



Cardiology Department Practices in the First Wave of the Coronavirus Disease Pandemic

— A Nationwide Survey in Japan by the Japanese Circulation Society—

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Supplement Table 1. COVID-19 Experienced Case Details

<i>How many COVID-19 cases have your department experienced as the following diagnosis? n (%)</i>		<i>How many COVID-19 cases did your department perform ECMO for the following indications? n (%)</i>	
Heart failure		Heart failure	
0	54 (43.5)	0	117 (94.4)
1	33 (26.6)	1	5 (4.0)
2-5	27 (21.8)	2-5	2 (1.6)
6-9	2 (1.6)		
10<=	8 (6.5)		
Acute coronary syndrome		Acute coronary syndrome	
0	99 (79.8)	0	123 (99.2)
1	13 (10.5)	2-5	1 (0.8)
2-5	4 (3.2)		
10<=	8 (6.5)		
Out of hospital cardiac arrest		Out of hospital cardiac arrest	
0	100 (80.6)	0	120 (96.8)
1	13 (10.5)	1	3 (2.4)
2-5	3 (2.4)	2-5	1 (0.8)
6-9	1 (0.8)		
10<=	7 (5.6)		
Pulmonary embolism		Pulmonary embolism	
0	112 (90.3)	0	122 (98.4)
1	3 (2.4)	1	1 (0.8)
2-5	1 (0.8)	2-5	1 (0.8)
6-9	3 (2.4)		
10<=	5 (4.0)		
Myocarditis		Myocarditis	
0	109 (87.9)	0	123 (99.2)
1	6 (4.8)	2-5	1 (0.8)
2-5	4 (3.2)		
6-9	2 (1.6)		
10<=	3 (2.4)		
Arrhythmia			
0	89 (71.8)		
1	19 (15.3)		
2-5	8 (6.5)		
10<=	8 (6.5)		
Myocardial injury (excluding coronary ischemia)			
0	99 (79.8)		
1	12 (9.7)		
2-5	5 (4.0)		
6-9	1 (0.8)		
10<=	7 (5.6)		
Others (including ARDS)		Others (including ARDS)	
0	54 (43.5)	0	97 (78.2)
1	37 (29.8)	1	18 (14.5)
2-5	25 (20.2)	2-5	7 (5.6)
6-9	2 (1.6)	6-9	2 (1.6)
10<=	6 (4.8)		

ARDS, acute respiratory distress syndrome; ECMO, extracorporeal membrane oxygenation

Supplement Table 2. Medical Resource Situation

	Total n= 773
Does your department experience the following medical resource shortage ?, n (%)	
<i>Human resource</i>	
Physician	294 (38.0)
Nurse	327 (42.3)
Other medical staff	212 (27.4)
On call/night shift staff in cardiology	131 (16.9)
<i>Material (especially personal protection equipment)</i>	
N95 mask	577 (74.6)
Face shield	534 (69.1)
Surgical mask	597 (77.2)
other personal protection equipment	463 (59.9)
Disinfection material (eg. low-level disinfectants such as quaternary ammonium compounds)	330 (42.7)
<i>Slots</i>	
Outpatient clinic (cardiology)	62 (8.0)
Electrocardiography	7 (0.9)
Echocardiography	16 (2.1)
Catheterization	38 (4.9)
<i>Medical device and facilities</i>	
Intensive care unit	151 (19.5)
Respirator	137 (17.7)
Extracorporeal Membrane Oxygenation (ECMO; including both venoarterial (VA) and venovenous (VV))	121 (15.7)
Dialysis circuit	37 (4.8)
Which of the following situation about re-use is applicable for each PPE in your department?, n (%)	
<i>Surgical mask</i>	
Reusing daily	368 (47.6)
Reuse per each health care provider	191 (24.7)
Waste every use	161 (20.8)
Reuse per patient	35 (4.5)
Unknown	18 (2.3)
<i>Face shield</i>	
Reusing daily	129 (16.7)
Reuse per each health care provider	192 (24.8)
Waste every use	214 (27.7)
Reuse per patient	104 (13.5)
Unknown	134 (17.3)
<i>N95</i>	
Reusing daily	135 (17.5)
Reuse per each health care provider	224 (29.0)
Waste every use	201 (26.0)
Reuse per patient	98 (12.7)
Unknown	115 (14.9)
<i>Medical apron</i>	
Reusing daily	71 (9.2)
Reuse per each health care provider	31 (4.0)
Waste every use	450 (58.2)
Reuse per patient	125 (16.2)

Unknown	96 (12.4)
<i>Gown</i>	
Reusing daily	69 (8.9)
Reuse per each health care provider	36 (4.7)
Waste every use	455 (58.9)
Reuse per patient	130 (16.8)
Unknown	83 (10.7)

* is for P value < 0.05

Supplement Table 3. Factors Associated With Restriction of Cardiovascular Procedures; Generalized Estimating Equations Model[†]

Variables, OR (95%CI)	Out Pt	ER	Echo for Out Pt	Echo for In Pt	TEE	CT/MRI	Cath	Ablation	TM	CPX	Group Ex	Op
<i>Hospital variables</i>												
The presence of cardiologist in COVID-19 team.	1.48 [1.03-2.14]*	0.96 [0.61-1.51]	1.74 [1.15-2.62]*	1.32 [0.83-2.09]	1.91 [1.4-2.61]*	1.91 [1.4-2.61]*	1.49 [1.1-2.02]*	1.23 [0.88-1.73]	1.54 [1.08-2.19]*	1.57 [1.11-2.21]*	1.51 [1.03-2.2]*	1.27 [0.89-1.81]
COVID-19 case experiences	1.26 [0.73-2.2]	1.36 [0.82-2.23]	1.23 [0.73-2.08]	1.33 [0.69-2.54]	1.22 [0.81-1.83]	1.22 [0.81-1.83]	1.26 [0.84-1.88]	1.26 [0.79-2.03]	0.88 [0.55-1.43]	1.16 [0.74-1.81]	1.72 [1.08-2.73]*	1.7 [1.08-2.68]*
Any medical resource shortage	1.97 [0.71-5.46]	3.42 [0.78-14.86]	7.97 [1.07-59.45]*	5.15 [0.69-38.67]	1.92 [0.78-4.7]	1.92 [0.78-4.7]	1.95 [0.91-4.19]	1.93 [0.81-4.59]	2.57 [0.71-9.29]	1.12 [0.5-2.52]	1.61 [0.69-3.75]	3.12 [0.93-10.49]
The number of board-certified cardiologists (Higher vs Lower:ref)	0.86 [0.52-1.4]	1.34 [0.83-2.16]	1.66 [1.04-2.63]*	1.54 [0.83-2.85]	2.14 [1.46-3.15]*	2.14 [1.46-3.15]*	1.86 [1.3-2.66]*	3.33 [2.21-5.01]*	2.17 [1.41-3.34]*	2.1 [1.36-3.24]*	2.04 [1.33-3.12]*	2.21 [1.41-3.48]*
Total hospital beds (T2 vs T1: ref)	0.9 [0.52-1.55]	0.34 [0.18-0.62]*	0.93 [0.5-1.72]	0.99 [0.43-2.28]	1.1 [0.7-1.74]	1.1 [0.7-1.74]	1.84 [1.19-2.86]*	0.78 [0.46-1.3]	0.6 [0.34-1.06]	1.01 [0.59-1.73]	0.86 [0.48-1.52]	1.29 [0.71-2.33]
Total hospital beds (T3 vs T1: ref)	1.15 [0.54-2.43]	0.34 [0.17-0.67]*	1.32 [0.61-2.85]	1.66 [0.58-4.74]	1.57 [0.9-2.76]	1.57 [0.9-2.76]	1.79 [0.97-3.28]	1.05 [0.55-1.98]	0.74 [0.37-1.47]	0.74 [0.37-1.46]	0.73 [0.35-1.5]	1.57 [0.78-3.2]
Total number of physicians (Higher half vs lower half: ref)	1.35 [0.77-2.35]	2.06 [1.09-3.91]*	1.29 [0.68-2.41]	1.51 [0.67-3.39]	1.55 [1-2.41]*	1.55 [1-2.41]*	1.07 [0.67-1.71]	2.04 [1.24-3.34]*	1.58 [0.87-2.86]	2.13 [1.28-3.53]*	1.56 [0.93-2.61]	1.16 [0.68-1.97]
Designated medical institution for infectious disease	0.82 [0.53-1.27]	1.09 [0.65-1.82]	0.95 [0.56-1.61]	0.61 [0.33-1.13]	0.77 [0.53-1.14]	0.77 [0.53-1.14]	1.22 [0.85-1.75]	0.7 [0.45-1.1]	0.95 [0.57-1.58]	0.7 [0.44-1.13]	0.9 [0.57-1.44]	0.89 [0.52-1.53]
<i>Prefecture variables</i>												
The number of cases in each prefecture (T2 vs T1: ref)	1.16 [0.67-1.98]	1.18 [0.68-2.04]	0.52 [0.27-1.02]	0.54 [0.28-1.08]	0.59 [0.37-0.95]*	0.59 [0.37-0.95]*	0.77 [0.5-1.19]	0.46 [0.27-0.79]*	0.92 [0.49-1.74]	0.62 [0.35-1.09]	0.95 [0.54-1.67]	0.61 [0.34-1.11]
The number of cases in each prefecture (T3 vs T1: ref)	0.36 [0.16-0.83]*	1.61 [0.64-4.07]	0.3 [0.11-0.8]*	0.37 [0.12-1.13]	0.45 [0.21-0.96]*	0.45 [0.21-0.96]*	0.78 [0.39-1.54]	0.41 [0.18-0.95]*	0.57 [0.22-1.48]	0.41 [0.18-0.94]*	0.43 [0.18-1.03]	0.46 [0.18-1.19]
State of emergency	2.1 [1.18-3.75]*	0.95 [0.44-2.03]	2.82 [1.24-6.45]*	1.66 [0.67-4.07]	2.65 [1.49-4.7]*	2.65 [1.49-4.7]*	2.69 [1.59-4.55]*	3.37 [1.69-6.73]*	2.94 [1.4-6.14]*	2.74 [1.43-5.26]*	2.88 [1.45-5.72]*	2.74 [1.29-5.84]*

OR, odds ratio; CI, confidence interval; T1, first tertile; T2, second tertile; T3, third tertile; ref, reference. Out Pt, Outpatient clinic; ER, Emergency room; Echo for Out Pt, Echocardiography for outpatients; Echo for In Pt, Echocardiography for inpatients; TEE, Transesophageal echocardiography; CT/MRI, Computed tomography/Magnetic resonance imaging in cardiology; Cath, Scheduled catheterization (coronary, peripheral, and right heart catheterization); Ablation, Scheduled catheterization (ablation therapy); TM, Treadmill; CPX, Cardiopulmonary exercise testing; Group Ex, Group exercise therapy; Op, Scheduled operation. * is for P value < 0.05. †multivariate analysis adjusted by using propensity score for questionnaire response.