

The Coronavirus Disease 2019 Pandemic's Effect on Critical Care Resources and Health-Care Providers

A Global Survey

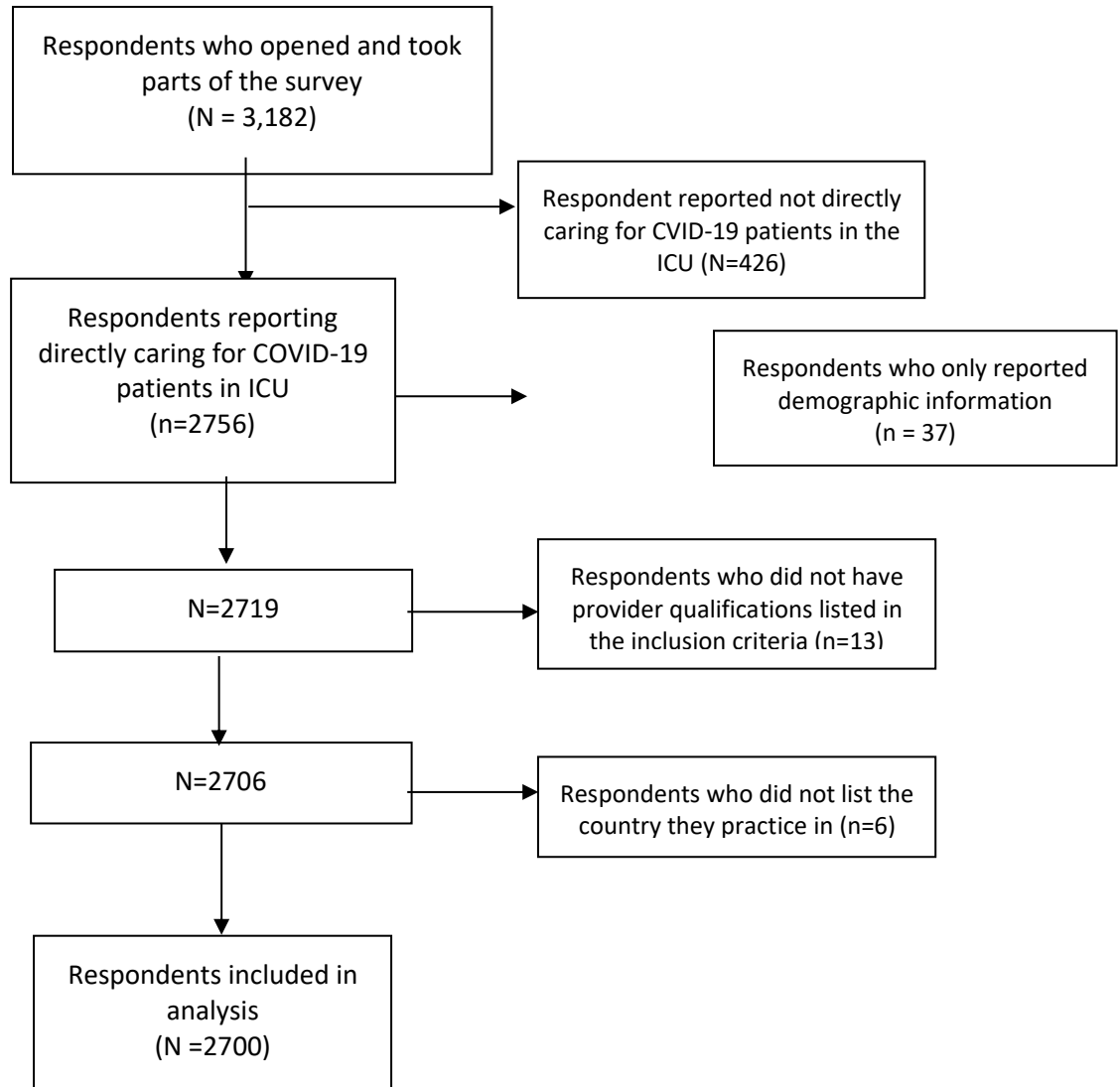
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e-Figure 1: Flow diagram of survey respondents



e-Table 1: Number of respondents per country, timing from COVID-19 peak and severity index by country_s

World Bank Region	Country	Number of respondents	Peak	Daily death/ population (* 1,000,000,000)	Severity index
East Asia & Pacific	Australia	88	0	57.5	1
	Hong Kong	3	2	0.0	0
	Indonesia	3	2	69.0	1
	Japan	104	1	131.2	2
	Malaysia	1	2	24.7	1
	Myanmar	3	0	1.2	0
	New Zealand	13	0	55.3	1
	Philippines	7	2	135.7	2
	Singapore	9	0	91.2	1
	South Korea	7	2	41.4	1
	Taiwan	1	0	0.0	0
	Thailand	3	2	4.8	0
	Vanuatu	1	NA		
Europe & Central Asia	Albania	1	0	92.7	1
	Austria	4	2	644.0	2
	Belgium	14	2	11073.1	3
	Bulgaria	1	1	307.0	2
	Czechia	13	2	373.5	2
	Denmark	7	2	1381.2	3
	Estonia	1	2	552.8	2
	Finland	7	1	998.7	2
	France	8	2	4212.0	3
	Germany	57	2	1445.8	3
	Greece	1	2	147.1	2
	Hungary	1	2	993.8	2
	Ireland	16	1	8222.3	3
	Italy	103	2	4861.5	3
	Luxembourg	1	2	1810.5	3
	Netherlands	10	2	4322.6	3
	Norway	18	2	282.8	2
Poland	1	1	530.2	2	
Portugal	4	2	1863.3	3	



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	Russia	8	0	488.8	2
	Slovenia	2	2	641.4	2
	Spain	29	2	5579.5	3
	Sweden	35	1	6726.6	3
	Switzerland	9	2	2010.5	3
	Turkey	8	1	909.0	2
	United Kingdom	271	2	8669.4	3
Latin America & Caribbean	Argentina	2	1	172.6	2
	Bolivia	1	0	337.0	2
	Brazil	6	0	1837.6	3
	Chile	11	1	408.0	2
	Colombia	2	0	251.6	2
	Costa Rica	2	0	0.0	0
	Cuba	1	0	176.6	2
	Dominican Rep.	2	2	408.1	2
	Ecuador	3	2	4133.8	3
	Honduras	1	0	390.4	2
	Jamaica	1	0	67.5	1
	Mexico	2	1	978.3	2
	Panama	2	1	1220.5	3
	Paraguay	1	0	9.3	0
	Peru	6	0	2133.1	3
	Turks and Caicos Islands	1	0	0.0	0
	Uruguay	1	0	96.0	1
Middle East & North Africa	Algeria	1	2	115.5	2
	Egypt	1	0	127.0	2
	Iran	34	2	797.7	2
	Israel	5	2	369.7	2
	Kuwait	3	0	468.3	2
	Lebanon	1	0	29.3	1
	Malta	1	1	301.7	2
	Oman	1	0	78.3	1
	Qatar	1	0	46.3	1
	Saudi Arabia	2	0	187.7	2
North America	Canada	40	1	4062.7	3
	United States of America	1653	2	5224.1	3
South Asia	Afghanistan	2	0	109.6	2

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	Bangladesh	3	0	29.1	1
	India	17	0	56.4	1
	Pakistan	5	0	105.0	2
Sub-Saharan Africa	Dem. Rep. Congo	1	0	11.2	1
	Ethiopia	1	0	0.6	0
	Kenya	1	0	18.6	1
	Nigeria	2	0	24.6	1
	South Africa	4	0	96.7	1

§ Peak was defined as mortality rates based on projections from IHME and JHU, using a 3 day rolling average (0: pre-peak, 1: during peak, 2: post-peak). The Severity Index is a logarithmic scale calculated as the daily death rate (averaging the cumulative deaths during survey distribution)/population * 10⁹ (0: 0-9, 1: 10-99, 2: 100-999, 3: 1000 and higher).

e-Table 2a: Number of countries in each peak category

Category	N countries	N responses
Pre-peak	33	186
Peri-peak	13	229
Post-peak	30	2259
Total	76	2674

e-Table 2b: Number of countries in each severity category

Category	N countries	N responses
Severity 1	8	15
Severity 2	18	153
Severity 3	31	247
Severity 4	19	2,259
Total	76	2674

e-Table 3: Specialization of respondents

	East Asia & Pacific (N=243)	Europe & Central Asia (N=630)	Latin America & Caribbean (N=45)	Middle East & North Africa (n=50)	North America (N=1696)	South Asia (N=27)	Sub-Saharan Africa (N=9)	Total (N=2700)
Specialization area, physicians only (N = 907)								
Critical Care Medicine	156 (86 %)	248 (84 %)	33 (97 %)	14 (48 %)	302 (89 %)	16 (70 %)	3 (50 %)	772 (85 %)
Pulmonology	14 (8 %)	8 (3 %)	1 (3 %)	7 (24 %)	194 (57 %)	1 (4 %)	0 (0 %)	225 (25 %)
Anesthesiology	38 (21 %)	181 (61 %)	2 (6 %)	5 (17 %)	17 (5 %)	2 (9 %)	3 (50 %)	248 (27 %)
Internal Medicine	14 (8 %)	20 (7 %)	4 (12 %)	3 (10 %)	51 (15 %)	7 (30 %)	0 (0 %)	99 (11 %)
Emergency Medicine	25 (14 %)	38 (13 %)	0 (0 %)	1 (3 %)	19 (6 %)	1 (4 %)	1 (17 %)	85 (9 %)
Specialization area, physicians in training only (N = 207)								
Critical Care Medicine	18 (86 %)	41 (68 %)	1 (50 %)	2 (18 %)	81 (74 %)	1 (33 %)	0 (0 %)	144 (69 %)
Pulmonology	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)	55 (50 %)	1 (33 %)	0 (0 %)	56 (27 %)
Anesthesiology	4 (19 %)	36 (60 %)	0 (0 %)	7 (64 %)	8 (7 %)	2 (67 %)	0 (0 %)	57 (27 %)
Internal Medicine	0 (0 %)	9 (15 %)	0 (0 %)	2 (18 %)	25 (23 %)	1 (33 %)	0 (0 %)	37 (18 %)
Emergency Medicine	6 (29 %)	7 (12 %)	1 (50 %)	0 (0 %)	5 (5 %)	1 (33 %)	0 (0 %)	20 (10 %)
Pediatrics	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)	6 (6 %)	0 (0 %)	2 (100 %)	8 (4 %)
Specialization area, nurses only (N = 1077)								
Medical ICU	23 (66 %)	156 (58 %)	0 (0 %)	4 (44 %)	560 (58 %)	1 (100 %)	0 (0 %)	744 (58 %)
Cardiac ICU	14 (40 %)	68 (25 %)	0 (0 %)	0 (0 %)	260 (27 %)	0 (0 %)	0 (0 %)	342 (27 %)
Neuro ICU	8 (23 %)	128 (47 %)	0 (0 %)	5 (56 %)	178 (18 %)	0 (0 %)	0 (0 %)	319 (25 %)
Surgical ICU	3 (9 %)	48 (18 %)	0 (0 %)	0 (0 %)	305 (31 %)	0 (0 %)	0 (0 %)	356 (28 %)
Non-ICU	0 (0 %)	61 (10 %)	0 (0 %)	0 (0 %)	120 (7 %)	0 (0 %)	1 (11 %)	182 (7 %)

e-Table 4: Provider responses by region (full table)[†]

	East Asia & Pacific (N=243)	Europe & Central Asia (N=630)	Latin America & Caribbean (N=45)	Middle East & North Africa (N=50)	North America (N=1696)	South Asia (N=27)	Sub-Saharan Africa (N=9)	Total (N=2700)
Perceived lack of ICU resources by region								
Shortages reported								
Intensivists	40 (18 %)	115 (20 %)	15 (37 %)	13 (29 %)	191 (12 %)	7 (30 %)	4 (50 %)	385 (15 %)
ICU Nurses	52 (24 %)	277 (47 %)	15 (37 %)	14 (31 %)	432 (27 %)	13 (57 %)	3 (38 %)	806 (32 %)
ICU beds	25 (13 %)	63 (13 %)	11 (34 %)	10 (29 %)	150 (11 %)	10 (50 %)	3 (50 %)	272 (13 %)
COVID-19 testing								
Limited to select patients	162 (76 %)	336 (58 %)	26 (67 %)	27 (61 %)	942 (61 %)	14 (61 %)	6 (75 %)	1513 (62 %)
Limited to select providers	141 (66 %)	407 (71 %)	26 (67 %)	27 (61 %)	1142 (74 %)	14 (61 %)	5 (62 %)	1762 (72 %)
Ordering requires hospital approval	97 (45 %)	257 (45 %)	20 (51 %)	24 (55 %)	584 (38 %)	11 (48 %)	2 (25 %)	995 (41 %)
PPE availability limited								
Gloves	22 (10%)	27(5%)	4 (11 %)	5 (11%)	4 (3%)	0 (0%)	2 (24%)	101 (4%)
Gowns	56 (26%)	133 (24%)	11 (29%)	16 (37%)	348 (24%)	8 (36%)	6 (75%)	578 (24%)
Surgical Mask	34 (16%)	70 (12%)	4 (10%)	6 (14%)	201 (14%)	1(5%)	4 (50%)	320 (13%)
Eye protection	95 (45%)	213 (38%)	18 (47%)	22 (51%)	561 (37%)	13 (59%)	7 (87%)	929 (39%)
Face Shield	117 (57%)	256 (45%)	20 (53%)	23 (54%)	627 (42%)	11 (50%)	6 (75%)	1050 (44%)
N95	127 (60%)	285 (53%)	17 (45%)	26 (61%)	877 (58%)	14 (64%)	6(75%)	1362 (57%)
PAPRs	80 (38%)	147 (27%)	9 (24%)	13 (31%)	825 (55%)	1 (5)	0 (0%)	1075 (46%)
Agreement with hospital PPE policy								

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Agree completely	96 (45 %)	204 (37 %)	22 (58 %)	19 (44 %)	406 (27 %)	13 (59 %)	2 (25 %)	762 (32 %)
Agree somewhat	91 (43 %)	248 (45 %)	15 (39 %)	16 (37 %)	689 (46 %)	7 (32 %)	3 (38 %)	1069 (45 %)
Disagree somewhat	20 (9 %)	82 (15 %)	0 (0 %)	5 (12 %)	252 (17 %)	2 (9 %)	2 (25 %)	363 (15 %)
Disagree completely	5 (2 %)	22 (4 %)	1 (3 %)	3 (7 %)	148 (10 %)	0 (0 %)	1 (12 %)	180 (8 %)
Ventilator supplies limited								
Mechanical ventilators	21 (10 %)	87 (17 %)	11 (31 %)	13 (34 %)	102 (7 %)	6 (27 %)	3 (43 %)	243 (11 %)
NIPPV	29 (14 %)	156 (30 %)	20 (57 %)	15 (38 %)	239 (17 %)	10 (45 %)	3 (43 %)	472 (21 %)
HFNC	29 (14 %)	189 (37 %)	15 (43 %)	14 (37 %)	271 (19 %)	9 (41 %)	0 (0 %)	527 (23 %)
Treatment strategies used for COVID-19 patients								
Proning	144 (59 %)	502 (80 %)	31 (69 %)	19 (38 %)	1373 (81 %)	16 (59 %)	4 (44 %)	2089 (77 %)
ECMO	74 (30 %)	187 (30 %)	5 (11 %)	11 (22 %)	671 (40 %)	1 (4 %)	1 (11 %)	950 (35 %)
Drugs under investigation	121 (50 %)	387 (61 %)	17 (38 %)	28 (56 %)	1208 (71 %)	17 (63 %)	4 (44 %)	1782 (66 %)
Renal replacement therapy	131 (54 %)	467 (74 %)	25 (56 %)	20 (40 %)	1106 (65 %)	14 (52 %)	4 (44 %)	1767 (65 %)
Changes in Resource Utilization and Provider Concerns								
Limiting mechanical ventilation	32 (16 %) (31 %)	161	7 (20 %)	13 (33 %)	140 (10 %)	7 (32 %)	2 (29 %)	362 (16 %)
CPR policy changes								
Unchanged	59 (29 %)	210 (41 %)	12 (34 %)	16 (41 %)	460 (32 %)	7 (32 %)	2 (29 %)	766 (34 %)
New policy implemented	83 (41 %)	198 (38 %)	11 (31 %)	12 (31 %)	547 (38 %)	5 (23 %)	2 (29 %)	858 (38 %)
No policy change but practice has changed	59 (29 %)	109 (21 %)	12 (34 %)	11 (28 %)	421 (29 %)	10 (45 %)	3 (43 %)	625 (28 %)
CPR in COVID-19 patients								

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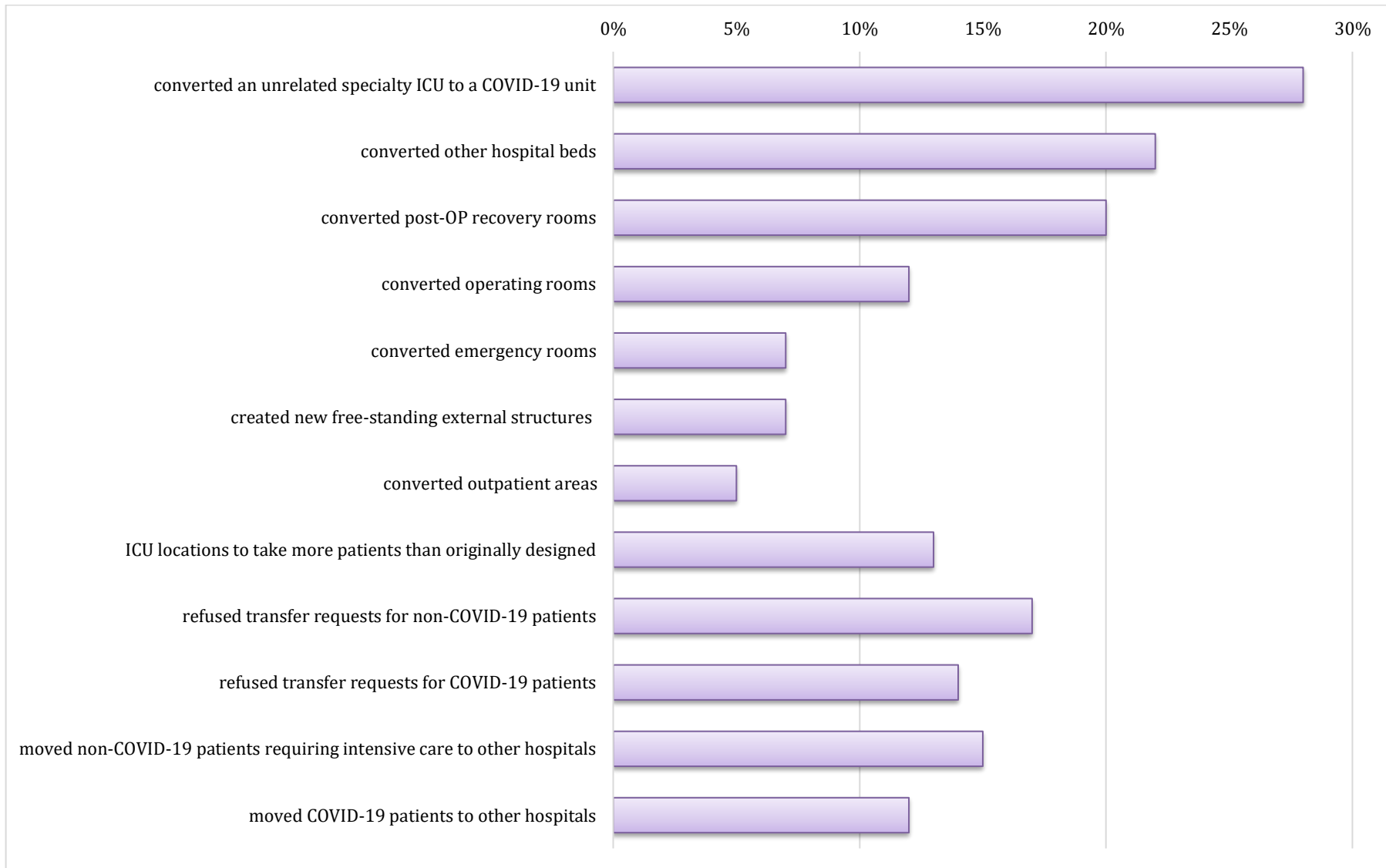
Not performed	18 (9 %)	19 (4 %)	7 (20 %)	4 (10 %)	17 (1 %)	5 (23 %)	4 (57 %)	74 (3 %)
Physicians determine	123 (61 %)	368 (71 %)	21 (60 %)	22 (56 %)	450 (32 %)	15 (68 %)	3 (43 %)	1002 (45 %)
Families determine	60 (30 %)	130 (25 %)	7 (20 %)	13 (33 %)	961 (67 %)	2 (9 %)	0 (0 %)	1173 (52 %)
Allow families to participate in critical decisions for COVID-19 patients								
More than other ICU patients	14 (7 %)	17 (3 %)	1 (3 %)	5 (13 %)	74 (5 %)	4 (18 %)	3 (43 %)	118 (5 %)
Same as other ICU patients	165 (82 %)	386 (75 %)	24 (71 %)	25 (64 %)	1189 (84 %)	13 (59 %)	3 (43 %)	1805 (81 %)
Less than other ICU patients	21 (10 %)	112 (22 %)	9 (26 %)	9 (23 %)	155 (11 %)	5 (23 %)	1 (14 %)	312 (14 %)
Palliative care consults for COVID-19 patients								
> 50% of patients	9 (5 %)	31 (6 %)	1 (3 %)	5 (14 %)	411 (30 %)	1 (5 %)	1 (17 %)	459 (21 %)
< 50% of patients	42 (22 %)	111 (22 %)	9 (26 %)	4 (11 %)	416 (31 %)	0 (0 %)	2 (33 %)	584 (27 %)
Do not consult palliative care	83 (44 %)	249 (50 %)	11 (32 %)	15 (43 %)	105 (8 %)	7 (35 %)	1 (17 %)	471 (22 %)
No palliative care specialists available	19 (10 %)	59 (12 %)	9 (26 %)	7 (20 %)	48 (4 %)	11 (55 %)	2 (33 %)	155 (7 %)
Not sure	36 (19 %)	48 (10 %)	4 (12 %)	4 (11 %)	376 (28 %)	1 (5 %)	0 (0 %)	469 (22 %)
Palliative care consults								
More than prior to pandemic	6 (12 %)	26 (18 %)	3 (30 %)	3 (33 %)	371 (45 %)	1 (100 %)	1 (33 %)	411 (39 %)
Provider concerns								
Emotional distress and burnout	73 (30 %)	305 (48 %)	19 (42 %)	22 (44 %)	974 (57 %)	9 (33 %)	3 (33 %)	1405 (52 %)
Worried about infecting family at home	122 (50 %)	345 (55 %)	21 (47 %)	25 (50 %)	1119 (66 %)	17 (63 %)	5 (56 %)	1654 (61 %)
Worried about own health	10 (31 %)	80 (50 %)	3 (43 %)	5 (38 %)	91 (65 %)	6 (86 %)	1 (50 %)	196 (54 %)
Social stigma from community	37 (15 %)	91 (14 %)	6 (13 %)	7 (14 %)	434 (26 %)	4 (15 %)	0 (0 %)	579 (21 %)
Feel that hospital unable to keep me safe	36 (15 %)	107 (17 %)	7 (16 %)	7 (14 %)	433 (26 %)	6 (22 %)	2 (22 %)	598 (22 %)

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Poor communication from supervisors	30 (12%)	134 (21%)	3 (7%)	8 (16%)	366 (22%)	4 (15%)	2 (22%)	547 (20%)
Worries about financial situation	20 (8%)	36 (6%)	11 (24%)	6 (12%)	212 (13%)	6 (22%)	0 (0%)	292 (11%)
When not in the hospital, providers								
Live separately from family	24 (13 %)	70 (15 %)	5 (17 %)	9 (27 %)	148 (11 %)	3 (17 %)	0 (0 %)	259 (12 %)
Completely isolate from family	3 (2 %)	16 (3 %)	0 (0 %)	3 (9 %)	40 (3 %)	0 (0 %)	0 (0 %)	62 (3 %)
Partially isolate from family	33 (18 %)	51 (11 %)	5 (17 %)	8 (24 %)	230 (17 %)	3 (17 %)	1 (20 %)	331 (16 %)
Do not isolate but extra precautions	80 (44 %)	239 (50 %)	16 (53 %)	10 (30 %)	745 (56 %)	10 (56 %)	4 (80 %)	1104 (53 %)
No changes to before pandemic	40 (22 %)	102 (21 %)	4 (13 %)	3 (9 %)	170 (13 %)	2 (11 %)	0 (0 %)	321 (15 %)

e-Figure 2: Provider reported reactions to insufficient ICU beds



e-Table 5: Responses stratified by provider type.

	APP (N=212)	Doctor (N=907)	Doctor in training (N=207)	Nurse (N=1082)	RT (N=297)	Overall (N=2706)
Number of COVID-19 patients cared for						
< 10	67 (32 %)	420 (46 %)	62 (30 %)	487 (45 %)	92 (31 %)	1128 (42 %)
10 - 50	109 (51 %)	369 (41 %)	110 (53 %)	521 (48 %)	165 (56 %)	1275 (47 %)
> 50	36 (17 %)	118 (13 %)	35 (17 %)	73 (7 %)	40 (13 %)	302 (11 %)
Hospital setting						
Rural, <100 beds	4 (2 %)	10 (1 %)	2 (1 %)	24 (2 %)	9 (3 %)	49 (2 %)
Rural, ≥100 beds	6 (3 %)	32 (4 %)	3 (1 %)	76 (7 %)	15 (5 %)	133 (5 %)
Urban, no teaching, <200 beds	11 (5 %)	30 (3 %)	6 (3 %)	64 (6 %)	11 (4 %)	122 (5 %)
Urban, no teaching, ≥200 beds	26 (12 %)	86 (9 %)	8 (4 %)	197 (18 %)	36 (12 %)	353 (13 %)
Urban, teaching, <200 beds	10 (5 %)	54 (6 %)	5 (2 %)	53 (5 %)	9 (3 %)	131 (5 %)
Urban, teaching, ≥200 beds	155 (73 %)	695 (77 %)	183 (88 %)	666 (62 %)	217 (73 %)	1916 (71 %)
Gender						
Female	166 (78 %)	332 (37 %)	110 (53 %)	955 (88 %)	209 (70 %)	1773 (66 %)
Male	46 (22 %)	566 (62 %)	94 (45 %)	119 (11 %)	83 (28 %)	908 (34 %)
Non-binary	0 (0 %)	4 (0 %)	0 (0 %)	2 (0 %)	0 (0 %)	6 (0 %)
Not disclosed	0 (0 %)	5 (1 %)	3 (1 %)	6 (1 %)	5 (2 %)	19 (1 %)
Qualification						
ICU director	0 (0 %)	241 (27 %)	0 (0 %)	0 (0 %)	0 (0 %)	241 (9 %)
Attending Physician	0 (0 %)	666 (73 %)	0 (0 %)	0 (0 %)	0 (0 %)	666 (25 %)
Fellow/Resident	0 (0 %)	0 (0 %)	207 (100 %)	0 (0 %)	0 (0 %)	207 (8 %)
Nurse manager	0 (0 %)	0 (0 %)	0 (0 %)	53 (5 %)	0 (0 %)	53 (2 %)
Nurse	0 (0 %)	0 (0 %)	0 (0 %)	960 (89 %)	0 (0 %)	960 (35 %)
Clinical nurse specialist	0 (0 %)	0 (0 %)	0 (0 %)	69 (6 %)	0 (0 %)	69 (3 %)

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Advanced Practice provider	212 (100 %)	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)	212 (8 %)
Respiratory therapist	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)	297 (100 %)	297 (11 %)
Years in clinical practice						
Mean (SD)	11.4 (9.04)	18.2 (8.84)	5.26 (2.73)	11.2 (9.59)	13.4 (10.1)	13.3 (9.80)
Insufficient Intensivists	37 (19 %)	147 (17 %)	38 (20 %)	146 (15 %)	17 (6 %)	385 (15 %)
Insufficient Nurses	80 (41 %)	232 (27 %)	62 (32 %)	379 (38 %)	55 (21 %)	808 (32 %)
Insufficient Space	20 (12 %)	108 (14 %)	18 (11 %)	105 (13 %)	21 (10 %)	272 (13 %)
Agreement with PPE policy						
Agree completely	45 (25 %)	392 (48 %)	72 (39 %)	177 (19 %)	77 (31 %)	763 (32 %)
Agree somewhat	103 (56 %)	343 (42 %)	76 (41 %)	441 (47 %)	108 (44 %)	1071 (45 %)
Disagree somewhat	26 (14 %)	76 (9 %)	28 (15 %)	196 (21 %)	39 (16 %)	365 (15 %)
Disagree completely	9 (5 %)	10 (1 %)	10 (5 %)	127 (13 %)	24 (10 %)	180 (8 %)
Limiting Mechanical ventilation	22 (13 %)	155 (19 %)	35 (21 %)	120 (14 %)	30 (13 %)	362 (16 %)
CPR policy changes						
Unchanged	57 (34 %)	313 (39 %)	44 (26 %)	288 (33 %)	68 (29 %)	770 (34 %)
New policy implemented	63 (37 %)	290 (36 %)	78 (46 %)	312 (36 %)	115 (48 %)	858 (38 %)
No policy change but practice has changed	50 (29 %)	197 (25 %)	46 (27 %)	278 (32 %)	55 (23 %)	626 (28 %)
CPR practice						
None	3 (2 %)	45 (6 %)	4 (2 %)	21 (2 %)	2 (1 %)	75 (3 %)
Physicians determine	73 (43 %)	442 (55 %)	90 (54 %)	326 (37 %)	71 (30 %)	1002 (44 %)
Families determine	94 (55 %)	313 (39 %)	74 (44 %)	531 (60 %)	165 (69 %)	1177 (52 %)
Provider concerns						
Insufficient access to PPE	75 (35 %)	253 (28 %)	59 (29 %)	459 (42 %)	103 (35 %)	949 (35 %)
poor communication from my supervisors	44 (21 %)	111 (12 %)	35 (17 %)	289 (27 %)	68 (23 %)	547 (20 %)
Worries about my own health	91 (43 %)	323 (36 %)	88 (43 %)	556 (51 %)	140 (47 %)	1198 (44 %)
Worries about transmitting disease to my family	126 (59 %)	527 (58 %)	127 (61 %)	695 (64 %)	180 (61 %)	1655 (61 %)
Social Stigma from my community	40 (19 %)	105 (12 %)	44 (21 %)	308 (28 %)	83 (28 %)	580 (21 %)

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Emotional Distress and burnout	116 (55 %)	383 (42 %)	86 (42 %)	659 (61 %)	162 (55 %)	1406 (52 %)
No concerns	7 (3 %)	84 (9 %)	11 (5 %)	18 (2 %)	11 (4 %)	131 (5 %)
Living situation						
Live separately from my family	18 (11 %)	93 (12 %)	29 (19 %)	92 (12 %)	27 (13 %)	259 (12 %)
Completely isolate from family members at home	2 (1 %)	22 (3 %)	7 (4 %)	23 (3 %)	8 (4 %)	62 (3 %)
Partially isolate from family members at home	20 (12 %)	130 (17 %)	21 (13 %)	118 (15 %)	42 (20 %)	331 (16 %)
Don't isolate but take extra precautions	92 (57 %)	370 (50 %)	71 (46 %)	455 (57 %)	117 (54 %)	1105 (53 %)
Have not changed anything about my personal life	29 (18 %)	132 (18 %)	28 (18 %)	112 (14 %)	21 (10 %)	322 (15 %)

e-Table 6: List of Reported Institutions by country and number of respondents per institutions

Country	Institution	Number of Respondents
Australia	Austin Health	1
	Bendigo hospital	1
	Cabrini Private Hospital	1
	Eastern Health	1
	Fiona Stanley Hospital	1
	Port Macquarie base Hospital	1
	Launceston	1
	Monash Medical Centre	2
	Nepean Hospital	1
	Queensland Children's Hospital	1
	Royal Adelaide Hospital	3
	Royal Brisbane and Women's Hospital	1
	Royal Hobart Hospital	1
	Royal Melbourne Hospital	5
	Royal North Shore hospital	2
	Royal Prince Alfred Hospital, Sydney	1
The Children's Hospital at Westmead	1	
Wagga Wagga Base Hospital	1	
Austria	KABEG Klagenfurt	1
Bangladesh	Kuwait Moitry Bangladesh Friendship Hospital	1
	United Hospital	1
Belgium	Ghent University Hospital	3
	University Hospitals Leuven	1
Bolivia	Hospital de Japonés	1
Brazil	Hospital Brasilia	1
	Hospital Israelita Albert Einstein	1
	University of Sao Paola	1
Canada	Community hospital	1
	Hamilton Health Sciences	1
	Hopital Montfort	1
	Ross Memorial Hospital	1
	Sunnybrook Health Sciences Centre	1



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	Trillium Health Partners	1
Chile	Clinica Los Carrera Quilpue	1
Czechia	Charles University and General University Hospital Prague	2
Denmark	Roskilde	1
Dominican Rep.	Hospital General Docente de la Policía Nacional	1
Ecuador	Hospital Eugenio Espejo	2
Egypt	Mansoura	1
Estonia	Tartu University Hospital	1
Ethiopia	St. Paul's Hospital millennium medical college	1
Finland	Turku University Hospital	3
France	Centre Hospitalier Victor Dupouy Argenteuil	1
	ICU La Pitie-Salpetriere Hospital, Paris	1
	Lyon teaching hospital	1
	St Louis hospital	1
Germany	Evangelisches Stadtkrankenhaus Saarbrücken, Großherzog-Friedrich-Str. 44, 66111 Saarbrücken	1
	Klinikum rechts der Isar, TU München	1
	Luebeck	1
	UKSH	1
	Universitätsklinikum Freiburg	1
	University Hospital of Cologne	2
Honduras	Hospital Mario Rivas	1
Hungary	Péterfy Sándor hospital	1
India	AIIMS	1
	ESI hospital	1
	HOD	1
	P D Hinduja Hospital	1
Indonesia	Awal Bros Hospital	1
Iran	Alzahra University hospital	1
	Golestan universty of medical science	2
	Mazandaran University of medical sciences, school of medicine	1
	National Research Institute of Tuberculosis and Lung Disease	1
	Sabzevar medical univert	1
	Shahid chamran hospital	1
	SNMU	1
Ireland	CUH	1
	Mater Hospital Dublin	1



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	RCSI hospitals, Our Lady of Lourdes Drogheda	1
Israel	Carmel Medical Centre	1
	Tel Aviv medical center	1
Italy	AOU Modena neuro intensive care	1
	ASL BI	1
	ASL nord-ovest Toscana	1
	ASL VC	1
	ASST Papa Giovanni XXIII - Bergamo	1
	Azienda Ospedaliera Universitaria Integrata di Verona	1
	Cotugno Hospital	1
	Covid ICU AOU Policlinico Bari	1
	CSS	1
	Grosseto Tuscany	1
	Irccs multimedica sesto san giovanni Milano	1
	IRCCS Policlinico San Donato	1
	Mauro Scarlato Hospital Scafati (SA)	1
	OPBG	1
	Ospedale Maggiore Novara	1
	Padua Hospital	1
	Public Hospital G.B Grassi	1
	San Gerardo Hospital - Monza	3
	Sant'Orsola University hospital	1
	Siracusa	1
Treviglio Hospital ASSTBGOVEST	1	
Jamaica	University Hospital of the West Indies	1
Japan	Ehime University	1
	Gifu Prefectural General Medical Center	1
	Hokkaido	1
	japanese red-cross Ishinomaki hospital	1
	Jikei Kashiwa Hospital	1
	Kameda Medical Center	1
	Kimitsu Chuo Hospital	1
	Kobe University hospital	1
	Nagasaki University Hospital	1
	Nagoya University Hospital	1
	National Defense Medical College Hospital	1
	Sakai City Medical Center	1



	Shizuoka Children's Hospital	1
	St. Marianna University School of Medicine	1
	Takarazuka City Hospital	1
	Tokyo bay Urayasu-Ichikawa medical center	1
	University of Tokyo	1
	Wakayama Medical University Hospital	1
Kuwait	Ameri - Hospital	1
Malta	Mater dei hospital	1
Mexico	Hospital Juárez de México	1
Myanmar	ICU, Yangon General hospital, MyanmarHospita	2
Netherlands	Antonius hospital	1
	Gelre Hospitals	1
	OLVG Clinic, Amsterdam	1
	Radboudumc Nijmegen	1
New Zealand	Middlemore Hospital	1
	Northshore hospital	1
	PH	1
	Taranaki base hospital	1
Nigeria	Ahmadu Bello University Teaching Hospital Zaria	1
Norway	Gjøvik Hospital	1
	Haukeland University Hospital	1
	Oslo University Hospital	8
Oman	Royal Hospital	1
Pakistan	Liaquat National Hospital	1
	SIUT HOSPITAL	2
Peru	Almenara ICU	1
	Hospital cayetano heredia	1
	Hospital Edgardo Rebagliati Martins	1
	National Institute of Neurological Science	1
Philippines	Provincial Health Office	1
	The Medical City Hospital	1
Poland	University Hospital, Krakow	1
Portugal	Centro Hospitalar Universitario Sao Joao	1
	CHTMAD	1
	CHUSJ	1
Qatar	Hamad General Hospital	1
Russia	Mariin Hospital SPb	1



	Northern State Medical University	1
Saudi Arabia	Alhada military hospital	1
Singapore	CGH	1
South Africa	Tygerberg Hospital	2
	Asan Medical Center	1
	Chonbuk National University	1
	SAMSUNG SEOUL HOSPITAL	1
	Seoul National University Hospital	1
	Yonsei University Wonju Severance Christian Hospital	1
Spain	Clínica Diagonal - Esplugues - Spain	1
	CUN Pamplona	1
	Hospital Universitario Son Llatzer	1
	Hospital Costa del Sol	1
	Hospital de Huerca-Overa	1
	Hospital La Paz	2
	Hospital Puerta del Mar	1
	Hospital Universitario de Torre Vieja	1
	HOSPITAL UNIVERSITARIO SON LLATZER	1
	HUA	1
	Sweden	Nyköping
University Hospital Umeå, Intensive care		1
Switzerland	EOC La Carità	1
	Réseau hospitalier neuchâtelois	1
Thailand	chulalongkorn university	1
	HRH Mahachakri Sirindhorn Medical Center	1
Turks and Caicos Islands	Cheshire hall Medical center of Turks an Caicos	1
United Kingdom	Aberdeen Royal Infirmary	2
	Aneurin Bevan Health Board / Royal Gwent hospital, Newport	2
	Barts health	1
	BHR Nhs trust	1
	Critical care ta the Pruh, Kings health are trust	1
	Croydon university hospital	1
	Derriford hospital	1
	District General Hospital	2
	Ealing Hospital	1
Epsom and St Heliers	1	



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	ESNEFT	1
	Guy's & St Thomas NHS Foundation Trust	1
	Ipswich Hospital	2
	Kings college	1
	Maidstone Hospital, Kent	1
	National Hospital for Neurology & Neurosurgery	2
	Newcastle Hospitals NHS Trust	1
	Newcastle upon Tyne hospitals	1
	NHS Dumfries and Galloway	3
	North Bristol NHS Trust	3
	Nottingham university hospitals	1
	Oxford Hospital	1
	Royal Berkshire Hospital	1
	Royal Brompton hospital	1
	Scarborough Hospital, North Yorkshire, UK NHS Trust	1
	Sherwood forest NHS trust	1
	Southampton	1
	UCLH	1
	UHB	1
	Uhcw	1
	University College London	1
	University hospital of wales	1
	University Southampton General hospital	1
	Wrexham Maelor Hospital UK	1
United States of America	Advocate Christ Medical Center	1
	Advocate Illinois Masonic medical center	1
	Albany Medical Center	2
	Ascension Seton Medical Center Austin	1
	Asension Seton	1
	Astria sunnyside	1
	At Joseph Medical center	1
	Atrium Health	1
	Banner Casa Grande Medical Center	1
	Baptist Health Neurosurgery	1
	Baptist Hospital of Miami	1
	Baptist memorial Jackson	1
	Beaumont Health	1



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Beaumont Hospital	1
Beth Israel Deaconess Medical Center	2
Bethesda Covid hospital	1
Boston Children's Hospital	1
Brigham and Women's Hospital	9
Brigham Women's Faulkner	1
Bronson Methodist Hospital	2
Buffalo General	1
Cedars Sinai	1
CHLA	1
Christus st Patrick hospital	2
Christus St. Vincent regional medical center	1
Columbia University Medical Center	5
Covenant Healthcare	1
CVMC	1
Dartmouth-Hitchcock Medical Center	2
DCH Regional Medical Center in Tuscaloosa	1
Denver Health	1
detroit medical center	2
DHMC	1
Dignity Health St. Joseph's Hospital	1
Duke University Hospital	14
Durham Veterans Affairs Medical Center	1
Einstein Medical Center	1
El Camino Hospital	1
Emanuel hospital	1
Eskenazi Health	1
Evergreen Hospital ICU	2
Fairview	1
Fawcett Memorial Hospital	1
Flagstaff Medical Center	1
Gateway Regional Medical Center	1
Genesis Medical Center	1
Good Samaritan Hospital	3
Grady	1
Harborview Medical Center	21
Henry Ford Hospital	2



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HFAH	1
Highline Medical Center	1
HMH	1
Honor health	2
Hunter-Holmes McGuire VAMC	1
ICU/ hospital in Eau Claire WI	1
Indian Resevation	1
Inova Loudoun Hospital	2
Intermountain Medical Center	7
IU Health Methodist Hospital	5
Johns Hopkins Hospital	1
Kadlec Regional Medical Center	5
Kaiser Zion	1
Keck Hospital of USC	2
LAC+USC Medical Center	1
Lahey Hospital & Medical Center	2
Lake Norman Regional Medical Center	1
Lawrence General Hospital	1
LDS Hospital ICU	1
Legacy Emanuel	1
Legacy Good Samaritan Medical Center	1
Legacy Salmon Creek Hospital	3
Lehigh Valley Hospital- Cedar Crest	1
Loma Linda University Medical Center	1
LSU Health Sciences Center	2
M Health Fairview St. John's Hospital	1
Maine Medical Center	1
Massachusetts General Hospital	24
Mather Hospital	1
McGuire VA hospital, Richmind VA	1
McKay Dee Hospital, ICU	1
Mercy Hospital OKC	2
Mercy Hospital South	1
Mercy Medical Center	1
Methodist Hospital	1
Montefiore Medical Center	1
Mount Sinai	14



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MSTICU	1
MU Health	1
Multi care Tacoma General	1
Multicare Auburn Medical Center	1
Multicare Deaconess Hospital	1
Multicare Good Samaritan Hospital	3
MultiCare Health Systems	1
MUSC	1
National Jewish / St Joseph Hospital	7
National Jewish Health, Rose Medical Center	1
New York Presbyterian Columbia University	6
New york Presbyterian weill cornell	2
NKC	1
North Memorial	1
North Shore Medical Center Salem Hospital	1
North Shore University Hospital	1
Northern Westchester Hospital	1
Northside-Cherokee	1
Northwestern Memorial Hospital	5
Norwalk Hospital	7
NYP/Q	1
Nyu	1
NYUWinthrop	1
Ochsner/university	1
OHSU	2
Olive View-UCLA Medical Center	1
OMHC	1
ORMC	1
OSF Peoria	1
OSF St Mary Medical Center	1
OSFSFMC	1
Overlake	6
Palomar Medical Center Escondido CA	1
PCCM	1
Peacehealth Southwest	3
Phoebe Putney	1
PHSW	1



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Piedmont Atlanta	1
PRMCE	1
Providence Everett	1
Providence regional medical center	8
Providence Spokane Hospitals	1
Queens Medical Center	1
Regions Hospital	2
Rhode island hospital	1
Riverside university health system	1
Rush Oak Park Hospital	2
Rush university medical center	2
Rutgers NJMS	3
Sacred Heart Medical Center Riverbend	1
Saint Luke's Hospital of Kansas City	1
Salem Health Hospital	1
Samaritan Albany General Hospital	1
San Francisco VA Health Care System	1
Santa Monica-UCLA Medical Center	4
Scripps Green and Scripps Memorial La Jolla Hospitals	1
Seattle Childrens Hospital	1
Sentara	1
Shands Childrens Hospital	1
Sharp Memorial Hospital	2
Skagit Valley Hospital	1
South Eastern Indiana ICU	1
SSMHealth	1
St Anthony Hospital	1
St Johns Hospital	2
St Joseph Medical Center	5
St. Anthony Hospital	1
St. Clair Hospital	1
St. Luke's Hospital	1
St. Peter's hospital	1
Stanford	7
SUNY Downstate	1
SUNY Upstate	1
Swedish First Hill	10



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Swedish Cherry Hill	5
Swedish Edmonds	1
Tacoma General	1
Tempe St Lukes	1
Tuba city regional healthcare corporation	1
Tulane Medical Center	2
U of M Mott Children's Hospital	4
U. of New Mexico	1
UAB	1
UAMS	3
UC Davis	5
UCDMC	1
UCLA	29
UCLA Ronald Raegan	8
UCLA/LA County	1
UCONN Health John Dempsy	1
UCSD	4
UCSF	2
UIHC	2
UMass Memorial	1
UMCNO	1
UMMC	1
University of California, Davis	1
University of Cincinnati	2
University of Colorado	5
University of Iowa Hospitals and Clinic	1
University of Kouisville Hospital	1
University of Michigan	36
University of Minnesota	3
university of Mississippi Medical Center	1
University of New Mexico Hospital	4
University of Pennsylvania	3
University of Southern California	1
University of Utah	1
University of Vermont Medical Center	11
University of Virginia	1
University of Washington Montlake	3



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	UNMH	10
	UPMC	1
	URHCS	1
	Utah Valley Hospital	1
	UVM MEDICAL CENTER	13
	UW Valley medical center	2
	uwmc Northwest	1
	VA Portland Healthcare System	1
	VA Puget Sound HCS	1
	Valley medical center	2
	VCU Medical Center	12
	Virginia Mason Memorial Hospital	5
	Washington University in St.Louis	1
	Wellspan Chambersburg Hospital	1
	West Florida hospital	1
	West Penn Hospital	1
	WFBH Wilkes Medical	1
	Yale-New Haven Hospital	7
	ZSFG	1
	Ridgeview Medical Center	1
	Tufts	1
Uruguay	AMDM IAMPP	1

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COVID-19 3-S Full survey:

Electronic Link: <https://redcap.link/covid19.icu.survey>

Thank you for taking the survey below. Your participation is completely anonymous, and we will not record personal data.

Respondent information

1. Do you directly care for COVID-19 patients requiring intensive care?
 yes no (if no exclude)

2. I have personally cared for:

< 10

10-50

>50

COVID-19 patients in the ICU

3. What country do you practice in?
(drop down menu)

4. IF USA: state (drop down menu)

5. Institution: My primary clinical practice I work at is: (optional)

6. What is your gender? female male non-binary prefer not to say

7. What is your role at your hospital?

physician director of the ICU

attending physician/consultant

physician in training (resident/fellow)

nurse manager of the ICU

nurse

clinical nurse specialist/clinical nurse educator

advanced practice provider (nurse practitioner or physician assistant)

respiratory therapist

other: [free text]

8. As a physician, what is your area of specialization (check all that apply):

Critical Care Medicine/Intensivist

Pulmonology

Infectious Disease

Anesthesiology

Emergency Medicine

Cardiology

Nephrology

Internal Medicine

Family Medicine

Surgery

- Pediatrics
- Neurology
- Palliative Care
- other: [free text]

9. As a physician in training, what is your area of specialization (check all that apply):

- Critical Care Medicine/Intensivist
- Pulmonology
- Infectious Disease
- Anesthesiology
- Emergency Medicine
- Cardiology
- Nephrology
- Internal Medicine
- Family Medicine
- Surgery
- Pediatrics
- Neurology
- Palliative Care
- other: [free text]

10. What is your clinical nursing area of specialization (check all that apply):

- Intensive Care Unit
 - Medical
 - Cardiac
 - Pulmonary
 - Neurocritical Care
 - Trauma
 - Surgical
 - Burns
 - Pediatric
- Outside of Intensive Care Unit

11. Years in Clinical Practice (includes time in residency and fellowship): [enter number]

Staffing

12. Physician availability

At my hospital:

- we have an appropriate number of intensivists to care for all COVID-19 patients in the ICU (y/n)
- we have an appropriate number of intensivists to care for other patients requiring ICU care (y/n)

IF NO checked for question 12, ask

13. How does your hospital manage the shortage of intensivists (check all that apply)?

- non-intensivists care for COVID-19 patients in the ICU
- non-intensivists care for other patients requiring ICU
- COVID-19 patients have to be moved to other hospitals because of a shortage of intensivists

- other patients requiring ICU care have to be moved to other hospitals because of a shortage of intensivists
 other: [free text]

14. Nursing availability:

At my hospital:

- we have an appropriate number of ICU nurses to care for all COVID-19 patients in the ICU (y/n)
- we have an appropriate number of ICU nurses to care for all other patients requiring ICU care (y/n)

IF NO checked for question 14, ask

15. How does your hospital manage the shortage of ICU nurses (check all that apply)?

- ICU nurses are caring for patient populations outside of their usual practice
- non-ICU nurses are caring for COVID-19 patients due to a shortage of ICU nurses
- non-ICU nurses are caring for other patients requiring ICU care due to a shortage of ICU nurses
- ICU nurses must care for more patients than prior to the pandemic
- we contract traveler/agency nurses
- COVID-19 patients have to be moved to other hospitals because of a shortage of ICU nurses
- other patients requiring ICU care have to be moved to other hospitals because of a shortage of ICU nurses
- other: [free text]

Resources

16. Testing availability

In my hospital, testing for COVID-19 is available for:

- all patients
- select patients (specific symptoms or risk factors)
- no patients
- I do not know

17. In my hospital, testing for COVID-19 is available for:

- all health care personnel
- available for select health care personnel
(specific symptoms, risk factors, or working in high-risk areas)
- no health care personnel
- I do not know

18. In my hospital, testing can be ordered

- without any restrictions
- restricted to approval at hospital level
- restricted to approval at governmental level
- not available

19. Personal Protective Equipment

During the COVID-19 pandemic, my hospital provides

(options: always available, reserved for select providers, available based on patient characteristics, intermittently available based on supplies, not at all available):

- cloth mask

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- surgical mask
- high filtration N95 or greater efficiency mask (eg FFP2 or FFP3)
- dedicated eye protection
- face shield
- powered air purifying respirator (PAPR, CAPR)
- gown or plastic apron
- gloves

20. I feel that my hospital's policy and practices of using personal protective equipment is appropriate and safe for all health care workers:

- agree completely
- agree somewhat
- disagree somewhat
- disagree completely

21. Ventilators/oxygen supply: in the foreseeable to the near future (1-2 weeks) at my hospital, we have (check all that apply):

OPTIONS FOR EACH:

for all patients who need them, for select patients, not available, I don't know

- mechanical ventilators
- noninvasive positive pressure ventilation (BIPAP/CPAP)
- oxygen concentrator
- tank oxygen
- high flow nasal cannula

IF ventilators not available for all patients:

22. At my hospital, patients share ventilators yes no

23. At my hospital, we limit the use of invasive mechanical ventilation in COVID-19 patients to: yes no

IF checked yes in 22:

23. we limit the use of invasive mechanical ventilation to patients

(check all that apply)

- below a certain age
- without certain comorbidities
- with health insurance or financial means
- with a certain degree of clinical severity, e.g. SOFA score
- other limitations: [free text]

24. Cardiopulmonary resuscitation (CPR):

- Our hospital policy and practice about CPR and DNR has not changed from prior to COVID-19
- We have implemented a new policy about CPR and DNR for COVID-19 patients
- There has been no change in hospital policy, but clinical practice about CPR and DNR is different in COVID-19 patients

if checked 2 or 3, ask:

25.

- we don't perform CPR in our COVID-19 patients

- we perform CPR in select COVID-19 patients as determined by treating physicians
- we perform CPR in COVID-19 patients based upon patient or family wishes

IF checked option 2 or 3:

26. we limit the use of CPR to COVID-19 patients

- below a certain age
- without certain comorbidities
- with health insurance or financial means
- with a certain degree of clinical severity
- other [free text]

27. When critical decisions have to be made for COVID-19 patients around withholding or withdrawing life-sustaining treatments, we allow families/legal surrogates to participate in the shared decision making process:

- more
- same
- less

compared to other ICU patients

28. Which of the following management strategies have been used in critically ill COVID-19 patients at your hospital (check all that apply)?

- Proning
- ECMO
- Drugs under investigation
- Renal replacement therapy
- Other: [free text]

29. We are limiting the use of the following diagnostic tests and procedures in COVID-19 patients:

Matrix: not performed, performed in select cases, performed as prior to COVID-19, not available at my hospital, I do not know

- ultrasound
- cardiac echo
- CT
- MRI
- bronchoscopy
- thoracentesis
- paracentesis
- lumbar punctures
- electroencephalography

30. We consult palliative care specialists for

- More than half of our COVID-19 patients in the ICU
- Less than half of our COVID-19 patients in the ICU
- we don't consult palliative care in our COVID-19 patients in the ICU
- we don't have palliative care specialists in our hospital

If checked 1 or 2: This is

31.
 More Same Less
than we have consulted palliative care in our ICU before COVID
32. For other ICU patients in my hospital (presenting with conditions other than COVID-19), I have observed (check all that apply):
- delays in obtaining emergent tests
 - delays in emergent procedures
 - reduced availability of relevant specialists
 - reduced willingness of consulting specialists to see the patient
 - reduced nursing care
 - less frequent exams
 - less time with doctors
 - less time with nurses
 - less time with patients' families
 - less physical therapy
 - other [FREE TEXT]
32. For non-COVID-19 patients in my ICU, the pandemic has resulted in
- improved level of care
 - the same level of care compared to before
 - worse level of care

Space

33. With regards to intensive care beds:
- we have sufficient intensive care beds for our COVID-19 patients (y/n)
 - we have sufficient beds for other patients requiring intensive care beds (y/n)

IF checked no for either:

34. To create ICU beds we have converted (check all that apply):
- an unrelated specialty ICU to a COVID-19 unit and the specialty patients were relocated to other unit(s)
 - other hospital beds
 - operating rooms
 - emergency rooms
 - post-OP recovery rooms
 - outpatient areas
 - we have created new free-standing structures (such as external tents) to accommodate all patients
 - critical care beds to accommodate more patients than originally designed
35. Due to insufficient space, we have:
- moved COVID-19 patients to other hospitals
 - moved non-COVID-19 patients requiring intensive care to other hospitals
 - refused transfer requests for COVID-19 patients
 - refused transfer requests for non-COVID-19 patients

Clinical Education

36. Residents and fellows can opt out of participating in the care of patients with COVID-19
 yes no I don't know

37. Overall, at my hospital, the effect of the COVID-19 crisis on clinical education and training of residents and fellows is:
 positive no changes negative there are no residents or fellows at my hospital

38. Compared to before the COVID-19 pandemic, medical trainees (residents and fellows) at my hospital:

Matrix (more, same, less, no trainees)

- work with appropriate supervision from an attending physician
- are asked to make medical decisions that exceed their level of competence
- are reassigned to work in areas that are not their primary field they train in
- have formal teaching and didactics
- get opportunities to directly perform invasive procedures

Effects on health care professionals

39. At my hospital, caring for COVID-19 patients is
 optional, with possibilities to work in other areas
 optional, but forced to use vacation or decreases in salary if I opt out
 mandatory

40. My concerns in caring for COVID-19 patients are (check all that apply):
 insufficient access to personal protective equipment
 feeling as if my hospital is unable to keep providers safe
 poor communication from my supervisors
 worries about my own health
 carrying infection home to my family and community
 social stigma from my community outside of the hospital
 witnessing colleagues at my hospital contract COVID-19
 learning about other health care providers contracting COVID-19 in the news
 emotional distress and burnout
 no concerns
 other: [free text]

41. When not working in the hospital, I:
 live separately from my family to protect them
 completely isolate myself from family members living in my household
 partially isolate myself from family members living in my household
 do not isolate myself from family members but take extra precautions
 have not changed anything about my personal life at home

List of Critical Care Societies Distributing the Survey Link

World Federation of Intensive and Critical Care (WFICC), American Association of Critical Care Nurses (AACN), Australian & New Zealand Intensive Care Society (ANZICS), American Thoracic Society (ATS), British association of critical care nurses (BACCN), Bangladesh Society of Critical Care Medicine, Canadian Critical Care Society (CCCS), Deutsche Interdisziplinäre Vereinigung für Intensiv- und Notfallmedizin (DIVI), European Society of Intensive Care Medicine (ESICM – Ethics section), Russian Federation of Anesthesiologists and Reanimatologists (FAR), Japanese Society of Intensive Care Medicine, Neurocritical Care Society (NCS), Società Italiana di Anestesia Analgesia Rianimazione e Terapia Intensiva (SIAARTI), La Sociedad Española de Medicina Intensiva, Crítica y Unidades Coronarias (Semi-CYUC), Thai Critical Care Society.

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