

# Factors associated with Coronavirus disease 2019 (COVID-19) and an assessment of adherence to infection prevention and control (IPC) guidelines among health workers —Nakonde District, Zambia, 2020

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**KEYWORDS:** Health care workers, Covid-19, Infection Prevention and Control

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## ABSTRACT

**Introduction:** Health workers play a critical role in the clinical management of COVID-19 patients. However, research on their infection risk and clinical characteristics, particularly in Africa, is emerging. We investigated risk factors for COVID-19 infection and assessed adherence to infection prevention and control (IPC) guidelines among health workers in Nakonde District. **Methods:** A case-control study among health workers at Nakonde Urban Health Centre and Nakonde District Hospital was conducted from 15 to 25 May 2020. A standardized questionnaire covering demographic information; possible exposure to persons with COVID-19; adherence to infection prevention and control measures was administered to all health workers present at these facilities. Descriptive statistics were performed and logistic regression was used to calculate the odds ratio (OR) and 95% CIs. **Results:** A total of 197 HCWs are deployed in the two facilities out of which we obtained 138 responses. Seventy-five (54%) had complete responses that were analyzed in this study. Among the 75, 54 (72%) were female. The median age for all the HCWs that responded was 30 years (IQR 26-33). Thirty-seven (49%) were laboratory-confirmed COVID-19 cases. Symptoms that were exhibited among HCWs with COVID-19 included cough (49%), headache (43%), runny nose (32%) and fatigue (18%); fever was rarely reported (8%). Cough was associated with being a case of COVID-19 (OR 4.2 95% CI 1.5-11.9). Coexisting conditions were similar among the cases and controls. There were no statistically significant differences in exposures between HCWs with confirmed COVID-19 and those without (OR 0.96; 95% CI 0.4-2.5). The WHO five moments of hand hygiene recommended for health workers were practiced by (64%). Non availability of Personal Protective Equipment was reported by 70% of HCWs and this was similar among the cases of COVID-19 and the non-cases. **Conclusion:** Given the critical role HCWs play in looking after the sick, continued protection of this population at work, at home, and in the community through surveillance should be a national priority.

**RECEIVED**

12/07/2021

**ACCEPTED**

14/12/2021

**PUBLISHED**

31/12/2021

**LINK**

[www.afenet-journal.net/content/series/4/2/10/full/](http://www.afenet-journal.net/content/series/4/2/10/full/)

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**CITATION**

Chimaka Mukwangole et al. Factors associated with Coronavirus disease 2019 (COVID-19) and an assessment of adherence to infection prevention and control (IPC) guidelines among health workers —Nakonde District, Zambia, 2020. J Interv Epidemiol Public Health. 2021 December; Suppl 2: 10  
DOI: <https://doi.org/10.37432/jieph.suppl.2021.4.4.02.10>

## Introduction

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COVID-19 is an infectious respiratory illness caused by the Severe Acute Respiratory Syndrome-Corona Virus2 (SARS-CoV2) and was first reported in China. Zambia recorded its first confirmed cases of COVID-19 in March 2020. As at 1st September 2020, the country had recorded 12,381 cases in all 10 provinces, 194 COVID associated deaths and 11,479 recoveries. Initially, cases were reported primarily from Lusaka, the capital city of Zambia and the location of the main international airport. However, in early May multiple cases were reported among travelers who reported passing through Nakonde, a rural border town with Tanzania that is >1,000km from Lusaka.

In response to these reports, an investigation was initiated. During a targeted testing campaign from 3-8 May 2020 was conducted with focus on Lodges & Sex workers, Truckers, Immigration Officers & Clearing Agents, Health Care Workers (HCWs) and contacts to those that had tested positive for SARS-COV-2. Most affected targeted groups were; immigration and clearing agents (14.3%) truckers (13%); HCWs (12.7%), lodge and sex workers (7.8%) and contacts (5.4%). By the end of this investigation (25 May), Nakonde District had recorded 398 COVID-19 cases ranking highest of all the districts with recorded cases in the country at that time.

HCWs play a critical role in the clinical management of patients with COVID-19 and in ensuring adequate IPC measures are implemented and adhered to in health care facilities. It therefore poses a great risk if they become infected given their essential role in access to care for COVID-19 and other health conditions [1]. Understanding COVID-19 infection among health workers and the risk factors for adverse outcomes is important for preventing the future infection of HCWs and other patients, and updating IPC measures in health care facilities. Additionally, reducing nosocomial infections also helps prevent secondary COVID-19 transmissions within health care settings, which was a frequent occurrence in the U.S. among health workers with confirmed COVID-19 [2]. In healthcare settings, studies have shown that factors associated with HCW infection have included: late recognition or suspicion of COVID-19 in patients, working in a higher-risk department such as medical wards, longer duty hours, sub-optimal adherence to IPC

measures such as hand hygiene practices, and lack of or improper use of personal protective equipment (PPE) [3]. Some other factors have also been identified, such as inadequate or insufficient IPC training for respiratory pathogens, including the COVID-19 virus, as well as long exposure in areas in healthcare facilities where large numbers of COVID-19 patients were being cared for [4]. This investigation sought to identify risk factors for COVID-19 infection among health workers and assess the levels of adherence to IPC guidelines among HCWs in Nakonde District.

## Methods

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### Study design and population

We conducted an unmatched case control study among health workers at Nakonde Urban Health Centre and Nakonde District Hospital. Health services are provided by the district health office through 20 health facilities. Nakonde District Hospital offers level one services with inpatient (40 beds) capacity and is the referral institution in the district. Nakonde urban health centre is a high-volume facility and is the largest in terms of catchment area population in the district. These two facilities were included in the screening exercise hence them being our study sites in this investigation. All 197 HCWs at the two facilities were eligible to be included in the study and were within Nakonde District from 3-25 May 2020.

A confirmed case of COVID-19 was defined as any person with a positive RT-PCR test result from 3 - 25 May 2020. A control was one with a negative RT-PCR result or did not have their results in the same period. The HCWs were targeted in the mass testing for COVID-19 as they were considered a high-risk group getting. Only those that consented and had information filled in from all sections of the questionnaire, were included in the analysis.

### Data collection

HCWs at these facilities were invited to participate in the study via the social media platforms. The standardized questionnaire were uploaded onto the kobo collect platform and shared via the hospital group platforms All HCWs recruited into the study completed a questionnaire which covered: (a) demographic information; (b) adherence to infection

prevention and control measures as captured in table 3; and (c) any possible exposure to a COVID-19-infected patient as captured in table 2

## Data analysis

Continuous variables were described with medians and Interquartile ranges (IQRs). Categorical variables were described as frequency and percentages. The Mann-Whitney U-test,  $\chi^2$  test, and Fisher exact test were used according to variable types as appropriate. The logistic regression model was used to calculate odds ratios (OR) and 95% confidence intervals (CIs) for risk factors for COVID-19 among HCWs. A 2-sided p-value of  $<0.05$  was considered statistically significant. All analyses were performed using STATA statistical software version 14.

## Ethical Consideration

This investigation was classified under the public health surveillance (emergency response) act and did not require ethical approval from an institutional review board. However, a consent form was uploaded with the instruction of, “if you read and agree to participate in the study, then proceed to fill in the questionnaire.”

## Results

A total of 197 HCWs are deployed in the two facilities out of which we obtained 138 responses. Seventy-five (54%) had complete responses that were analyzed in this study [Figure 1](#). Seventy-three (46%) were excluded because they did not indicate whether they were a case of COVID-19, lacked critical data on demographics, history of exposure and IPC practices. Of the 75, 4 (72%) were female [Table 1](#). Thirty-seven (49%) were laboratory confirmed COVID-19 cases. The median age for all the HCWs that responded was 30 years IQR (26-33). Most of the health workers who responded were nurses (57(76%)) and the others consisted of clinical officers 4(5%), medical doctors 3 (4%), nutritionist 1(1%), lab techs 1(1%), environmental officer 1(1%) and physiotherapy technician 1(1%). The majority of the cases (48%) reported to be working from OPD while 19% and 17% were from maternity and inpatient departments respectively. There were no significant

differences between the cases and controls regarding age, gender, occupation and level of education.

The infection rate among HCWs that responded was 19% at the two health facilities with a population of 197. Among persons with confirmed COVID-19, 30 (81%) were symptomatic while 16(42%) of persons without confirmed COVID-19 reported  $\geq 1$  symptom in the past 14 days (OR 5.9 (95% CI: 2.1, 16.8)  $P=0.001$ ). The commonest symptoms that were exhibited among the cases included cough 18 (49%), headache 16(43%), runny nose 12(32%) and fatigue 4(18%). Fever (3(8%)) was rarely reported. Among the symptoms, only cough was more frequent among HCWs with COVID-19 infection than those without COVID-19 (OR 4.19 (95% CI: 1.47-11.9)). Co-existing medical conditions were rare and similar among cases of COVID-19 and non-cases.

There was no difference among the HCWs with confirmed COVID-19 10(28%) and non-cases 9(24%) who had cared for a patient with symptoms related to COVID-19 [Table 2](#). Nine (81%) of the HCWs diagnosed with COVID-19 had contact ‘more than twice’ with patients who had symptoms. Among HCWs with COVID-19, 8(23%) had a household member with symptoms and 14(38%) had an encountered a person with confirmed COVID-19 case for  $\geq 15$  minutes. Of those who had an encounter, 8(53%) did not wear any PPE at all whereas, of those that used PPE 7(46%) wore only a face mask. There were no statistically significant differences in exposures between persons with confirmed COVID-19 and those without.

Among persons with COVID-19, self-reported hand hygiene practices were always and most of the time being adhered to 71(95%) [Table 3](#). However, when asked about the WHO five moments of hygiene recommended for health workers [5], only 44(59%) reported practicing all five. Adhering to IPC standard precautions when in contact with any patient was ‘always’ followed by 46%of the case patients. Most respondents 52(70%) reported that there was no adequate PPE in the facilities.

## Discussion

During the COVID-19 outbreak in Nakonde District, Zambia, many HCWs in two health facilities were affected. HCWs with COVID-19 did

not report more frequent exposure to patients with symptoms suggestive of COVID-19, suggesting infections may have been occurring outside health facilities. This is consistent with the observed community transmission occurring in Nakonde District at the time of this study. In addition, many respondents reported contact with household members with COVID-19 like symptoms. Asymptomatic patients and co-health workers could have been another source of exposure. Preventive measures should therefore be strictly adhered to both at work and in the communities where the HCWs reside. Unfortunately, in this study HCWs reported difficulty accessing PPE.

Our findings demonstrate a knowledge gap in IPC practices among HCWs in Nakonde District particularly on appropriate hand hygiene. Although HCWs reported, always and most of the time adhering to hand hygiene practices, some reported not practicing all the WHO five moments of hygiene recommendations [5]. The use of alcohol based hand rub or soap and water was not always adhered to among cases and non-cases. More HCWs always used hand rub or soap and water after touching a patient compared to before touching a patient. Hand hygiene is the primary measure proven to be effective in preventing Health care acquired infections (HCAIs). IPC trainings prepare Health Care Workers for risk prevention while providing care for COVID-19 patients. However, it has been shown that HCWs have challenges in complying with hand hygiene indications at different levels despite undergoing training [5]. It would therefore be imperative to encourage HCWs to follow the recommended guidelines so as to prevent HCAIs. HCWs with COVID-19 were more likely to have a symptom of cough than persons without confirmed disease. However, 19% of HCWs with COVID-19 were asymptomatic, which was higher than the 8% asymptomatic HCWs with COVID-19 in a study done in the U.S. [2]. That many HCWs without COVID-19 presented with symptoms that overlap with common COVID-19 symptoms points to the fact that clinically identifying cases would be very difficult in the absence of active screening of HCWs as they report for work [6]. The fact that majority of HCWs with evidence of COVID-19 reported mild and no symptoms points to the need for surveillance protocols to identify asymptomatic and potentially infectious HCWs so that they can be removed from the workplace [7]; symptoms-based screening

potentially misses a large proportion of persons infected with SARS-CoV-2 but serial testing for COVID-19 in areas with known active transmission has shown promising results, although this is resource intensive [8].

Even though cough was one symptom which was found to be more common among COVID -19 case patients, less than half of HCWs with confirmed COVID-19 reported this symptom. Fever was rarely reported, which is in contrast to many other studies which found fever as the most common symptom [9].

Correct application of PPEs, alongside administrative and engineering controls, substantially reduces the COVID-19 risk [10,11]. Of the health workers who reported having close contact with a confirmed case for more than 15 minutes only about half used facemasks among cases of COVID-19. This may point to challenges with the supply of PPE in Nakonde; a problem that has been highlighted by the global shortages of PPE and resulting competition among countries to obtain PPE for their healthcare workforce.

Gaps in IPC adherence, more so in the WHO five moments of hand hygiene, require urgent redress [4,5]. The cases that were found among HCWs through mass screening highlight the dangers that health personnel face in their course of duty. Not only were they exposed at work by way of getting into contact with patients exhibiting symptoms of COVID-19, but also exposure was there at community level. Lack of access to PPE was evident in Nakonde, and efforts to procure and distribute PPE throughout Zambia need reinforcement. It is therefore necessary to ensure the health and safety of health care workers, both at work and in the community by putting in all that is required for them to conduct their duties with little impediments.

### **Limitations**

Our study has several limitations. A large number of respondents were excluded from analysis because of missing information. Second, we could only compare a small number of confirmed cases with non-cases making the sample size small, limiting our ability to detect difference between groups. On one hand, we did not have enough statistical power to detect the differences in certain variables between the

groups. Additionally, because of the small sample size we could not perform multivariable logistic regression. IPC adherence was self-reported and not observed. Reporting bias may have occurred in our study as participants were asked to recall past events over a period of 14 days. Some health workers may have been classified as non COVID-19 cases because they never took a test and as such did not know their true status. Further the use of the electronic hospital platform could have disadvantaged the elderly workers in completing the form as evidenced by the young age group that responded fully to the questionnaire.

## Conclusion

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Given the critical role HCWs play in looking after the sick, continued protection of this population at work, at home, and in the community through surveillance should be a national priority

## Recommendations

Training HCWs in IPC and emphasis on hand hygiene is recommended in Nakonde District. Improving the supply of PPE in health facilities and training HCWs in its appropriate use is cardinal. Intensifying active screening of HCWs on a regular basis as they report for work would lead to timely detection and isolation of potential patients. Ensuring that HCWs take the necessary precautions both at work and away from work should be emphasized at all times.

## What is known about this topic

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- Several thousands of HCWs globally have been reported as infected with the severe acute respiratory syndrome corona virus 2 that causes the disease.

## What this study adds

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- Due to the paucity of knowledge on the subject matter, this study adds to the body of knowledge on the factors that are associated with health workers getting infected with COVID-19.

- It brings to the attention of health authorities some of the challenges that HCWs face so that policy can be changed and make the working environment safe.

## Competing interests

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The authors declare no competing interests.

## Authors' contributions

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Chikama Mukwangole, Amos Hamukale, Precious Kalubula, Kelvin Mwangilwa and Abdul Mohammed designed the study, performed the statistical analyses and data interpretation, and wrote the manuscript. Nyambe Sinyange and Nathan Kapata contributed to interpretation of data and manuscript revisions. All authors reviewed and approved the final manuscript.

## Acknowledgements

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The authors wish to thank the Nakonde District health workers, Zambia National Public Health Institute (ZNPFI), and CDC, for their efforts in supporting this work.

## Tables and figures

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**Table 1:** Clinical and demographic characteristics of COVID-19 cases and non-COVID-19 HCWs of Nakonde District N=75

**Table 2:** Risk of exposure among HCWs with COVID-19 and non-COVID-19 HCWs of Nakonde District 2020

**Table 3:** Adherence to infection prevention and control (IPC) measures among COVID-19 cases and non-COVID-19 HCWs of Nakonde District, 2020

**Figure 1:** Flowchart of the study participants, Nakonde, 2020

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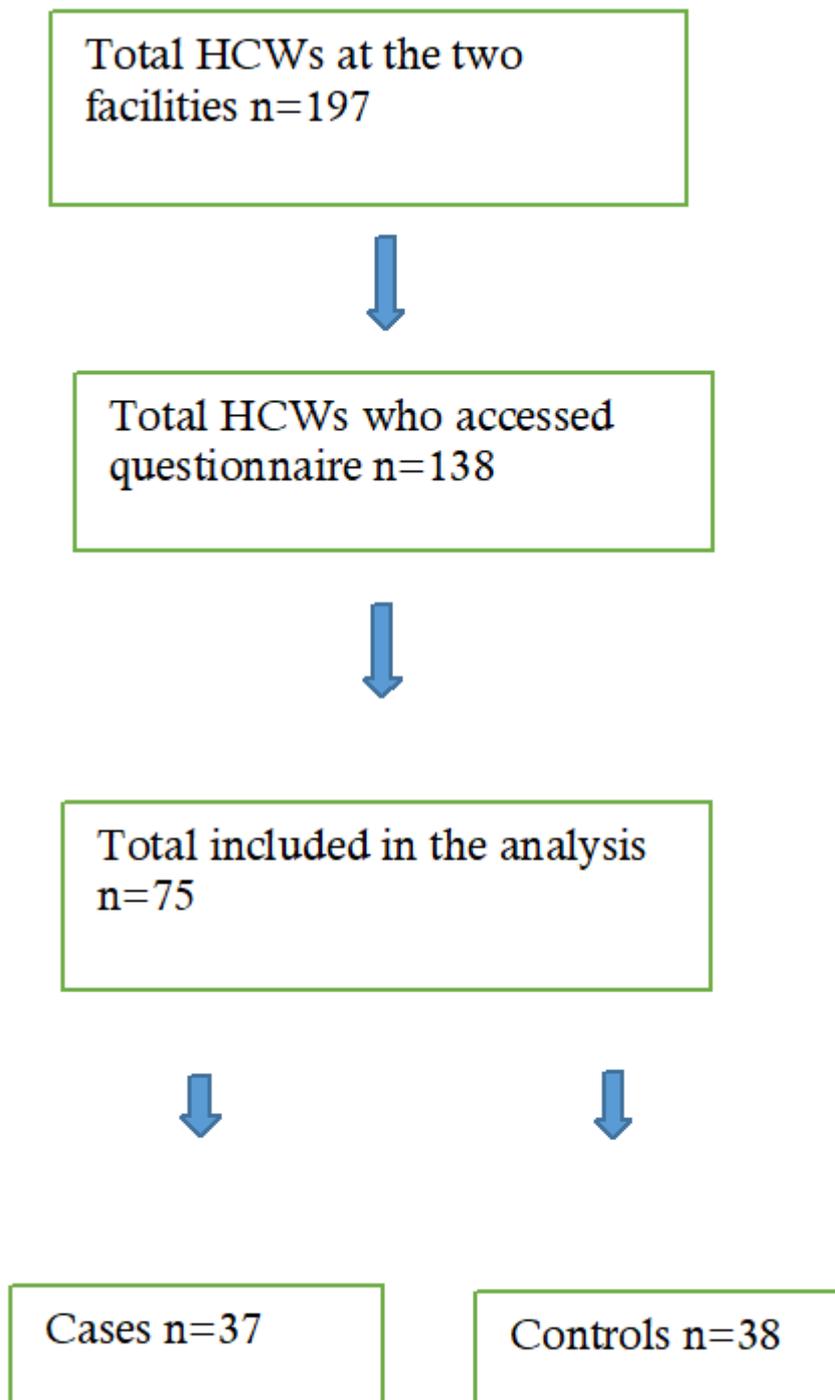
<b>Table 1: Clinical and demographic characteristics of COVID-19 cases and non-COVID-19 HCWs of Nakonde District N=75</b>						
		<b>COVID-19 cases n=37(%)</b>	<b>Non COVID-19 HCWs n=38(%)</b>	<b>Total N (%)</b>	<b>OR(95% CI)</b>	<b>p-value</b>
Age in years (IQR)		31	32 (	30 (26-33)		0.4
Sex Female		26 (70)	28 (74)	54	0.8 (0.3 2.3)	0.7
Occupation	Nurse	30 (81)	27 (71)	57 (76)	Ref	0.3
	Other*	11 (19)	7 (9)	18 (24)	0.6 (0.2 1.7)	
Department	OPD	18 (48)	13 (34)	31 (43)	Ref	0.1
	Maternity	7 (19)	10 (28)	17 (24)	0.5 (0.2 1.7)	
	Inpatient	6 (17)	2 (5)	8 (11)	2.1 (0.4 12.5)	
	MCH	3 (8)	8 (22)	11(15)	0.3 (0.1 1.2)	
	ART	1 (3)	0 (0)	1 (1)	NC	
	Registry	1 (3)	0 (0)	1 (1)	NC	
	Dental	1 (3)	0 (0)	1 (1)	NC	
	Level of education	Degree	2 (6)	6 (18)	8 (11)	Ref
	Diploma	27 (75)	23 (68)	50 (71)	3.5 (0.7 16.2)	
	Certificate	7 (19)	5 (15)	12 (17)	4.2 (0.6 30.1)	
	Secondary	0 (0)	1 (3)	1 (1)	NC	
Patients' pre-existing condition	Pregnancy	3 (9)	5 (14)	8 (11)	NC	0.7
	Diabetes	2 (6)	0 (0)	2 (3)	NC	0.2
	Hypertension	0 (0)	1 (3)	1 (1)	NC	1
	Asthma	0 (0)	2 (6)	2 (3)	NC	0.5
	Chronic lung disease	1 (3)	1 (3)	2 (3)	1 (0.1 16.7)	1
	HIV	1(3)	0 (0)	1 (1)	NC	0.5
Social Habits	Smoking	0	1 (3)	1 (2)	NC	
	Alcohol use	7 (27)	10 (28)	17 (27)	1.2 (0.4 3.9)	0.5
Symptoms presented with in the last 14 days	Having reported any symptom	30 (81)	16 (42)	46 (61)	5.9 (2.1 16.8)	0.001
	Cough	18 (49)	7 (18)	25 (33)	4.2 (1.5 11.9)	0.005
	Headache	16 (43)	9 (23)	25 (69)	NC	
	Runny nose	12 (32)	6 (16)	18 (24)	2.5 (0.8 7.5)	0.1
	Sore throat	7 (19)	8 (21)	15 (20)	0.9 (0.3 2.7)	0.8
	Fatigue	4 (18)	1 (7)	5 (14)	2.3 (0.2 23.3)	
	Temperature >38 degrees Celsius	3 (8)	1 (3)	4 (5)	3.2 (0.3 32.0)	0.6
	Muscle ache	1 (5)	1 (7)	2 (6)	0.6 (0.03 10.1)	
	Nausea	1 (7)	1 (5)	2 (6)	NC	
	Conjunctivitis	0 (0)	1 (7)	1 (3)	NC	
	Rash	0 (0)	1 (7)	1 (3)	NC	
Symptoms brought about due to a known trigger**		4 (18)	10 (44)	14 (31)		0.1

\*Medical Doctor Clinical Officer, dental technologist, Nutrition technologist, Physiotherapist, EHT, Radio-technologist, Lab technologist, Clerk, cleaner, other  
\*\* Asthma, allergic reaction, common flu  
NC= not calculated

<b>Table 2: Risk of exposure among HCWs with COVID-19 and non-COVID-19 HCWs of Nakonde District 2020</b>					
<b>Exposure</b>	<b>COVID-19 cases N (%)</b>	<b>Non COVID-19 cases N (%)</b>	<b>Total N (%)</b>	<b>OR (CI)</b>	<b>Test statistic, p</b>
Encounter with a COVID-19 confirmed case for $\geq 15$ minutes	14 (38)	14 (37)	28 (38)	1.1 (0.4 2.8)	0.9
If yes did you wear:					
Face mask	7 (50)	7 (50)	14 (50)	0.6 (0.1 2.9)	0.5
Gloves	3 (20)	4 (33)	7 (26)	0.5 (0.1 2.9)	0.6
Face shield	2 (13)	2 (17)	4 (15)		1
Gown	2 (13)	1 (8)	3 (11)		1
Coveralls	1 (7)	1 (8)	2 (7)		1
Head cover	1 (7)	0 (0)	1 (4)		1
Shoe cover	1 (7)	1 (8)	2 (7)		1
None	8 (53)	4 (33)	12 (44)	2.3 (0.5 11.0)	0.4
Having cared for a patient with COVID-19 symptoms in the last 14 days?	10 (28)	9 (24)	19 (26)	1.2 (0.4 3.4)	0.7
If yes					
Once	2 (18)	2 (20)	4 (19)	NC	0.2
Twice	0 (0)	3 (30)	3 (14)	NC	
More than twice	9 (82)	5 (50)	14 (67)	1.8 (0.2 16.9)	
Household members exhibited COVID-19 symptoms in the last 14 days	8 (23)	4 (11)	12 (17)	2.4 (0.7 9.00)	0.2
Come into contact with bodily fluids of any of the patients you care for in the past 14 days	5 (15)	9 (24)	14 (20)	1.5 (0.5 5.2)	0.5
Involved in an aerosol producing procedure	2 (6)	1 (3)	3 (4)	2.2 (0.2 25.1)	0.6
Visited Tanzania in the last 14 days?	6 (17)	6 (16)	12 (16)	1.2 (0.31 3.80)	0.9

**Table 3:** Adherence to infection prevention and control (IPC) measures among COVID-19 cases and non-COVID-19 HCWs of Nakonde District, 2020

		COVID-19 cases 37 N (%)	Non COVID-19 HCWs 38 N (%)	Total N (%)	OR (CI)	
Adherence to infection prevention and control (IPC) measures information	Ever trained/oriented in IPC?	25 (67)	25 (65)	50 (69)		0.6
	How much cumulative IPC training					
	Less than 2 hours	9 (33)	11 (39)	20 (36)	Ref	
	More than 2 hours	18 (48)	17 (44)	35 (64)	1 (0.4 2.7)	
Follow recommended hand hygiene practices	Always	21 (57)	16 (42)	37 (49)	Ref	0.5
	Most of the time	15 (41)	19 (50)	34 (45)	0.6 (0.2 1.5)	
	Occasionally	1 (3)	2 (5)	3 (4)	0.4 (0.03 4.6)	
	Rarely	0 (0)	1 (3)	1 (1)		
Use alcohol-based hand rub or soap and water before touching a patient	Always	10 (27)	15 (41)	25 (34)	Ref	0.5
	Most of the time	23 (62)	13 (35)	36 (49)	2.7 (0.9 7.6)	
	Occasionally	4 (11)	5 (14)	9 (12)	1.2 (0.3 5.6)	
	Rarely	0 (0)	4 (10)	4 (5)		
Use alcohol-based hand rub or soap and water before cleaning/aseptic procedures	Always	20 (54)	23 (66)	43 (60)	Ref	0.4
	Most of the time	10 (27)	4 (11)	14 (19)	2.9 (0.8 10.6)	
	Occasionally	6 (16)	6 (17)	12 (17)	1.2 (0.3 4.1)	
	Rarely	1 (3)	2 (6)	3 (4)		
Use alcohol-based hand rub or soap and water after (risk of) body fluid exposure	Always as recommended	34 (94)	29 (76)	63 (85)	Ref	0.1
	Most of the time	2 (6)	6 (16)	8 (11)	0.3 (0.1 1.5)	
	Occasionally	0 (0)	1 (3)	1 (1)		
	Rarely	0 (0)	2 (5)	2 (3)		
Use alcohol-based hand rub or soap and water after touching a patient	Always as recommended	24 (65)	19 (51)	43 (58)	Ref	0.5
	Most of the time	11 (29)	14 (38)	25 (34)	0.6 (0.2 1.7)	
	Occasionally	2 (5)	2 (5)	4 (5)	0.8 (0.1 6.2)	
	Rarely	0 (0)	2 (5)	2 (3)		
Use of alcohol-based hand rub or soap and water after touching a patient's surroundings?	Always as recommended	24 (65)	20 (53)	44 (59)	Ref	0.5
	Most of the time	11 (30)	14 (37)	25 (33)	0.7 (0.2 1.8)	
	Occasionally	2 (5)	2 (5)	4 (5)	0.8 (0.1 6.5)	
	Rarely	0 (0)	2 (5)	2 (3)		
Practice of all 5 hand washing moments	Yes	24 (65)	20 (53)	44 (59)	1.7 (0.7 4.2)	0.3
Follow IPC standard precautions when in contact with any patient	Always according to risk assessment	17 (46)	16 (44)	33 (45)	Ref	0.9
	Most of the time	14 (38)	12 (33)	26 (36)	1.1 (0.4 3.1)	
	Occasionally	5 (14)	7 (19)	12 (16)	0.7 (0.2 2.6)	
	I don't know what standard precautions are	1 (3)	1 (3)	2 (3)		
Do you wear PPE when indicated	Always, according to risk assessment	12 (31)	15 (37)	27 (34)	Ref	0.6
	Most of the time according to risk assessment	7 (20)	11 (29)	18 (25)	0.8 (0.2 2.8)	
	Occasionally	4 (11)	4 (11)	8 (11)	1.3 (0.3 6.3)	
	Rarely	13 (37)	9 (24)	22 (30)	1.8 (0.6 5.9)	
Is PPE available in sufficient quantity in the health care facility	No	25 (68)	27 (74)	52 (70)	Ref	0.9
	Yes	6 (14)	4 (11)	10 (12)	1.4 (0.3 5.6)	
	I don't know	7 (19)	6 (16)	13 (18)	1.3 (0.4 4.3)	



**Figure 1:** Flowchart of the study participants, Nakonde, 2020