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Safe Reintroduction of Cardiovascular Services during the COVID-19 Pandemic: Guidance from North American Society Leadership

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North American Cardiovascular Societies represented: American College of Cardiology, American Heart Association, Canadian Cardiovascular Society, Canadian Association of Interventional Cardiology, Society for Cardiovascular Angiography and Interventions, Heart Valve Society, American Society of Echocardiography, Society of Thoracic Surgeons, Heart Rhythm Society, Society of Cardiovascular Computed Tomography, American Society of Nuclear Cardiology, Society of Nuclear Medicine and Molecular Imaging, Society for Cardiovascular Magnetic Resonance, Canadian Heart Failure Society, and the Canadian Society of Cardiac Surgeons.

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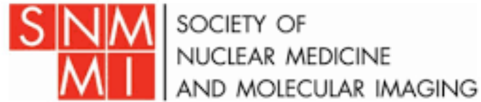
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AND MOLECULAR IMAGING

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Cardiovascular
Magnetic
Resonance

ASNC
American Society of Nuclear Cardiology

Heart
Rhythm
Society

The
Heart Valve Society

CHFS SCIC
Canadian Heart Failure Society
Société canadienne d'insuffisance cardiaque

CANADIAN SOCIETY OF
CARDIAC SURGEONS
SOCIÉTÉ CANADIENNE DES
CHIRURGIENS CARDIAQUES

Ethical Considerations

Similar to rationing decisions made in preparation for the initial surge of COVID-19 cases, progressive and thoughtful reintroduction of cardiovascular services must be based on robust ethical analysis. Relevant values to be operationalized include:

1. ***Maximizing benefits*** such that the most lives, or life years are saved so that procedures or tests that are likely to benefit more people to a greater degree are prioritized over procedures that will benefit fewer people to a lesser degree;
2. ***Fairness*** such that like cases are treated alike, taking into consideration baseline health inequities;
3. ***Proportionality*** such that the risk of further postponement is balanced against the risk of exacerbating COVID-19 spread; and
4. ***Consistency*** such that reintroduction is managed across populations and among individuals regardless of ethically irrelevant factors such as ethnicity, perceived social worth or ability to pay. Finally the promotion of ***procedural justice***, with the use of an ethical framework, is essential to ensure all decisions reflect best available evidence with transparent communication.

Canadian Association of
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Table 1: Safe Reintroduction of Invasive Cardiovascular Procedures and Diagnostic Tests during the COVID-19 Pandemic: Guidance from North American Society Leadership

Response Level (in collaboration with public health officials)	**Level 2** Reintroduction of some services	**Level 1** Reintroduction of most services	**Level 0** Regular services (ongoing COVID-19 testing/surveillance and monitoring of PPE availability)
INTERVENTIONAL and STRUCTURAL CARDIOLOGY			
STEMI	• COVID-19 status may be unavailable at time of STEMI. Use of PPE will be dictated by regional health authority and COVID-19 penetrance. • PPCI for most patients. Selective pharmacoinvasive therapy as per regional practice. • If moderate/high probability or COVID-19 +ve consider alternative investigations (TTE and/or CCT) prior to cath lab activation or pharmacoinvasive therapy	• COVID-19 status may be unavailable at time of STEMI. Use of PPE will be dictated by regional health authority and COVID-19 penetrance. • PPCI for most patients. Selective pharmacoinvasive therapy as per regional practice. • If moderate/high probability or COVID-19 +ve consider alternative investigations (TTE and/or CCT) prior to cath lab activation or pharmacoinvasive therapy	• COVID-19 status may be unavailable at time of STEMI. Use of PPE will be dictated by regional health authority and COVID-19 penetrance. • PPCI for most patients. Selective pharmacoinvasive therapy as per regional practice. • If moderate/high probability or COVID-19 +ve consider alternative investigations (TTE and/or CCT) prior to cath lab activation or pharmacoinvasive therapy
ACS (NSTEMI/UA)	• NSTEMI (High Risk) – Invasive strategy (Refractory symptoms, hemodynamic instability, significant LV dysfunction, suspected LM or significant proximal epicardial disease, GRACE risk score >140) • Medium Risk NSTEMI – Selective invasive strategy • Low Risk NSTEMI and UA – Medical therapy	• NSTEMI (High Risk) – Invasive strategy (Refractory symptoms, hemodynamic instability, significant LV dysfunction, suspected LM or significant proximal epicardial disease, GRACE risk score >140) • Medium Risk NSTEMI – Invasive strategy • Low Risk NSTEMI and UA – Selective invasive strategy	Routine service for all cases

Elective Cath Lab Cases	• Outpatients with symptoms AND non-invasive testing suggesting high risk for CV events in the short term.	• All outpatients who are clinically considered to be moderate and high risk. • Stable cases may still be deferred	Routine service for all cases
TAVR	• Inpatients and outpatients with severe symptomatic aortic stenosis	• Most patients accepted by the Heart Team • Stable cases may still be deferred	Routine service for all cases
MitraClip	• Inpatients and outpatients with severe symptomatic mitral regurgitation	• Most patients accepted by the Heart Team • Stable cases may still be deferred	Routine service for all cases
ASD/PFO	• Selective cases	• Majority of cases • Stable cases may still be deferred	Routine service for all cases
LAAC	• Selective cases	• Majority of cases • Stable cases may still be deferred	Routine service for all cases
Other	Selective cases: • Pulmonary hypertension • Adult congenital	• Majority of cases • Stable cases may still be deferred	Routine service for all cases
CARDIOVASCULAR SURGERY			
Coronary	• Inpatients waiting for surgery • Outpatients with progressive symptoms or LV impairment	• All inpatients waiting for surgery • Majority of outpatients • Stable cases may still be deferred	Routine service for all cases
Valve Surgery	• Severe symptomatic valvular disease • Outpatients with progressive symptoms or LV impairment	• All inpatients waiting for surgery • Majority of outpatients • Stable cases may still be deferred	Routine service for all cases
Other	• Aortic dissection • Valvular endocarditis • Heart transplant/VAD • High risk cardiac tumours • Congenital cardiac surgery	• Majority of cases • Stable cases may still be deferred	Routine service for all cases
ELECTROPHYSIOLOGY			
Ablation	• Pre-excited AF • AF with recurrent admissions +/- CHF • Drug refractory VT	• Majority of cases • Stable cases may still be deferred	Routine service for all cases
Devices	• PPM for all inpatients and selective high-risk outpatients • Secondary prevention ICD and selective primary prevention ICD.	• Majority of cases • Stable cases may still be deferred	Routine service for all cases