Heart Rhythm Society℠

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COVID-19: Guidance for Cardiac Electrophysiology

Video Interview

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Guidance for Cardiac Electrophysiology During the Coronavirus (COVID-19) Pandemic

- **Heart Rhythm Society** COVID-19 Task Force
- **American College of Cardiology** Electrophysiology Section
- **American Heart Association** Electrocardiography and Arrhythmias Committee of the Council on Clinical Cardiology

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Panelists

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Disclosures: *Royalty Income*: UpToDate, Elsevier; *Associate Editor*: American Heart Association, *Circulation Arrhythmia & Electrophysiology*; *Research*: American Heart Association, National Institutes of Health; *Membership on Advisory Committees or Review Panels*: Amarin, American College of Cardiology, American Heart Association, BIOTRONIK; *Honoraria/Speaking/Consulting*: ABIM

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OBJECTIVES

Upon completion of this activity, learners will be able to:

1. Describe how to triage EP procedures to minimize peri-procedural COVID-19 exposure
2. Employ PPE for EP procedures to minimize peri-procedural COVID-19 exposure and avoid unnecessary use
3. Minimize COVID-19 exposure for inpatient consultations
4. Minimize COVID-19 exposure for outpatient visits

TARGET AUDIENCE

Intended for professionals providing heart rhythm care during COVID-19 pandemic

Guiding Values

Reducing contact between health care personnel and COVID-19 patients will limit spread of the disease and help to preserve health care resources, including personal protective equipment (PPE), ICU beds, ventilators, blood supply

- While non-urgent or elective procedures should be delayed, other procedures may be necessary
- Semi-urgent, urgent, or emergent procedures include those in which there is:
  - Threat to the patient's life if the procedure is not performed urgently
  - Threat of permanent dysfunction of an extremity or organ system
  - Risk of rapidly worsening to severe symptoms

Triaging to Minimize Peri-Procedural COVID-19 Exposure

- **Postpone all elective procedures**
- **Perform procedures that substantially decrease risk of clinical decompensation or risk of death**
- **Consider same-day discharge**

Urgent/Non-Elective Procedures	Semi-Urgent Procedures	Non-Urgent/Elective Procedures

• **Catheter ablation**
  • VT ablation for medically refractory electrical storm
  • AF, AFL, or AV nodal ablation if hemodynamically significant, severely symptomatic, drug and/or cardioversion refractory
  • WPW syndrome or preexcited AF with syncope or cardiac arrest
• **CIED procedures**
  • Lead revision for malfunction in a PM-dependent patient or ICD patient receiving inappropriate therapy
  • Generator change in a PM-dependent patient at ERI or EOS; PM or ICD with minimal battery remaining
  • Secondary prevention ICD
  • PM for symptomatic CHB, Mobitz II AVB, high-grade AVB, severely symptomatic SND with long pauses
  • Lead/device extraction for infection, including bacteremia, endocarditis, or pocket infection
  • CRT for severe refractory HF
  • Cardioversion for highly symptomatic atrial arrhythmias or uncontrollable RVR
• **TEE for urgent cardioversion**
	• **Catheter ablation**
	  • VT ablation for medically refractory recurrent VT
	  • SVT, medically refractory resulting in ED visits
	• **CIED procedures**
	  • Generator replacement for ERI battery status
	  • Primary prevention ICD in patient at high risk of life-threatening ventricular arrhythmia
		• **Catheter ablation and EP testing**
		  • PVC ablation in a stable patient
		  • SVT ablation for a stable patient
		  • AF/AFL ablation in a stable patient
		  • EP testing to evaluate stable tachyarrhythmias or bradycardia
		• **CIED procedures**
		  • Primary prevention ICD
		  • CRT in stable patients
		  • CIED upgrade
		  • PM for SND, Mobitz I AVB, stable non–high-degree AVB, or tachy-brady syndrome in mildly symptomatic patient
		  • PM or ICD generator replacements with >6 weeks of battery remaining
		  • Extraction of non-infected leads/device unless device function is dependent on lead extraction and re-implantation
		• Cardioversion of stable arrhythmias with well-tolerated symptoms
		• LAA closure in patients who can be on oral anticoagulation
		• TEE for routine assessment of valves or LAA closure devices and cardioversion that can be done after appropriate period of anticoagulation
		• Implantable loop recorder placement
		• Tilt-table testing

PPE to Minimize Peri-Procedural COVID-19 Exposure

- Screen all EP procedure patients for fever, COVID-19 symptoms, and high-risk exposures
- Coordination with anesthesia and ICU team is essential for procedure planning for COVID-19 positive patients

COVID-19 Positive or PUI Patient
Airborne Precautions • **PAPR or N95 mask** • **Surgical gown and gloves** • **Protective eyewear (goggles or face shield)**
If needing intubation prior to procedure, consider performing in a negative pressure room (in EP lab or inpatient ICU room before bringing to EP lab)

In locations with community spread and/or limited testing availability, it may be prudent to consider at least droplet precautions for all EP procedures

Inpatient Consultation to Minimize COVID-19 Exposure

- **Maintain high level of clinical suspicion for undiagnosed COVID-19 infection**
- **Minimize elective consultations and CIED interrogations**

COVID-19 Positive or PUI	Non-COVID-19
• Consider chart review and team discussion only consultation • Consider televisit using video or phone assistance • N95 or PAPR PPE, or according to CDC and hospital guidelines • Coordinate visit carefully to decrease entering/exiting room • Consider minimizing fellow/trainee involvement in consultation or case	• Consider postponing non-urgent consultations • Consider surgical mask PPE

Outpatient Consultation to Minimize COVID-19 Exposure

- **Screen for risk symptoms and fever prior to arrival**
- **Consider surgical mask for all in-person visits**
- **Encourage telehealth or telephone as clinically appropriate and where permitted**

CIED Clinic	Telehealth/E-Visits
• When possible, convert stable outpatient follow-up to remote CIED visit	• Avoid direct patient contact in clinic unless deemed absolutely necessary

• Consider in-office device interrogation for:
  • CIED abnormality noted on remote, telemetry, or ambulatory monitoring
  • ICD shocks, presyncope or syncope concerning for an arrhythmic event, where programming changes are expected
  • Symptoms secondary to device/lead malfunction in patient without remote monitoring
  • Suspected device infection
  • Incessant arrhythmias associated with significant symptoms; if leading to multiple shocks, may consider re-directing for admission or to ED
  • Identified need for CIED reprogramming
• Close monitoring of remote transmissions for actionable alerts
	• Convert all visits possible to telehealth visits (Internet, phone, video) including for new patients
	• Consider utilizing digital wearables to obtain vital signs and ECG tracings
	• CIED site inspection can be done virtually (video call or have a patient sent a picture of the site to the physician through a secure portal)

PANEL DISCUSSION

RESOURCES

Guidance for Cardiac Electrophysiology During the Coronavirus (COVID-19) Pandemic from the Heart Rhythm Society COVID-19 Task Force; Electrophysiology Section of the American College of Cardiology; and the Electrocardiography and Arrhythmias Committee of the Council on Clinical Cardiology, American Heart Association

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https://www.heartrhythmjournal.com/article/S1547-5271(20)30289-7/fulltext

COVID-19 Challenges & Solutions Resources
https://www.hrsonline.org/COVID19-Challenges-Solutions

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THANK YOU

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