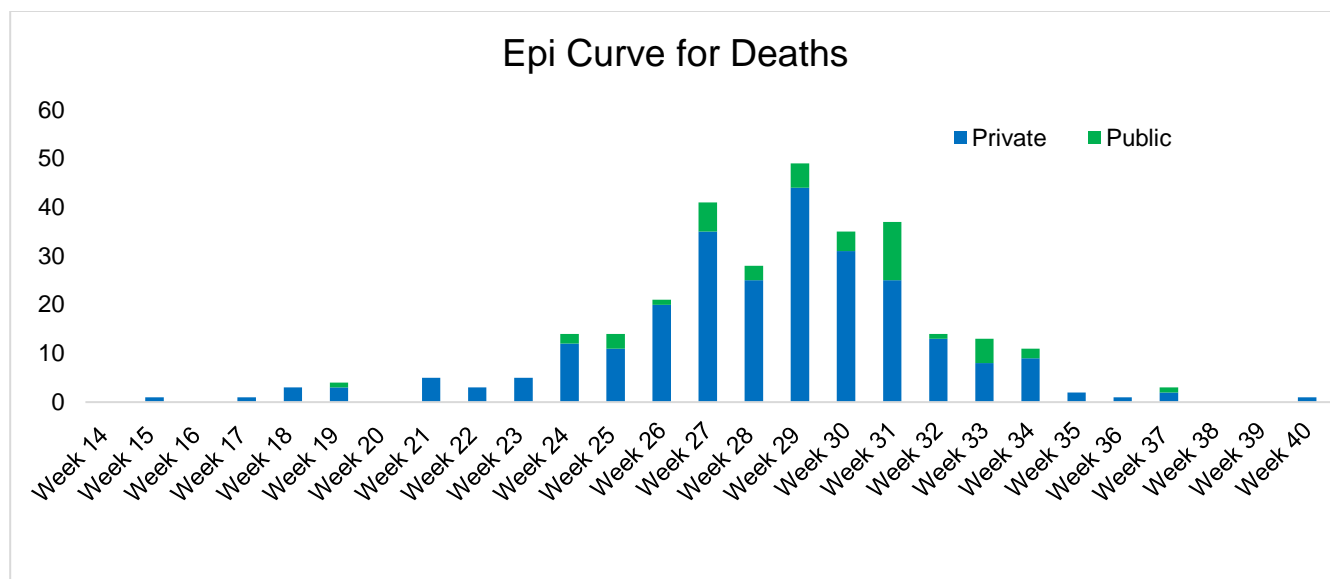


Figure 4. Number of reported COVID-19 deaths among HCW by epidemiology week in private and public sector, South Africa, 5 March– 10 October 2020.

The majority of HCW deaths, 93 (29.6%), were reported in the Eastern Cape, followed by 79 (25.2%) from KwaZulu-Natal and 76 (24.2%) from Gauteng provinces. One hundred and twenty-nine (129, 41.1%) 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. Hundred and twenty-five, 125 (39.8 %) of the deceased were admitted in ICU, 108 (34.4 %) were ventilated, and 150 (47.8 %) 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 – 11] for those discharged alive. Of the HCW who died, 201 (67.9%) had at least one comorbid disease reported and 100 (32.1%) had more than one reported comorbidity. Hypertension (145/296; 49.0%) and diabetes (115/296; 38.9%) were the common reported comorbid diseases.

Please note that the mortality data presented was based on available information from sentinel hospitals as of 10 October 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.



# Conclusion

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Admissions among HCW are declining in keeping with the national trend. We continue to observe a high percentage of deaths amongst HCWs older than 60 years of age. Healthcare workers with comorbid medical conditions also have a higher proportion of deaths.

# Acknowledgements

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All public and private sector hospitals submitting data to DATCOV

Private hospital groups submitting data to DATCOV:

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