

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 21 June 2020 on the DATCOV platform.

HIGHLIGHTS

- As of June 21, 2020, 284 (2.7%) of the 10700 COVID-19 hospital admissions, were health care workers (HCWs), reported from 269 facilities (71 public-sector and 198 private-sector) in all nine provinces of South Africa. Among these were 8 (2.8%) allied HCWs, 38 (13.4%) nurses, and 26 (9.2%) porters. However, 74.6% (212) did not report on the HCW type. There was an increase of 46 new HCW admissions since week 24.
- There were 221 (77.8%) and 63 (22.2%) admissions reported in private and public sector, respectively. The majority of HCW admissions were reported from Western Cape (87; 30.6%), Gauteng (74; 26.1%), KwaZulu-Natal (67; 23.6%), and the Eastern Cape (27; 9.5%) provinces.
- The median age of COVID-19 HCW admissions was 44 years, there were 25 (8.8%) admissions in HCWs aged 60 years and older. A total of 231 (81.3%) were female.
- Among 260 (91.5%) patients with data on comorbid conditions, 103/260 (39.6%) had at least one comorbid condition reported. Most commonly reported comorbid conditions were hypertension (57/103; 55.3%) and diabetes (37/103; 35.9%). There were 19 (18.4%) patients admitted with HIV and two (1.9%) with active tuberculosis and another two (1.9%) with a previous history of tuberculosis.
- A total of 20 (7.0%) patients had severe disease defined as receiving treatment in high care or intensive care unit (ICU) or ventilated or diagnosed with acute respiratory distress syndrome (ARDS).
- Of the 284 HCW admissions, 89 (31.3%) were in hospital at the time of this report, 183 (64.4%) were discharged alive, four (1.4%) transferred out and eight (2.8%) patients had died. Five of the eight deaths (62.5%) were reported in the Western Cape, two (25.0%) from Gauteng and one (12.5%) from KwaZulu-Natal provinces. There was one additional death since the last reporting week, which occurred in week 21.

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 hospitalized HCWs who were diagnosed with COVID-19 from 5 March to 21 June 2020 were collected. Data are received from all private hospitals nationally, and a subset of public hospitals in all nine provinces (data are received from all public hospitals in the Western Cape (WC) Province). As new hospitals join the surveillance system, they retrospectively captured all admissions recorded. As of 21 June 2020, a total of 269 facilities, 198 from private sector and 71 from public sector, submitted data on hospitalized HCWs with COVID-19 (Table 1). There were 12 additional hospitals (4 public-sector and 8 private-sector) 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 June 2020

Province	Sector	
	Public	Private
Eastern Cape (EC)	6	12
Free State (FS)	3	12
Gauteng (GP)	5	73
KwaZulu-Natal (KZN)	5	36
Limpopo (LP)	1	6
North West (NW)	2	12
Northern Cape (NC)	1	5
Western Cape (WC)	48	36
Mpumalanga (MP)	0	6
South Africa	71	198

Results

From 5 March to 21 June, there was a total of 284/10700 (2.7%) COVID-19 admissions among HCWs (46 additional from the last report) were reported from 269 facilities in all nine provinces of South Africa. Of these admissions, 221 (77.8%) and 63 (22.2%) were reported in the private and public sector, respectively (Figure 1). The majority of HCW admissions (255/284; 89.8%) were recorded in four provinces, with the highest number 87/284 (30.6%) reported in Western Cape (WC), followed by 74/284 (26.1%) in Gauteng (GP), 67/284 (23.6%) in KwaZulu-Natal (KZN), and 27/284 (9.5%) in Eastern Cape (EC) provinces (Figure 1).

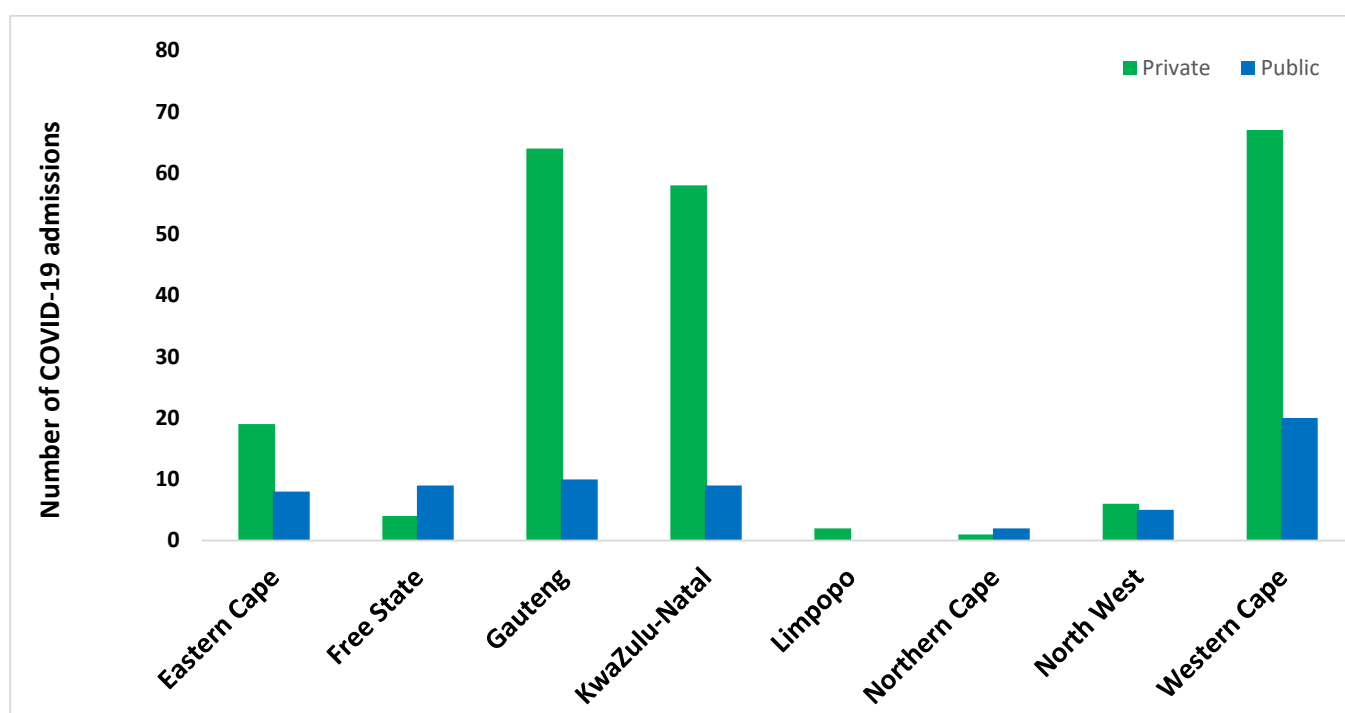


Figure 1: Number of reported COVID-19 admissions among HCWs by province and health-sector, South Africa, 5 March - 21 June 2020 (n=284)

The majority of HCW admissions were reported in the private sector (77.8%). However, increasing number of admissions have also been reported in the public sector (Figure 2).

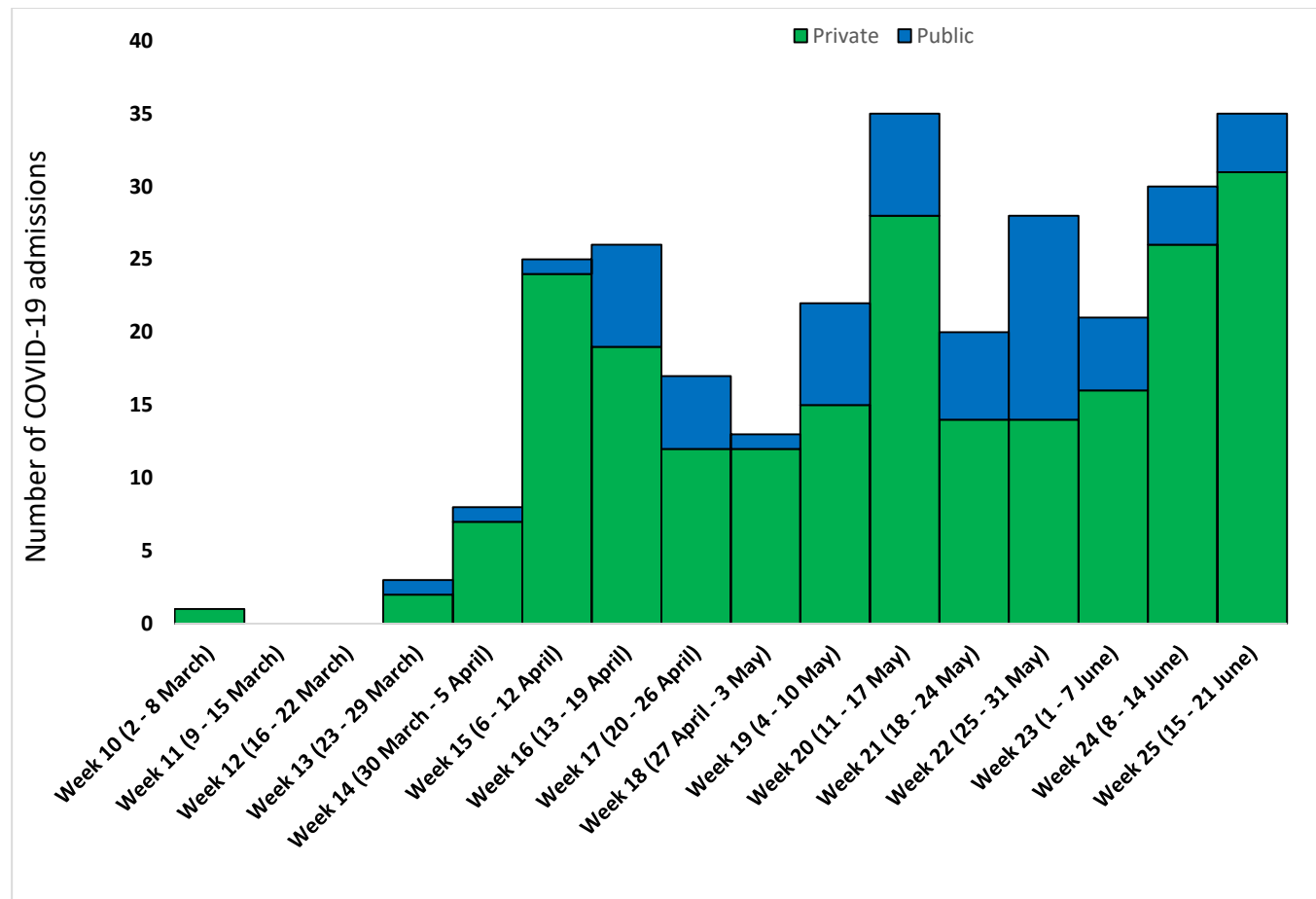


Figure 2: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and health-sector, South Africa, 5 March– 21 June 2020 (n=284)

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

The median age of COVID-19 admissions among HCWs was 44 years (interquartile range [IQR] 37–54). There were 25 (8.8%) admissions in patients 60 years and older (Figure 3). Among admitted HCWs with COVID-19, 231 (81.3%) were female. The sex ratio varied by age group with females more common than males in all age groups (Figure 3). Among the 231 female admissions, 10 (3.5%) were pregnant.

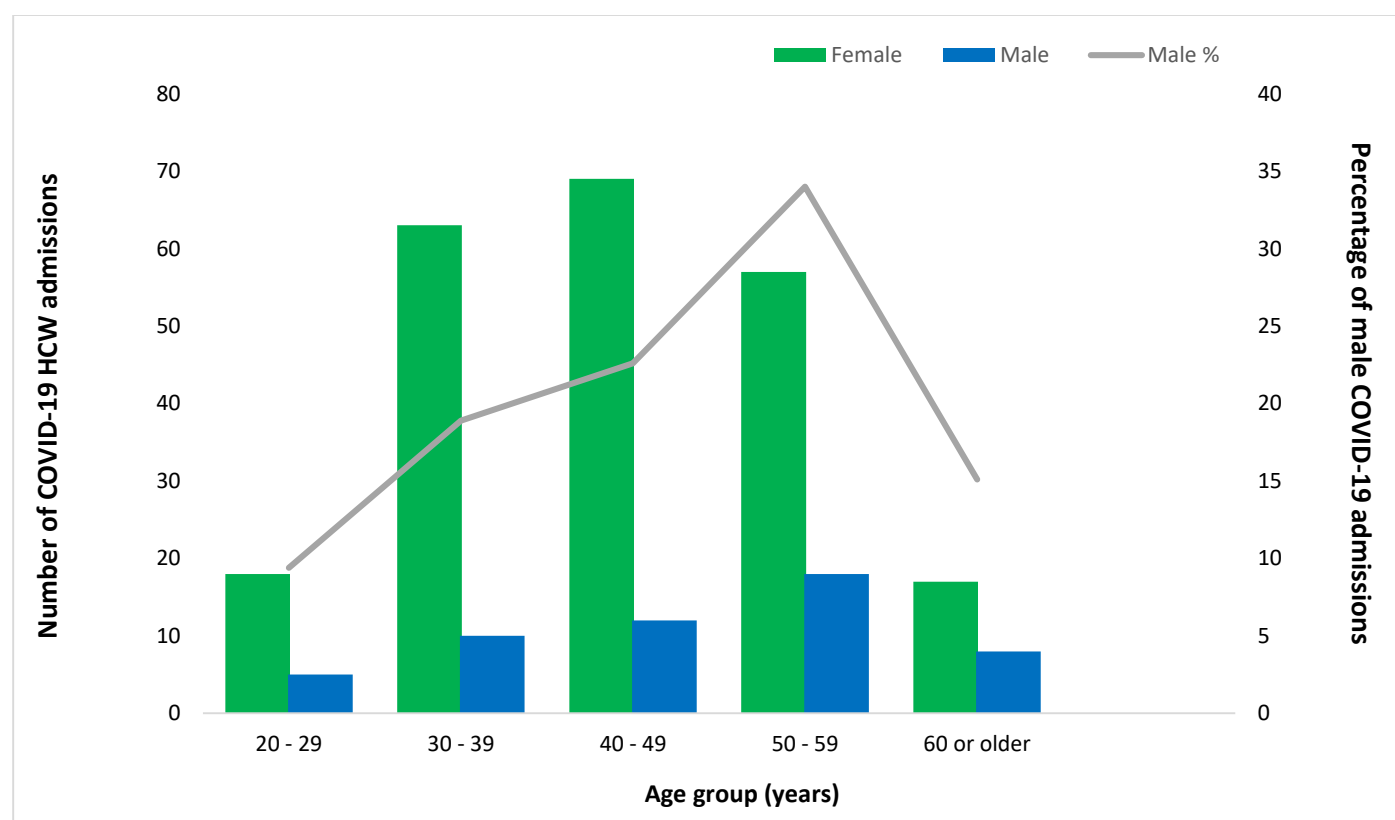


Figure 3: Number of reported COVID-19 HCW admissions by age, gender and percentage of males, South Africa, 5 March– 21 June 2020 (n=284)

Note: There were 7 HCWs whose age was unknown at the time of this report's dissemination.

Of the 260 (91.5%) HCWs for whom comorbid disease was known, 103/260 (39.6%) had one or more comorbid disease reported. Among the 103 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (57/103; 55.3%) and diabetes (37/103; 35.9%). There were 19 (18.4%) HCWs who were HIV positive, two (1.9%) with active tuberculosis (TB) and another two (1.9%) 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–21 June 2020 (n=103)

Comorbid disease*	Frequency (n)	Percentage (%)
Hypertension	57	55.3
Diabetes mellitus	37	35.9
Chronic cardiac disease	2	2
Chronic pulmonary disease	1	1
Asthma	21	20.4
Chronic renal disease	2	1.9
Malignancy	0	0.0
HIV	19	18.4
Active tuberculosis	2	1.9
Previous history of tuberculosis	2	1.9

* 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

Of the 284 COVID-19 HCW admissions to date, 20 (7.0%) met the criteria for severe disease. The mean age of patients who had severe disease (51 years) was significantly different from those who did not have severe disease ($p=0.0166$). Of the 20 with severe disease, 15 (75.0%) had at least one comorbid disease ($p=0.001$).

Outcomes

Of the 284 admitted individuals, 183 (64.4%) were discharged alive, four (1.4%) were transferred out to either higher level care or step-down facilities, eight (2.8%) had died and 89 (31.3%) were currently in hospital.

Mortality

Of the 284 COVID-19 admissions among HCWs, eight died (six women and 2 men). There were 1515 deaths for all admissions in the DATCOV database, with 5809 being discharged. The case fatality ratio is based on closed cases only: number of deaths divided by deaths plus discharges. The CFR for all admissions was 20.7% compared to 4.2% (8/191) in HCW. The majority of HCW deaths (62.5%) were reported in the Western Cape, two (25%) from Gauteng and one (12.5%) from KwaZulu-Natal provinces. Six deaths recorded were among HCWs aged 60 years and older with a median age of 64 (IQR 63 – 69) years compared to 44 (IQR 36 – 54) years for those who were still alive. Five (62.5%) of the eight deaths were admitted in ICU, five (62.5%) were ventilated and six (75%) were oxygenated. Seven of the eight (87.5%) HCWs that died had at least one comorbid disease reported. Hypertension (7/8; 87.5%) and diabetes (4/8; 42.9%) were the common reported comorbid diseases (Table 3).

Please note that the mortality data presented was based on available information as of 21 June 2020, thus not all deaths during the reporting period may have been recorded by the participating hospitals.

Table 3: Clinical profiles of the health care workers admitted with COVID-19 who died, South Africa, (n=8)

Case ID	Age	Sex	Comorbidities	Province	Week of death	LOS (days)	ICU Admission	On Oxygen	Ventilated
A	52	Female	• Hypertension	Western Cape	19	13	Yes	Yes	Yes
B	61	Female	• Hypertension • Diabetes	Western Cape	19	10	No	No	No
C	61	Female	• Hypertension	Western Cape	17	7	Yes	Yes	Yes
D	64	Female	None	KwaZulu-Natal	13	7	Yes	No	No
E	67	Female	• Hypertension • Diabetes • Asthma	Western Cape	18	21	No	Yes	No
F	57	Female	• Hypertension	Gauteng	24	2	Yes	Yes	Yes
G	64	Male	• Hypertension • Diabetes	Gauteng	22	11	No	Yes	Yes
H	69	Male	• Hypertension • Diabetes	Western Cape	21	27	Yes	Yes	Yes

Acknowledgements

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)

Western Cape province: all public sector hospitals submitting data to DATCOV

Public hospitals using DATCOV surveillance online platform:

- Dora Nginza Hospital (EC)
- Frere Hospital (EC)
- Livingstone Hospital (EC)
- Madwaleni Hospital (EC)
- Uitenhage Hospital (EC)
- Stutterheim Hospital (EC)
- Bedford Hospital (EC)
- Cradock Hospital (EC)
- Pelonomi Hospital (FS)
- National District Hospital (FS)
- Universitas Hospital (FS)
- Tambo Memorial Hospital (GP)
- Steve Biko Academic Hospital (GP)
- Charlotte Maxeke Johannesburg Academic Hospital (GP)
- Helen Joseph Hospital (GP)
- Leratong Hospital (GP)
- Greys Hospital (KZN)
- Ladysmith Hospital (KZN)
- Manguzi Hospital (KZN)
- Addington Hospital (KZN)
- General Justice Gizenga Mpanza Hospital (KZN)
- Polokwane Hospital (LP)
- Robert Mangaliso Sobukwe Hospital (NC)
- Tshepong Hospital (NW)
- Job Shimankana Thabane Hospital (NW)
- Tygerberg Hospital (WC)