

COVID-19

Sentinel Hospital Surveillance

Weekly Update on Hospitalized HCWs

Update: Week 4, 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 to 30 January 2021 on the DATCOV platform.

HIGHLIGHTS

- As of 30 January 2021, 6466 (3.3%) of the 197776 COVID-19 hospital admissions recorded on the DATCOV surveillance database, were health care workers (HCWs), reported from 641 facilities in all nine provinces of South Africa. Among 1973/6466 (30.5%) HCWs with available data on type of work, 1226/1973 (62.1%) were nurses, 363/1973(18.4%) porters or administrators, 174/1973 (8.8%) allied HCWs, 138/1973 (6.9%) doctors, 50/1973 (2.5%) paramedics, and 22/1973 (1.1%) laboratory scientists.
 - There was an increase of 422 new HCW admissions since week 2 of 2021
 - There were 2258 (34.9%) and 4208 (65.1%) admissions reported in the public and private sector, respectively.
 - The majority of HCW admissions (5538/6466; 85.6%) were recorded in four provinces, with the highest number 2125/6466 (32.9%) reported in Gauteng, followed by 1678/6466(25.9%) in KwaZulu-Natal, 957/6466 (14.8%) in Eastern Cape and 778/6466(12.0%) in Western Cape provinces.
 - The median age of COVID-19 admissions among HCWs was 49 years (interquartile range [IQR] 39–57). There were 1154 (17.8%) admissions in HCW 60 years and older. Among admitted HCWs with COVID-19, 4531 (70.1%) were female.
 - The prevalence of comorbid diseases among HCW was 2688/5061 (53.1%). Among the 5061 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (1821/5061; 36.0%) and diabetes (1197/5061; 23.7%). There were 5.7 % (288/5061) of HCWs that were HIV positive, 5.8% (296/5061) were obese, 0.8% (40/5061) had active tuberculosis (TB) and 0.9 (46/5061) reported a previous history of TB.
 - A total of 1042 (16.1%) HCW admissions were ever treated in ICU, of these 418 (40.1%) were treated with oxygen, 352 (33.8%) were treated on ventilation and 310 (42.6%) received both treatments. Of the 6466 HCW admissions, 5467 (84.6%) were discharged alive, 88 (1.4%) transferred out to either higher level care or step-down facilities, 656 (10.2%) HCWs had died and 255 (3.9%) were currently in hospital. The majority of deaths among HCW admitted with COVID-19, were reported in Kwa-Zulu Natal (176, 26.8%), followed by the Eastern Cape 170 (25.9%) and 155 (23.6%) from Gauteng provinces. Of the HCWs who died, 433 (69.3%) had comorbid disease reported and 223 (35.7%) had more than one reported comorbidity.
 - Among HCWs with known in-hospital outcome the case fatality ratio was 10.7% (656/6123).
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Methods

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 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 30 January 2021, a total of 641 facilities, 381 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 – 30 January 2021

Provinces	Public	Private
Eastern Cape	85	18
Free State	36	20
Gauteng	39	91
KwaZulu-Natal	66	45
Limpopo	41	7
Mpumalanga	31	9
North West	16	12
Northern Cape	8	17
Western Cape	59	41
South Africa	381	260

Results

From 5 March 2020 to 30 January 2021, there was a total of 6466/197776 (3.3%) COVID-19 admissions among HCWs. Of these admissions, 2258 (34.9%) and 4208 (65.1%) were reported in the public and private sector, respectively (Figure 1). The majority of HCW admissions (5538/6466; 85.6%) were recorded in four provinces, with the highest number 2125/6466 (32.9%) reported in Gauteng, followed by 1678/6466(25.9%) in KwaZulu-Natal, 957/6466 (14.8%) in Eastern Cape and 778/6466 (12.0%) in Western Cape provinces (Figure 1).

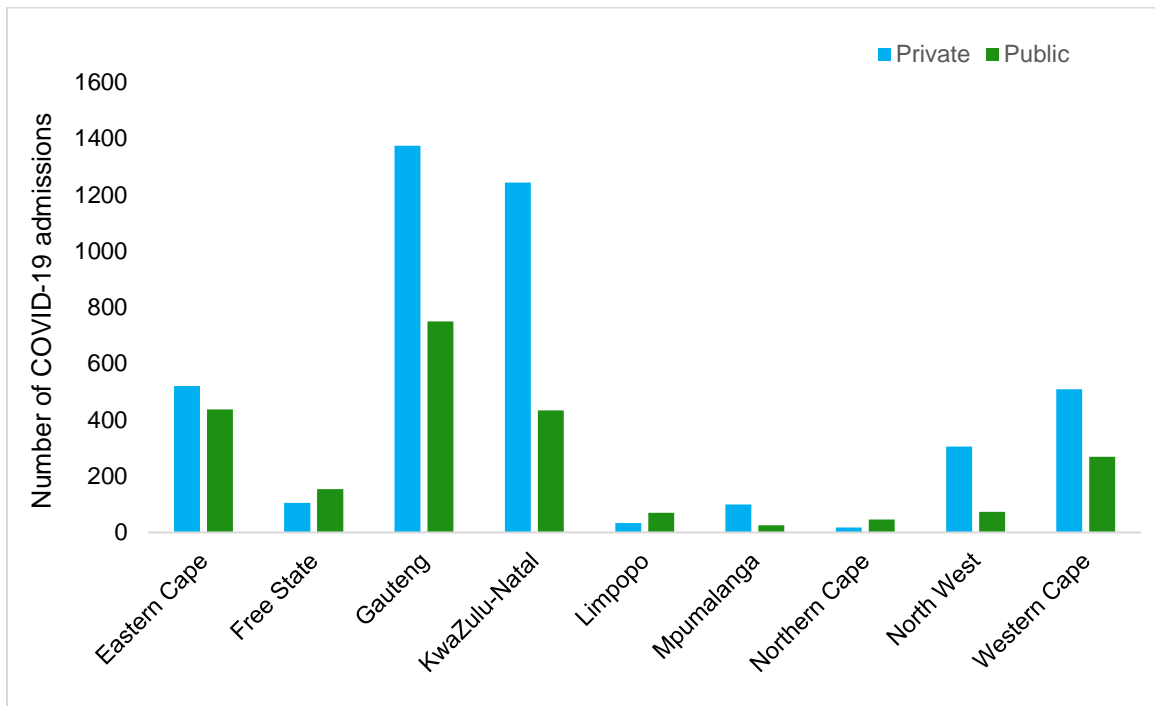


Figure 1: Number of reported COVID-19 admissions among HCWs by province and health-sector, South Africa, 5 March – 30 January 2021 (n=6466)

The overall number of admissions has been decreasing since week 28. Weekly numbers of admissions started increasing around week 45, when the second wave of the epidemic started nationally. The number of admissions increased in week 1 of 2021, steadily declining in week 2 to week 4 of 2021. (Figure 2).

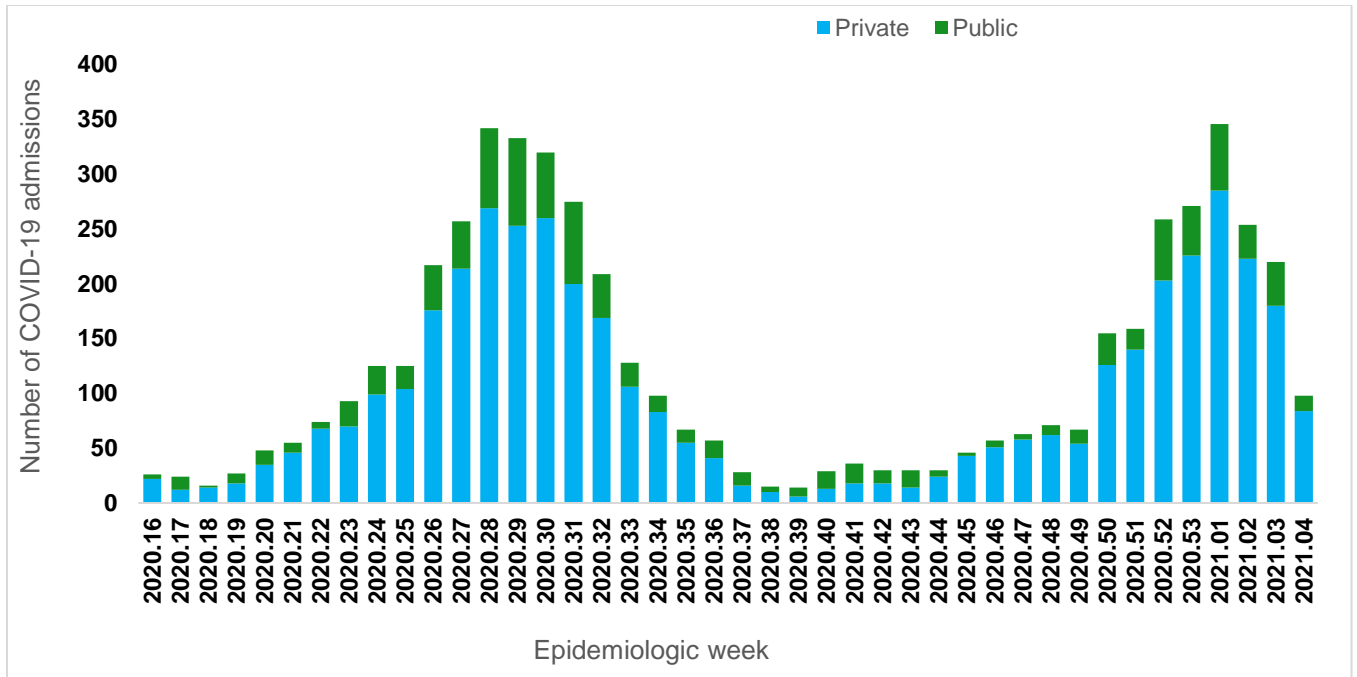


Figure 2: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and health-sector, South Africa, 5 March– 30 January 2021 (n=6466)

In the first wave of COVID-19 infections, the number of HCW admissions peaked during weeks 28 -30 in Gauteng and KwaZulu- Natal (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 2 of 2021 HCW admissions declined across provinces, increased again in week 3 of 2021 and declined in week 4 of 2021.

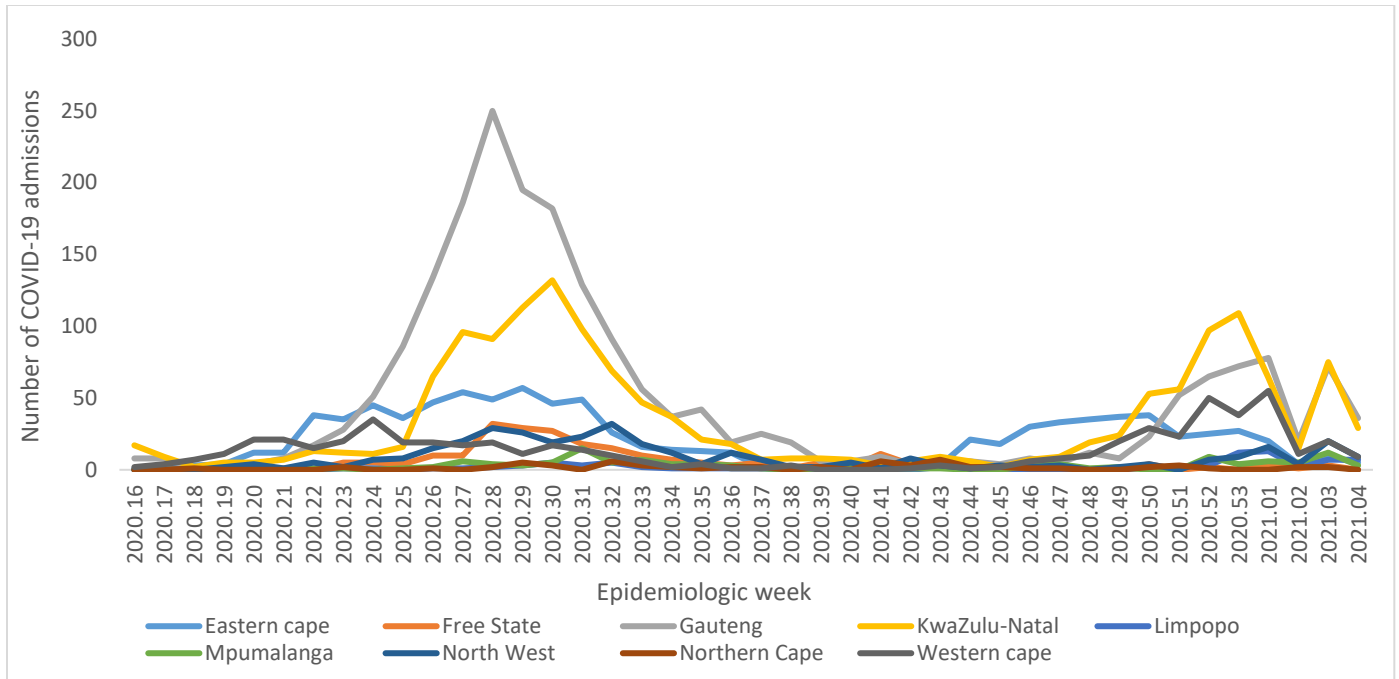


Figure 3: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and provinces, South Africa, 5 March– 30 January 2021 (n=6466)

Demographic and clinical characteristics of HCWs admitted with COVID-19, South Africa, 5 March–30 January 2021

The median age of COVID-19 admissions among HCWs was 49 years (interquartile range [IQR] 39–57). There were 1154 (17.8%) admissions in HCW 60 years and older (Figure 4). Among admitted HCWs with COVID-19, 4531 (70.1%) were female. The sex ratio varied by age group with females more common than males in all age groups (Figure 4). Among the 4531 female admissions, 109 (2.4%) were pregnant.

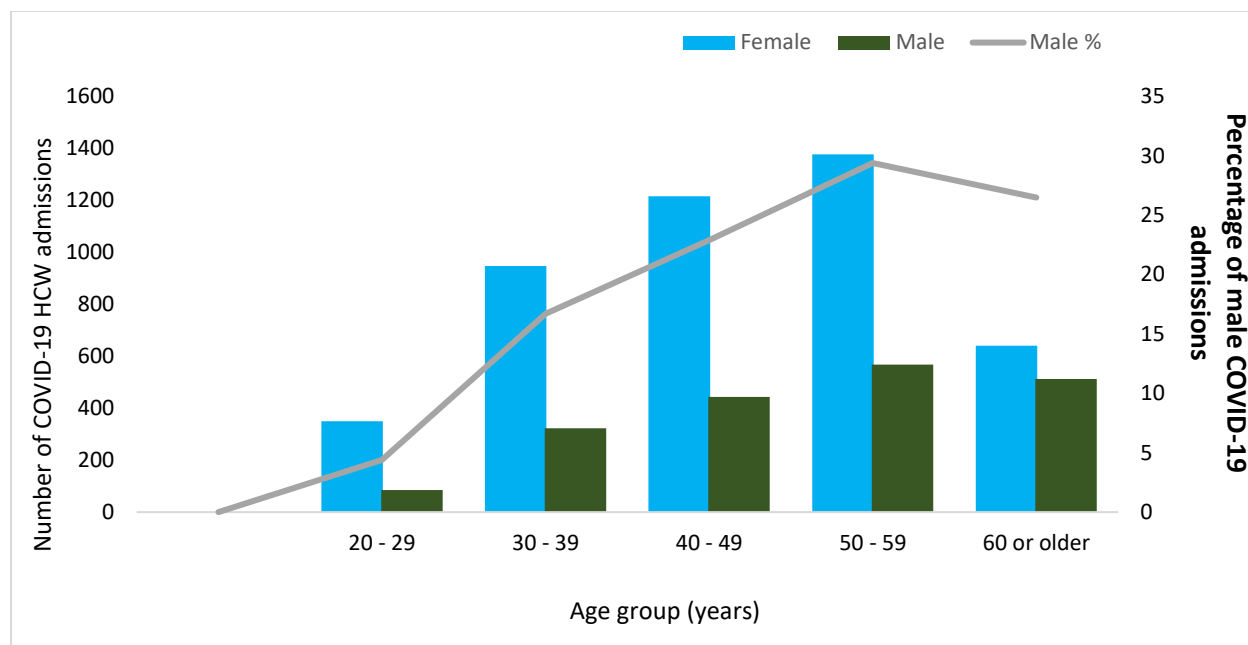


Figure 4: Number of reported HCW admitted with COVID-19 by age, gender and percentage of males, South Africa, 5 March– 30 January 2021 (n=6466)

The prevalence of comorbid diseases among HCW was 2688/5061 (53.1%). Among the 5061 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (1821/5061; 36.0%) and diabetes (1197/5061; 23.7%). There were 5.7 % (288/5061) of HCWs that were HIV positive, 5.8% (296/5061) were obese, 0.8% (40/5061) had active tuberculosis (TB) and 0.9(46/5061) 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–30 January 2021 (n=5061)

Comorbid disease*	Frequency (n)	Percentage (%)
Hypertension	1821	36.0
Diabetes mellitus	1197	23.7
Chronic cardiac disease	101	2.0
Chronic pulmonary disease/Asthma	338	6.7
Chronic renal disease	29	0.6
Malignancy	26	0.5
HIV	288	5.7

Active tuberculosis	40	0.8
Previous history of tuberculosis	46	0.9
Obesity	296	5.8

* 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 1042 (16.1%) HCW admissions were ever treated in ICU, of these 418 (40.1%) were treated with oxygen, 352 (33.8%) were treated on ventilation and 310 (42.6%) received both treatments. The mean age of patients who received oxygen or ventilation as an intervention (51.7 years) was significantly different from those who did not receive oxygen or ventilation intervention (45.9 years) ($p < 0.0001$). Of the HCW admissions treated with oxygen or ventilation, 1007 (19.9%) had more than one comorbid disease ($p < 0.001$).

Outcomes

Of the 6466 HCW admissions, 5467 (84.6%) were discharged alive, 88 (1.4%) transferred out to either higher level care or step-down facilities, 656 (10.2%) HCWs had died and 255 (3.9%) were currently in hospital. The number of COVID-19 deaths among HCWs in the second wave was lower, whereas more deaths were seen in non-HCWs. The case fatality ratio (CFR) of HCWs with known in-hospital outcome reported to DATCOV was (656/6123, 10.7%) compared to a CFR of (39923/173595; 22.9%) among non-HCW admissions ($p < 0.001$) (Figure 5).

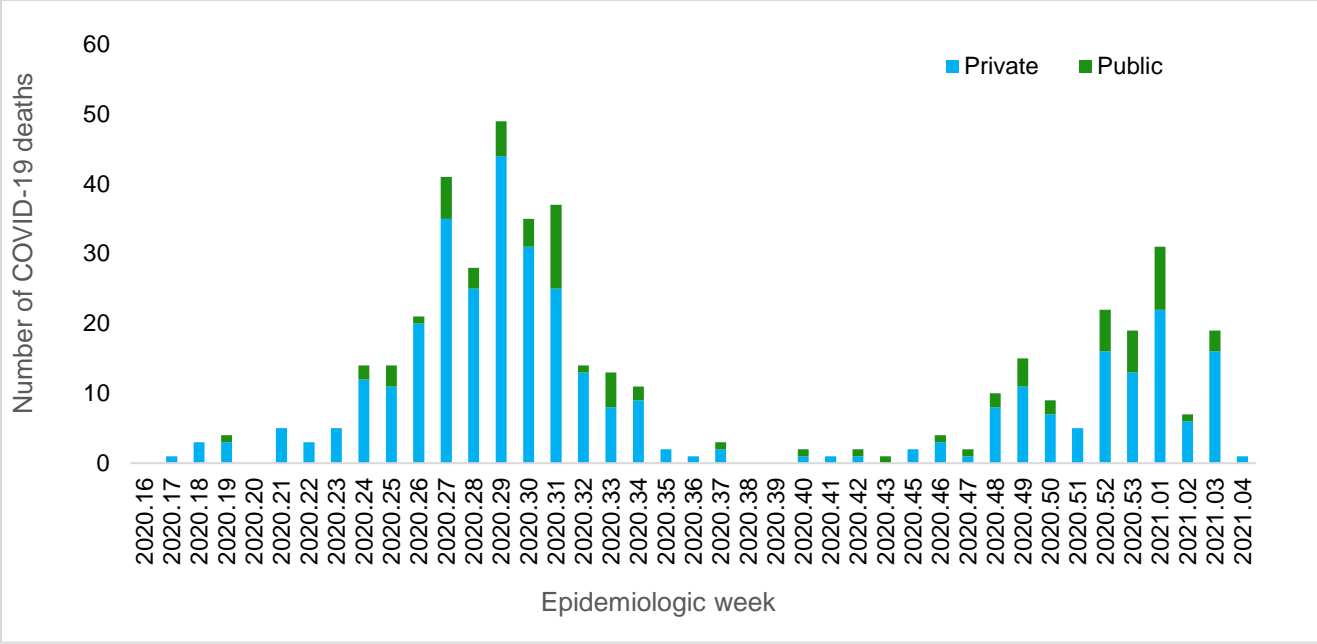


Figure 5. Number of reported COVID-19 deaths among admitted HCW by epidemiologic week in private and public sector, South Africa, 5 March– 30 January 2021.

Please note that the mortality data presented was based on available information from sentinel hospitals as of 02 January 2021, 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, were reported in Kwa-Zulu Natal (176, 26.8%), followed by the Eastern Cape 170 (25.9%) and 155 (23.6%) from Gauteng provinces. Two hundred and eighty (42.7%) 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. Three hundred and eighty-four (58.5%) of the deceased were admitted in ICU, 201 (30.6%) were ventilated, and 469 (71.5 %) were given supplemental oxygen. The median length of stay for the HCWs who died was 9 days [IQR 4 – 17] compared to 6 days [3 – 10] for those discharged alive. Of the HCWs who died, 433 (69.3%) had comorbid disease reported and 223 (35.7%) had more than one reported comorbidity. Hypertension 341 (55.5%), diabetes 245 (40.4%) and obesity 52 (24.8%) were the common reported comorbid diseases among the deceased.

Conclusions

The number of HCW admission started increasing in the second wave of COVID-19 infections around week 45. By province, Gauteng, KwaZulu-Natal, Eastern Cape and the Western Cape had a higher number of HCW admissions from week 46-49. Nonetheless, admissions are declining in week 2 to week 4 of 2021. The CFR among HCWs was lower than in the non-HCW. 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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