SUPPLEMENTAL MATERIAL

Supplemental Table 1. Data collected by each contributing site

Institution	
Patient Number at Center	
1. Covid-19 Test Result	0, Negative; 1, Positive
2. Age	Years
3. Gender	0, Male; 1, Female; 2, Transgender Male; 3, Transgender Female; 4, Other
4. Race/Ethnicity	0, White Non-Hispanic; 1, Black Non-Hispanic; 2, Hispanic; 3, Asian; 4, American Indian; 5, Other
5. Medical Diagnoses	Select all that apply: 0, HTN; 1, DM; 2, CHF; 3, CAD; 4, MI; 5, Cardiomyopathy; 6, Vascular Disease 7, Stroke; 8, Renal Failure; 9, Lung disease
6. Height	Centimeters
7. Weight	Kilograms
8. On Ventilator at any point	0, No; 1, Yes
9. Admission Date	MM/DD/YYYY
10. Length of stay	Days
11. Vital Status	0, Dead; 1, Alive
12. Death Rhythm	0, VF; 1, VT; 2, Heart block; 3, Sinus Bradycardia; 4, Unspecified Bradycardia; 5, PEA; 6, Asystole;

	7, Unspecified; 8, Not monitored
13. History of arrhythmia prior to admission	Select all that Apply: 0, Atrial Fibrillation or Atrial Flutter 1, Ventricular Tachycardia 2, Supra-ventricular tachycardia 3, AV block; 4, Bradycardia; 5, Other arrhythmias
14. Arrhythmias at any time during admission	Select all that Apply: 1, APCs; 2, AF; 3, AF; 4, AT; 5, PVC; 6, NSVT; 7, sustained VT; 8, AV Block; 9, sinus bradycardia 40bpm or less; 10, sinus pauses 3 sec or more
15. Polymorphic VT or Torsade de Pointes	0, No; 1, Yes
16. Medications or other factors present during polymorphic VT or torsade de pointes	Select all that Apply: 0, None; 1, Hydroxychloroquine; 2, Chloroquine; 3, Azithromycin; 4, Inotropes
17. Other factors present during polymorphic VT or torsade des pointes	Select all that Apply: 0, None; 1, Potassium < 3.5 mmol/L; 2, Systolic BP < 90; 3, ECMO; 4, Ventilated; 5, Oxygen Saturation < 90%; 6, LVEF< 50%; 7, Troponin above normal
18. Likely association with polymorphic VT or torsade des pointes:	Select all that Apply: 0, None; 1, Ischemia/myocarditis; 2, ARDS/hypoxemia; 3, Hypotension; 4, Acidosis/renal failure; 5, QT prolongation
19. Sustained monomorphic VT	0, No; 1, Yes

20. Medications or other factors present during monomorphic VT	Select all that Apply: 0, None; 1, Hydroxychloroquine; 2, Chloroquine; 3, Azithromycin; 4, Inotropes
21. Other factors present during monomorphic VT	Select all that Apply: 0, None; 1, Potassium < 3.5 mmol/L; 2, Systolic BP < 90; 3, ECMO; 4, Ventilated; 5, Oxygen Saturation < 90%; 6, LVEF< 50%; 7, Troponin above normal
22. Likely association with monomorphic VT	Select all that Apply: 0, None; 1, Ischemia/myocarditis; 2, ARDS/hypoxemia; 3, Hypotension; 4, Acidosis/renal failure; 5, QT prolongation
23. Sinus bradycardia 40 bpm or less, or sinus pauses 3 sec or more	0, No; 1, Yes
24. Medications or other factors present during bradycardia/pause	Select all that Apply: 0, None; 1, Hydroxychloroquine; 2, Chloroquine; 3, Azithromycin; 4, Lopinavir/ritonavir; 5, Favipiravir; 6, Remdesivir
25. Other factors present during bradycardia/pause	Select all that Apply: 0, None; 1, Potassium < 3.5 mmol/L; 2, Systolic BP < 90; 3, ECMO; 4, Ventilated; 5, Oxygen Saturation < 90%; 6, LVEF< 50%; 7, Troponin above normal
26. Baseline LVEF	Echo prior to admission (within 2 years) (%)
27. Last LVEF obtained during admission	(%)

28. QTc on ECG at admission	(ms)
29. Max QTc during admission	(ms)
30. Did the max QTC occur on hydroxychloroquine	0, No; 1, Yes
31. Did the max QTC occur on azithromycin	0, No; 1, Yes
32. Cardiac device implanted	0, No device; 1, PPM; 2, ICD
33. Device number of chambers	0, Single chamber 1, Dual chamber; 2, BiV
34. Hydroxychloroquine at any time during admission	0, No; 1, Yes
35. Azithromycin at any time during admission	0, No; 1, Yes
36. Opioids at any time during admission	0, No; 1, Yes
37. Quinolones at any time during admission	0, No; 1, Yes
38. Amiodarone at any time during admission	0, No; 1, Yes
39. Sotalol at any time during admission	0, No; 1, Yes
40. Other AAD at any time during admission	0, No; 1, Yes
41. Antiviral At any time during admission (lopinavir, ritonavir, remdesivir, oseltamivir, favipiravir)	0, None; 1, Lopinavir / ritonavir; 2, Favipiravir; 3, Remdesivir 4, Oseltamivir
42. IL-6 inhibitor at any time during admission	0, No; 1, Yes
43. ACEi/ARB at any time during admission	0, No; 1, Yes
44. Statins at any time during admission	0, No; 1, Yes
45. Anticoagulation at any time during admission	0, No; 1, Yes

Supplemental Table 2. PPE used and changes in EP case volume around the world

Asia			PPE Used	EP case volume change
China	Wuhan	Wuhan Asia Heart Hospital	Disposable gown, protective suit, goggles and face shield, 2 layers gloves, 2 layers shoe cover. If high risk procedures, protective suit with PPE for 8-12 hour shifts	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
Hong Kong	Hong Kong	Hospital Authority of Hong Kong	N95 mask, disposable gown, face shield and gloves	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
Iran	Tehran	Tehran University of Medical Sciences	PPE was short during February and first week of March, but was subsequently sufficient due to assistance from charities.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
Japan	Tokyo	Kyorin University School of Medicine	N95 mask, face shield, gown, shoe cover, and gloves.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
Malaysia	Taiping	Taiping Hospital	N95 mask, disposable gown, face shield, gloves and boot covers.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
South Korea	Daegu	Keimyung University Dongsan Hospital	N95, K80, K94 masks were used, in addition to disposable gown, face shield, gloves and boot covers.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed.

				Elective procedures were cancelled.
Europe				
Italy	Ancona	Marche Polytechnic University - University Hospital 'Ospedali Riuniti'	FFP2 or FFP3 masks, caps, disposable gown, shoe covers, and gloves.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. There was a 50% decrease in weekly EP procedures compared to the 6 months prior to the pandemic.
Italy	Bergamo	ASST Papa Giovanni XXIII	FFP2/KN95 masks and disposable hat, gloves and vests.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. There was a 95% decrease in ablations and 50-60% decrease in device implantation and replacement.
Italy	Milan	San Luca Hospital	FFP2 masks with gloves, gown, and eye protection. PPE was not reused	Fully converted to COVID Hospital, zero cardiovascular procedures were performed.
Italy	Modena	University of Modena and Reggio Emilia	Surgical mask and gloves then transitioned to FFP2 mask, disposable gown, gloves, and eye protection	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
Italy	Padova	University of Padova	FFP2 masks	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled. There were 30% fewer pacemaker implants compared to 2019.
Italy	Parma	University Hospital of Parma	KN95 or FFP2 masks, goggles or face shield, non-absorbent gown, cap, shoe covers,	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for

			double layered gloves. PPE was not re-used.	endocarditis were performed. Elective procedures were cancelled, with an 80-90% reduction in volume.
Italy	Siena	University of Siena - Azienda Ospedaliera Universitaria Senese	FFP2 or FFP3 masks, aprons, gowns, goggles, caps, face shield, and 3 layers of gloves. PPE was not re-used.	EP procedures decreased 60% compared to the same period in 2019, with 60% decrease in pacemaker implantation, 50% decrease in implantable cardioverter defibrillator (ICD) implantation, and 74% decrease in ablations.
Spain	Léon	University of Léon	At first PPE was plastic bags basically and protective masks. As the weeks went by, the PPE supply increased, and was based on protective masks (FFP2) and disposable gowns were worn. PPE was reused.	There was a 40% decrease in the number of urgent pacemaker device implantation. All programmed interventions were cancelled, and no EP studies were performed during this period.
Spain	Madrid	Hospital General Universitario Gregorio Marañón	In the ICU, PPE were always available. In the rest of the hospital, equipment was at time re-used, especially face masks and shields.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
Switzerland	Basel	University Hospital	FFP2 or FFP3 masks, disposable gown and gloves, protective glasses, and surgical hood were worn. Masks and hoods were re-used, with masks used for up to 1 week at the start of the pandemic.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
Switzerland	Lugano	Fondazione Cardiocentro Ticino	Surgical mask, goggles, gown, gloves. For intubated patients or aerosol-generating procedure, FFP2 masks and face shields were	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.

			used. Non-intubated patients wore masks.	
United Kingdom	London	Imperial College Healthcare NHS Trust	FP3 masks, face shield, gown, gloves were worn. PPE was not re-used.	Emergent device cases such as high-degree heart block, generator changes and device related infections were performed. Ablations were performed on symptomatic WPW and tachycardia induced heart failure. Elective procedures were all cancelled.
North America				
Mexico	Mexico City	UMAE Hospital de Especialidades Centro Médico Nacional La Raza IMSS	N95 masks, safety glasses/face shields, protective coveralls, caps, gowns, boots, and gloves were used.	There was a 50% decrease in pacemaker implantation and 70% decrease in ICD and percutaneous lead extraction. There was an 80% reduction in atrial fibrillation ablations and atrial mapping and 50% reduction in conventional ablations.
USA	Dallas, TX	University of Texas, Southwestern	N95 masks, disposable gowns, gloves, caps, protective eyewear or face shields were used.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
USA	Greenville, NC	East Carolina University	N95 masks, disposable gowns, and gloves were used. PPE was not re-used.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled. There was a 20% decrease in procedural volume.
USA	New Brunswick, NJ	Rutgers University	N95 masks, disposable gowns, gloves, protective eyewear or face shields were used.	Elective cases were cancelled and EP procedure volume decreased by more than 95%.
USA	New Haven, CT	Yale University	N95 masks, disposable gowns, protective eyewear or face shields were used.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for

				endocarditis were performed. Elective procedures were cancelled.
USA	New York, NY	New York Presbyterian/Columbia University Irving Medical Center*	N95 masks, disposable gowns, gloves, protective eyewear or face shields were used.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
USA	New York, NY	New York-Presbyterian Queens Hospital	N95 masks, disposable gowns, gloves, protective eyewear or face shields were used.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
USA	Stanford, CA	Stanford University	N95 masks, disposable gowns, gloves, caps, protective eyewear or face shields were used.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
USA	Washingto n, DC	George Washington University	N95 masks, disposable gowns, protective eyewear, face shields, and shoe covers were worn.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled.
South America				
Brazil	Porto Alegre	Hospital de Clínicas de Porto Alegre - Federal University of Rio Grande do Sul	Surgical masks, face shields, aprons, and surgical caps were worn. Surgical masks and face shields were re-used.	Emergent cases such as complete heart block, generator changes, VT storm and lead extractions for endocarditis were performed. Elective procedures were cancelled and procedure volume decreased by about 70%.
Brazil	São Paulo	InCor Insituto do Coração, University of São Paulo	N95 masks were used with all patients, and with COVID positive patients, gowns and gloves were also worn.	EP procedure volume decreased by 75% over the course of the pandemic.