

Supplemental Table 1. Access to personal protective equipment (PPE) and odds ratios of Covid-19 like illness in exposed healthcare workers

	OR (95% CI)	P-value	P-trend
Access to PPE All Countries combined* (N=2884 total; 568 cases (20%)):			<0.0001
Nonexistent (no access to at least one of the following: masks, face shields, gowns, and gloves) (n=17; 9 cases)	7.98 (2.86-22.31)	<0.0001	
Poor (little access to masks, face shields, gowns, and gloves) (n=288; 94 cases)	2.72 (1.91-3.87)	<0.0001	
Basic (access to at least one daily mask, face shield, gown, and gloves) (n=728; 162 cases)	1.86 (1.39-2.49)	<0.0001	
Good (I had access to a change of mask, gown, and gloves if soiled as well as a face shield) (n=1,141; 210 cases)	1.50 (1.14-1.97)	0.004	
Excellent (I had access to a fresh mask, gown, and gloves every time that I entered a new patient room as well as a face shield) (n=710; 93 cases)	Ref	--	
USA** (N=1061 total; 160 cases (15%))			0.0002
Nonexistent (n=5; 3 cases)	11.1 (1.71-72.3)	0.012	
Poor (n=70; 16 cases)	2.23 (1.10-4.49)	0.042	
Basic (n=298; 59 cases)	2.05 (1.25-3.37)	0.005	
Good (n=446; 54 cases)	1.21 (0.73-1.99)	0.45	
Excellent (n=242; 28 cases)	Ref	--	
UK** (N=327 total; 94 cases (29%))			0.0003
Nonexistent (n=2; 2 cases)	--	--	
Poor (n=18; 10 cases)	5.86 (1.93-17.8)	0.002	
Basic (n=62; 21 cases)	2.22 (1.05-4.67)	0.021	
Good (n=140; 41 cases)	1.69 (0.91-3.145)	0.100	
Excellent (n=105; 20 cases)	Ref	--	
Spain** (N=528 total; 146 cases (28%))			0.0002
Nonexistent (n=3; 2 cases)	22.9 (1.74-301)	0.017	
Poor (n=109; 42 cases)	3.49 (1.53-7.93)	0.003	
Basic (n=152; 47 cases)	2.56 (1.15-5.69)	0.021	
Good (n=197; 46 cases)	1.82 (0.82-4.04)	0.131	
Excellent (n=67; 9 cases)	Ref	--	
Italy** (N=433 total; 74 cases (17%))			0.015
Nonexistent (n=1; 1 case)	--	--	
Poor (n=46; 13 cases)	3.12 (1.36-7.15)	0.007	
Basic (n=82; 12 cases)	1.39 (0.63-3.07)	0.42	
Good (n=138; 30 cases)	2.32 (1.22-4.44)	0.010	
Excellent (n=165; 18 cases)	Ref	--	
Germany** (N=279 total; 46 (16%))			0.34
Nonexistent (n=1; 0 case)	--	--	
Poor (n=21; 6 cases)	2.80 (0.84-9.39)	0.106	
Basic (n=82; 12 cases)	1.08 (0.41-2.84)	0.95	
Good (n=111; 19 cases)	1.41 (0.58-3.43)	0.44	

Excellent (n=64; 9 cases)	Ref	--	
France** (N=256 total; 48 cases (19%))			0.19
Nonexistent (n=5; 1 case)	1.81 (0.17-19.22)	0.61	
Poor (n=24; 7 cases)	2.20 (0.69-7.03)	0.180	
Basic (n=51; 11 cases)	1.53 (0.56-4.19)	0.95	
Good (n=109; 20 cases)	1.36 (0.56-3.30)	0.49	
Excellent (n=67; 9 cases)	Ref	--	

* adjusted for age, gender, country, specialty, provider type, close exposure inside the workplace without PPE and close exposure outside of the workplace (N=568 cases and N=2316 controls).

** adjusted for age, gender, close exposure inside the workplace without PPE and close exposure outside of the workplace

We did not compare access to PPE Nonexistent vs Excellent due to limited number of cases (9 cases).

Supplementary Table 2. Covid-19 exposures and odds ratios of Covid-19 positive test (PCR or antibody) in exposed healthcare workers adjusting for age, gender, and country (N=2614).

	OR (95% CI)	P-value
Contact with Covid-19 patients in the workplace:		
Not very frequent (5-10% of my time)	Ref	--
Somewhat frequent (11-25% of my time)	1.13 (0.74-1.72)	0.58
Frequent (26-50% of my time)	1.51 (0.99-2.31)	0.056
Very frequent (51-75% of my time)	1.92 (1.24-2.97)	0.0036
Continuous (greater than 75% of my time)	1.92 (1.24-2.97)	0.0033
Close contact with any <i>suspected or confirmed</i> case of Covid-19 <i>inside</i> the workplace while <i>not wearing</i> Covid-recommended PPE		
	No Ref	--
	Not sure 1.42 (1.02-2.00)	0.041
	Yes 1.47 (1.12-1.94)	0.00064
Close contact with anyone <i>outside</i> the workplace with a confirmed diagnosis of Covid-19		
	No Ref	--
	Not sure 0.82 (0.59-1.15)	0.25
	Yes 1.73 (1.29-2.31)	0.0002

Supplementary Table 3. Workplace risk factors and odds ratios of positive Covid-19 test (PCR or antibody) in exposed healthcare workers adjusting for age, gender, and country and Model 2 age, gender, country, access to personal protective equipment (PPE) and close exposure to a Covid-19 case outside the workplace (N=2614).

	Model 1*	<i>p</i> -value	Model 2**	<i>p</i> -value
Number of shifts per week	1.11 (1.02-1.21)	0.012	1.10 (1.01-1.20)	0.022
Number of work hours per shift	0.98 (0.92-1.04)	0.53	0.99 (0.93-1.06)	0.80
Work hours per week	1.01 (1.00-1.02)	0.028	1.01 (1.00-1.02)	0.025
Been in the room of a <i>confirmed</i> Covid-19 patient during any of the following:				
CPAP or BiPAP	0.89 (0.69-1.15)	0.37	0.92 (0.71-1.19)	0.52
Nebulization	1.02 (0.78-1.32)	0.90	1.01 (0.77-1.32)	0.67
Intubation	0.74 (0.56-0.98)	0.038	0.77 (0.58-1.02)	0.069
CPR	1.08 (0.80-1.46)	0.62	1.07 (0.79-1.46)	0.66
None of the above	1.12 (0.87-1.46)	0.37	1.09 (0.84-1.41)	0.53

* Model 1 adjusted for age, gender, and country

** Model 2 adjusted for age, gender, country, access to personal protective equipment (PPE) and close exposure to a Covid-19 case outside the workplace.

Abbreviations: BiPAP, Bilevel positive airway pressure; CPAP, continuous positive airway pressure; CPR, cardiopulmonary resuscitation

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Supplemental Table 4. Access to personal protective equipment (PPE) and odds ratios of positive Covid-19 test (PCR or antibody) in exposed healthcare workers

	OR (95% CI)	P-value	P-trend
Access to PPE All Countries combined* (N=2614 total; 298 cases (11.4%)):			<0.0001
Nonexistent (no access to at least one of the following: masks, face shields, gowns, and gloves) (n=14; 3 cases)	5.37 (1.29-22.4)	0.021	
Poor (little access to masks, face shields, gowns, and gloves) (n=238; 50 cases)	2.46 (1.57-3.85)	<0.0001	
Basic (access to at least one daily mask, face shield, gown, and gloves) (n=650; 78 cases)	1.60 (1.09-2.35)	0.017	
Good (I had access to a change of mask, gown, and gloves if soiled as well as a face shield) (n=1,027; 114 cases)	1.46 (1.03-2.08)	0.035	
Excellent (I had access to a fresh mask, gown, and gloves every time that I entered a new patient room as well as a face shield) (n=657; 53 cases)	Ref	--	

*adjusted for age, gender, country, close exposure inside the workplace without PPE and close exposure outside of the workplace (N=298 cases and N=2316 controls).

Supplementary Table 5. Number of days, severity and type of Covid-19 symptoms (in those that tested positive by PCR or antibodies) in association with access to personal protective equipment in exposed Healthcare workers (N=298)^{1,2*}

	OR access to PPE Good vs Excellent	OR access to PPE Basic vs Excellent	OR access to PPE Poor vs Excellent	P-value trend
>14 days of symptoms	2.01 (0.74-5.49)	2.82 (0.99-8.07)	5.65 (1.84-17.4)	0.0008
Moderate to severe symptoms	2.93 (1.24-6.99)	2.52 (0.98-6.47)	4.95 (1.76-13.9)	0.038
Specific Covid-19 symptoms:				
Fatigue and Muscle Aches	0.77 (0.21-2.73)	1.20 (0.29-4.93)	0.73 (0.16-3.13)	0.65
Loss of taste or smell	1.16 (0.46-2.89)	3.32 (1.21-9.07)	2.46 (0.83-7.35)	0.028
Cough	1.55 (0.69-3.50)	1.70 (0.70-4.11)	1.69 (0.65-4.44)	0.54
Diarrhea	1.62 (0.65-4.04)	1.77 (0.66-4.70)	1.01 (0.34-3.04)	0.17
Nausea or Vomiting	1.16 (0.36-3.72)	4.35 (1.24-15.2)	3.41 (0.87-13.4)	0.056
Sore throat or Headache	2.19 (0.98-4.91)	3.76 (1.50-9.39)	2.55 (0.96-46.74)	0.016
Fever or Chills	2.11 (0.90-4.92)	1.88 (0.76-4.66)	2.41 (0.86-6.74)	0.216
Shortness of breath or difficulty breathing	1.36 (0.56-3.31)	1.65 (0.62-4.41)	2.91 (1.00-8.44)	0.18
Respiratory symptoms: Abnormal Chest X-ray, Low oxygen saturation, SpO2 <93% at rest, Respiratory distress, Respiratory rate ≥30 times/min, or acute lung injury	2.78 (0.59-13.1)	3.73 (0.72-19.3)	7.29 (1.37-38.7)	0.058

¹ *adjusted for age, gender, country, diabetes, pre-diabetes, overweight and high-risk exposure to an individual with Covid-19 outside of the workplace.

² Poor access to PPE was described as “little access to masks, face shields, gowns, and gloves.” Basic access was described as “access to at least one daily mask, face shield, gown, and gloves.” Good access to PPE was described as “I had access to a change of mask, gown, and gloves if soiled as well as a face shield.” Excellent access to PPE was described as “I had access to a fresh mask, gown, and gloves every time that I entered a new patient room as well as a face shield.”