

COVID-19

Sentinel Hospital Surveillance

Weekly Update on Hospitalized HCWs

Update: Week 2, 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 16 January 2021 on the DATCOV platform.

HIGHLIGHTS

- As of 16 January 2021, 6044 (3.4%) of the 176217 COVID-19 hospital admissions recorded on the DATCOV surveillance database, were health care workers (HCWs), reported from 628 facilities in all nine provinces of South Africa. Among 1799/6044 (29.8%) HCWs with available data on type of work, 1118/1799 (62.2%) were nurses, 333/1799 (18.5%) porters or administrators, 161/1799 (8.9%) allied HCWs, 122/1799 (6.8%) doctors, 44/1799 (2.5%) paramedics, and 21/1799 (1.2%) laboratory scientists.
 - There was an increase of 620 new HCW admissions since week 53.
 - There were 2123 (35.1%) and 3921 (64.9%) admissions reported in the public and private sector, respectively.
 - The majority of HCW admissions (5217/6044; 86.3%) were recorded in four provinces, with the highest number 1994/6044 (32.9%) reported in Gauteng, followed by 1542/6044 (25.5%) in KwaZulu-Natal, 934/6044 (15.5%) in Eastern Cape and 747/6044 (12.4%) in Western Cape provinces.
 - The median age of COVID-19 admissions among HCWs was 49 years (interquartile range [IQR] 39–57). There were 1066 (17.6%) admissions in HCW 60 years and older. Among admitted HCWs with COVID-19, 4257 (70.5%) were female.
 - The prevalence of comorbid diseases among HCW was 2437/4545 (53.6%). Among the 4545 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (1643/4545; 36.1%) and diabetes (1073/4545; 23.6%). There were 6.1 % (276/4545) of HCWs that were HIV positive, 5.8% (264/4545) were obese, 0.9% (40/4545) had active tuberculosis (TB) and 0.9 (40/4545) reported a previous history of TB.
 - A total of 947 (15.7%) HCW admissions were ever treated in ICU, of these 318 (33.6%) were treated with oxygen, 308 (32.5%) were treated on ventilation and 259 (41.2%) received both treatments. Of the 6044 HCW admissions, 5024 (83.1%) were discharged alive, 75 (1.2%) transferred out to either higher level care or step-down facilities, 582 (9.6%) HCWs had died and 363 (6.0%) were currently in hospital. The majority of deaths among HCW admitted with COVID-19, were reported in the Eastern Cape (163, 28.0%), followed by 153 (26.3%) from KwaZulu-Natal and 127 (21.8%) from Gauteng provinces. Of the HCWs who died, 387 (70.9%) had comorbid disease reported and 201 (36.8%) had more than one reported comorbidity.
 - Among HCWs with known in-hospital outcome the case fatality ratio was (582/5606, 10.4%).
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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 16 January 2021, a total of 628 facilities, 378 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 – 16 January 2021

Provinces	Public	Private
Eastern Cape	84	18
Free State	35	20
Gauteng	38	90
KwaZulu-Natal	63	45
Limpopo	41	7
Mpumalanga	29	9
North West	13	12
Northern Cape	16	8
Western Cape	59	41
South Africa	378	250

Results

From 5 March to 16 January 2021, there was a total of 6044/176217 (3.4%) COVID-19 admissions among HCWs. Of these admissions, 2123 (35.1%) and 3921 (64.9%) were reported in the public and private sector, respectively (Figure 1). The majority of HCW admissions (5217/6044; 86.3%) were recorded in four provinces, with the highest number 1994/6044 (32.9%) reported in Gauteng, followed by 1542/6044 (25.5%) in KwaZulu-Natal, 934/6044 (15.5%) in Eastern Cape and 747/6044 (12.4%) in Western Cape provinces (Figure 1).

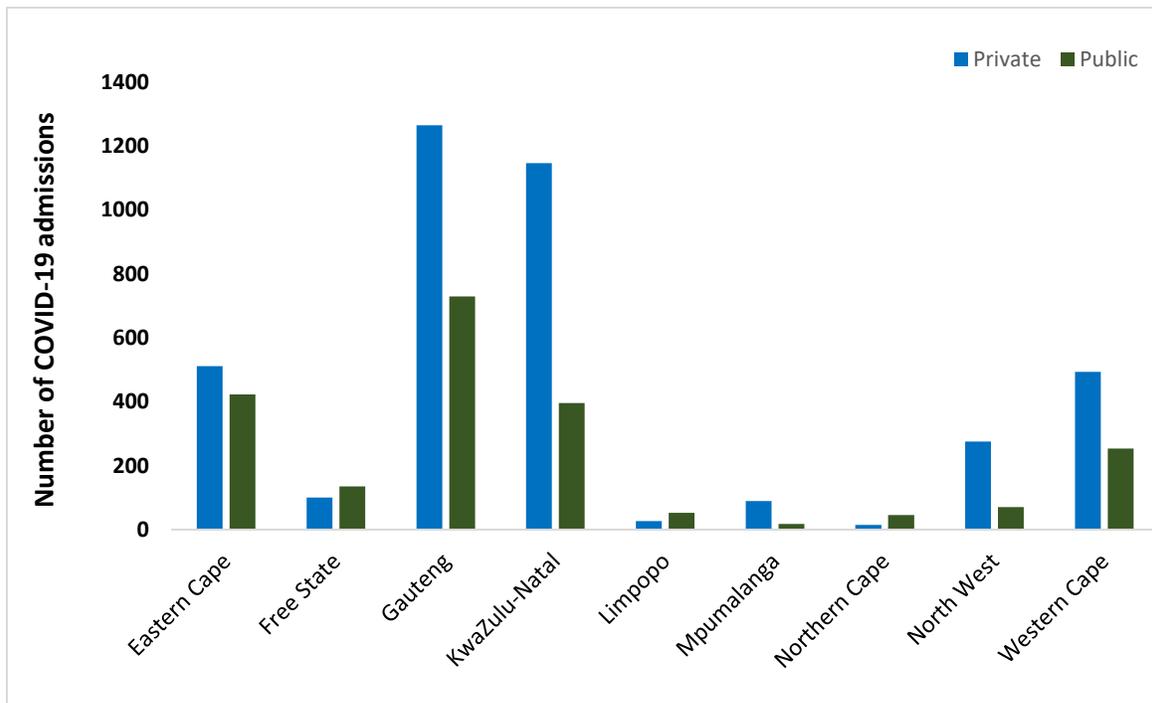


Figure 1: Number of reported COVID-19 admissions among HCWs by province and health-sector, South Africa, 5 March – 16 January 2021 (n=6044)

The overall number of admissions has been decreasing since week 28, however, there was a steady increase in hospital admissions from week 45 to week 48. In week 49, the number of HCW admissions slightly declined. There was a steady increase in the number of new admissions in week 50 to 53. Week 1 of 2021 shows an increase in HCW admissions, followed by a decrease in the number of hospital admissions in week 2 (Figure 2).

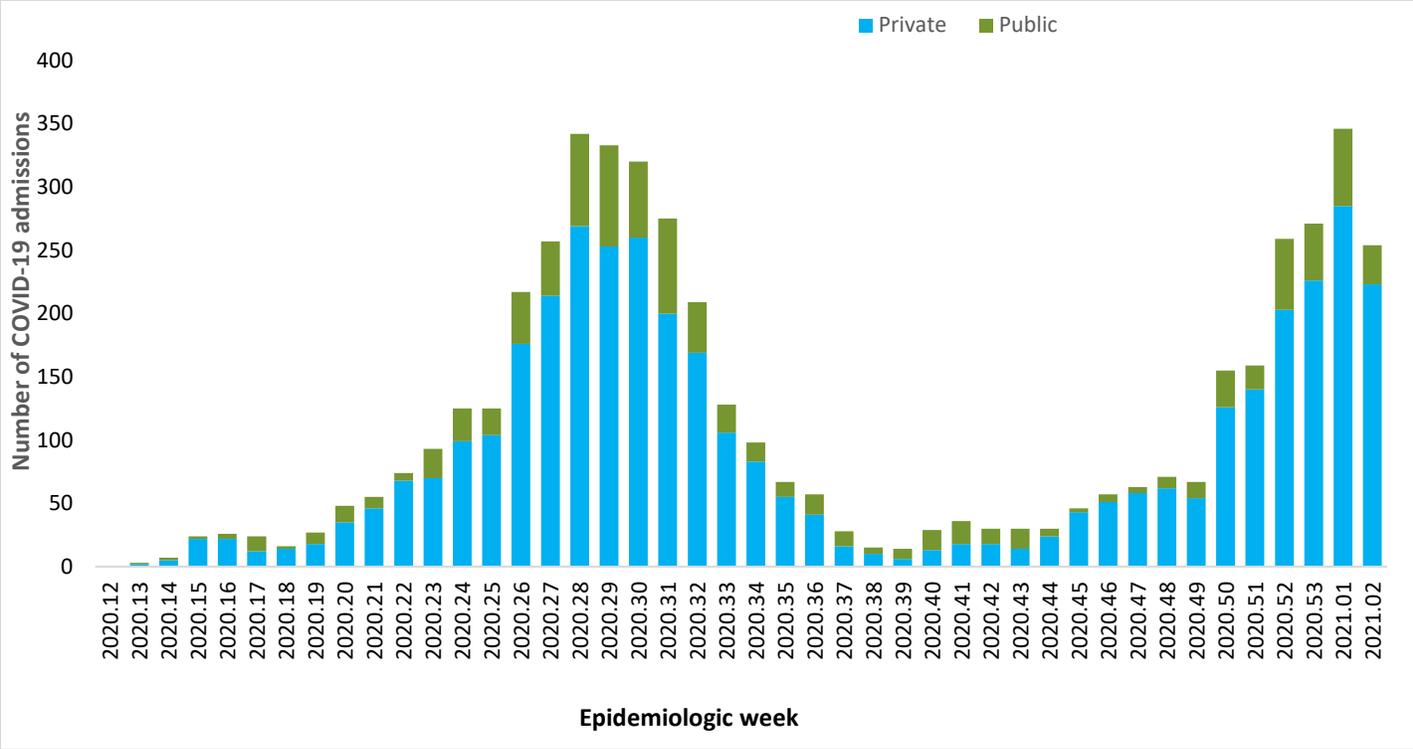


Figure 2: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and health-sector, South Africa, 5 March– 16 January 2021 (n=6044)

Gauteng, followed by Kwa-Zulu Natal were provinces showing the highest number of hospital admissions between week 1 and week 2 as shown in Figure 3.

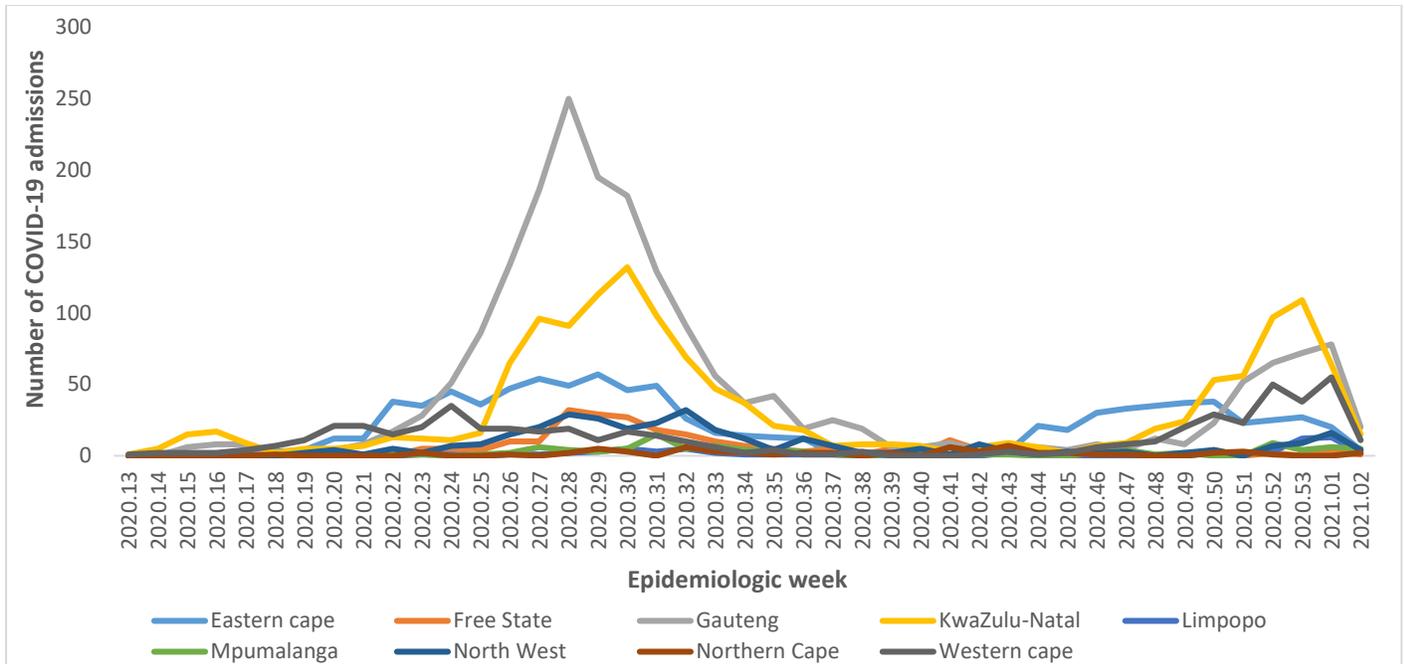


Figure 3: Number of reported COVID-19 admissions among HCWs by epidemiologic week of diagnosis and provinces, South Africa, 5 March– 16 January 2021 (n=6044)

Demographic and clinical characteristics of HCWs admitted with COVID-19, South Africa, 5 March–16 January 2021

The median age of COVID-19 admissions among HCWs was 49 years (interquartile range [IQR] 39–57). There were 1066 (17.6%) admissions in HCW 60 years and older (Figure 4). Among admitted HCWs with COVID-19, 4257 (70.5%) were female. The sex ratio varied by age group with females more common than males in all age groups (Figure 4). Among the 4257 female admissions, 102 (2.4%) were pregnant.

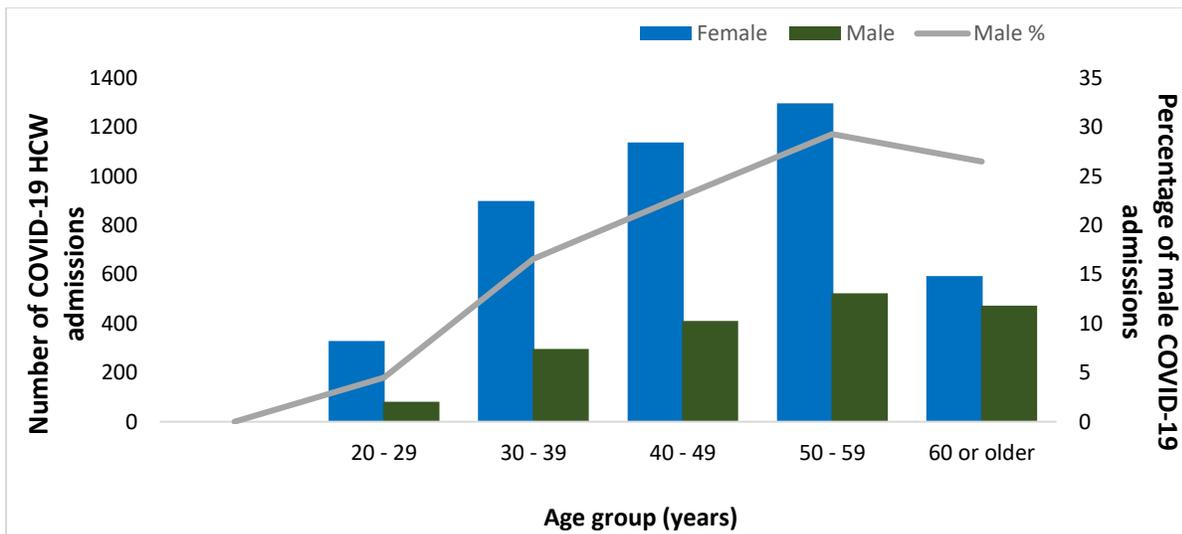


Figure 4: Number of reported HCW admitted with COVID-19 by age, gender and percentage of males, South Africa, 5 March– 16 January 2021 (n=6044)

The prevalence of comorbid diseases among HCW was 2437/4545 (53.6%). Among the 4545 HCWs who had reported a comorbid condition, the most commonly reported comorbid conditions were hypertension (1643/4545; 36.1%) and diabetes (1073/4545; 23.6%). There were 6.1 % (276/4545) of

HCWs that were HIV positive, 5.8% (264/4545) were obese, 0.9% (40/4545) had active tuberculosis (TB) and 0.9 (40/4545) 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–16 January 2021 (n=4545)

Comorbid disease*	Frequency (n)	Percentage (%)
Hypertension	1643	36.5
Diabetes mellitus	1073	24.6
Chronic cardiac disease	94	2.1
Chronic pulmonary disease/Asthma	314	6.9
Chronic renal disease	28	0.6
Malignancy	25	0.6
HIV	276	6.1
Active tuberculosis	40	0.9
Previous history of tuberculosis	40	0.9
Obesity	264	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 947 (15.7%) HCW admissions were ever treated in ICU, of these 318 (33.6%) were treated with oxygen, 308 (32.5%) were treated on ventilation and 259 (41.2%) 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 (46.1 years) ($p < 0.0001$). Of the HCW admissions treated with oxygen or ventilation, 914 (20.1%) had more than one comorbid disease ($p < 0.001$).

Outcomes

Of the 6044 HCW admissions, 5024 (83.1%) were discharged alive, 75 (1.2%) transferred out to either higher level care or step-down facilities, 582 (9.6%) HCWs had died and 363 (6.0%) were currently in

hospital. The case fatality ratio (CFR) of HCWs with known in-hospital outcome was lower than the CFR among non-HCW admissions reported to DATCOV (582/5606, 10.4%. vs 32928/150351; 21.9%, $p < 0.001$) (Figure 5).

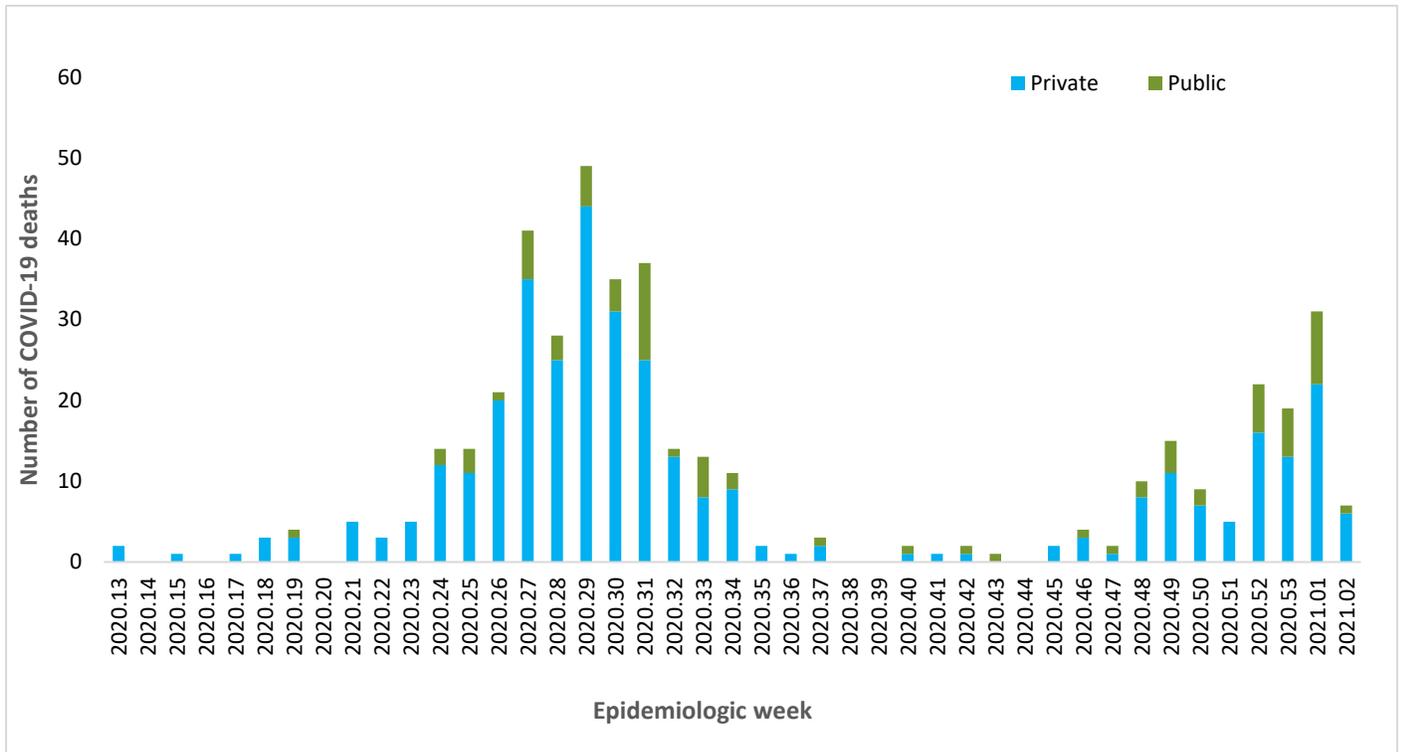


Figure 5. Number of reported COVID-19 deaths among admitted HCW by epidemiologic week in private and public sector, South Africa, 5 March– 16 January 2021.

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 to be of a HCW were removed from the data set.

The majority of deaths among HCWs admitted with COVID-19, 163 (28.0%), were reported in the Eastern Cape, followed by 153 (26.3%) from KwaZulu-Natal and 127 (21.8%) from Gauteng provinces. Two hundred and forty-six (42.3%) 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 twenty-nine (56.5%) of the deceased were admitted in ICU, 169 (29.0%) were ventilated, and 403 (69.2 %) 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, 387(70.9%) had comorbid disease reported

and 201 (36.8%) had more than one reported comorbidity. Hypertension 304 (56.6%), diabetes 223 (42.2%) and obesity 47 (23.4%) were the common reported comorbid diseases among the deceased.

Conclusions

The overall number of admissions among HCWs increased substantially from week 50 and week 1 of 2021, followed by a decrease in the number of hospital admissions in week 2. 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

Our gratitude goes to the National Institute for Communicable Diseases for granting access to the data.