

CT Surgery in the COVID crisis: Stratifying Patients for Cardiac Operations

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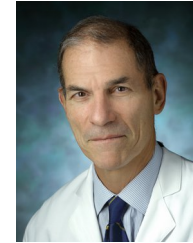
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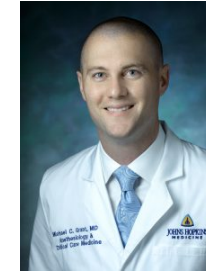
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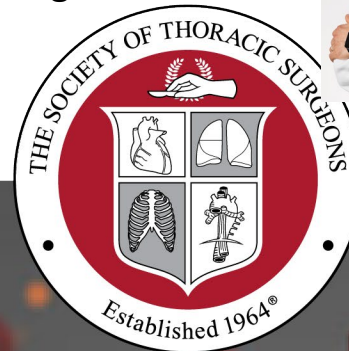
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Why this is
important

Cardiac surgery is a unique specialty

high risk patients with postoperative
critical care needs

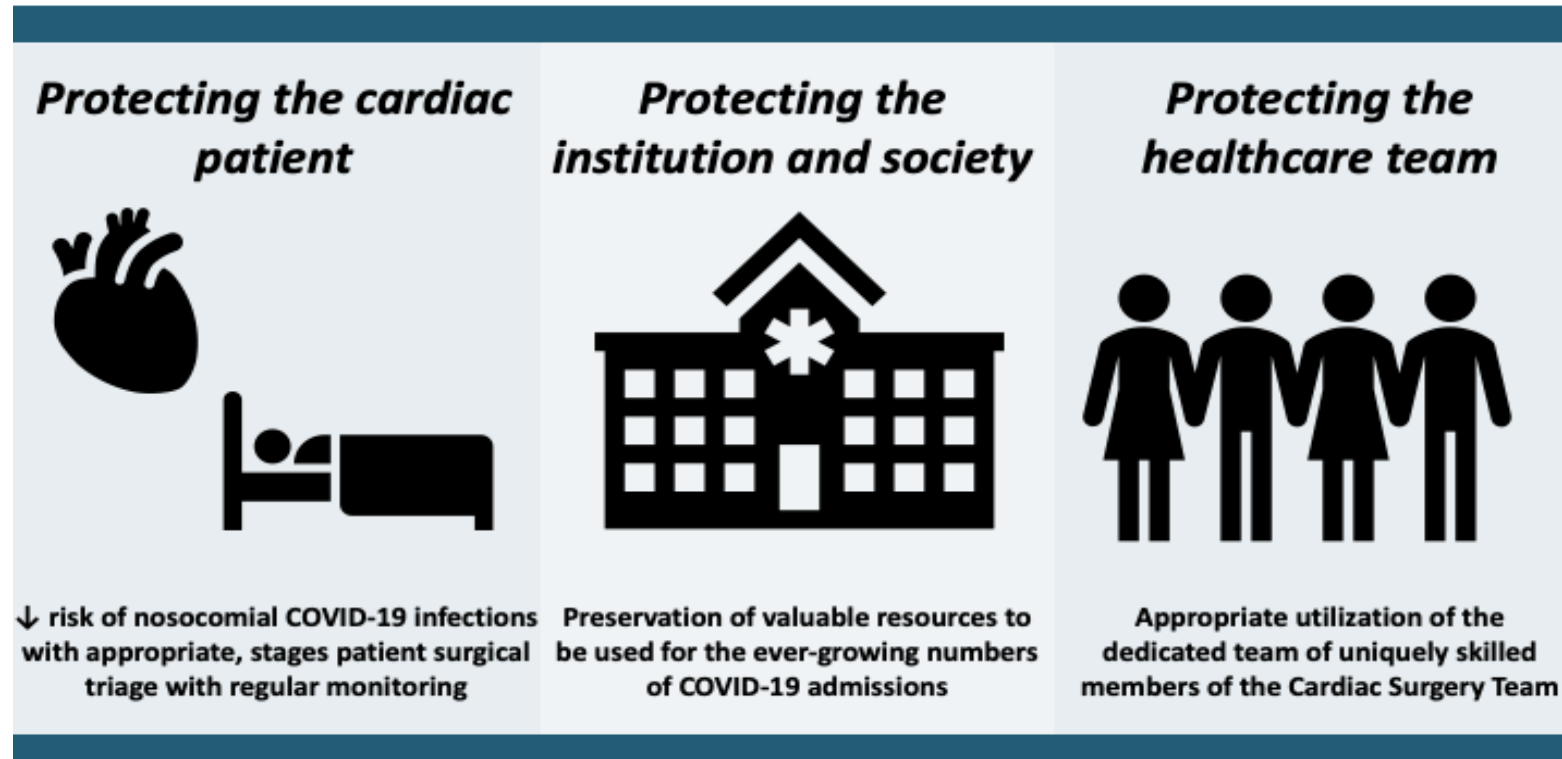


During the COVID-19 pandemic
crisis tough decisions must be made



Adult cardiac surgery during the COVID-19 Pandemic: A Tiered Patient Triage Guidance Statement

Authors: Jonathan W. Haft, Pavan Atluri, Gorav Alawadi, Daniel Engelman, Michael C. Grant, Ansar Hassan, Jean-Francois Legare, Glenn Whitman, Rakesh C. Arora and on behalf of the Society of Thoracic Surgeons COVID-19 Taskforce the Workforce for Adult Cardiac and Vascular Surgery



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Haft et al.,
The Annals of Thoracic Surgery

 @annalsthorsurg

4 Tiers for Surgical Patient Triage

Tier 1

0-30% inpatient COVID-19 load
Mild reduction in operative capacity

Tier 2

30-60% inpatient COVID-19 load
Mod. reduction in operative capacity

Tier 3

60-80% inpatient COVID-19 load
severe reduction in operative capacity

Tier 4

>80% inpatient COVID load
minimal operative capacity



Case Example 1



- **Patient Story**
 - 67 year old male with DM
 - LM of 50% with EF 65%
 - with CCS class 1
- **COVID Burden**
 - 30% COVID burden in your hospital
 - Recent cases of community transmission

TIER 2

Essential services

- All in-patients waiting for surgery including emergency services
- Outpatients with progressive symptomatology who have demonstrated failure to medical management
- **Symptomatic CAD**
 - **Asymptomatic CAD with impaired systolic function**

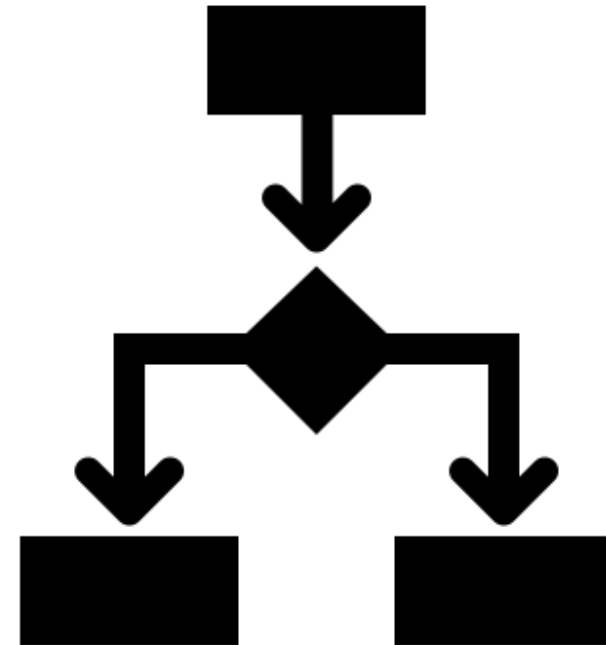
Deferred

- Asymptomatic outpatients and patients with anatomy and physiology suggesting delay can be provided with reasonable safety.

- **30-60% inpatient COVID-19 Load,**
- **moderate reduction in operative capacity**

Case Example 2 -

- Patient Story
 - Case 2 – 68 year old female with AS
 - AVA of 0.8cm²
 - Peak/Mean 64/35
 - 1vCAD (RCA 70%)
 - Previously NYHA I-II symptoms **now III**
- COVID Burden
 - 65% COVID burden in your hospital



TIER 3

Essential services

- All in-patients who cannot be discharged safely without surgical intervention/ correction including emergency services

Deferred

- All patients who are outpatients
- Patients deteriorating while waiting would need to meet criteria for admission **before** consideration for surgery

- **60-80% inpatient COVID-19 Load**
- **severe reduction in operative capacity**

Other important considerations

Develop follow-up mechanism for regular communication

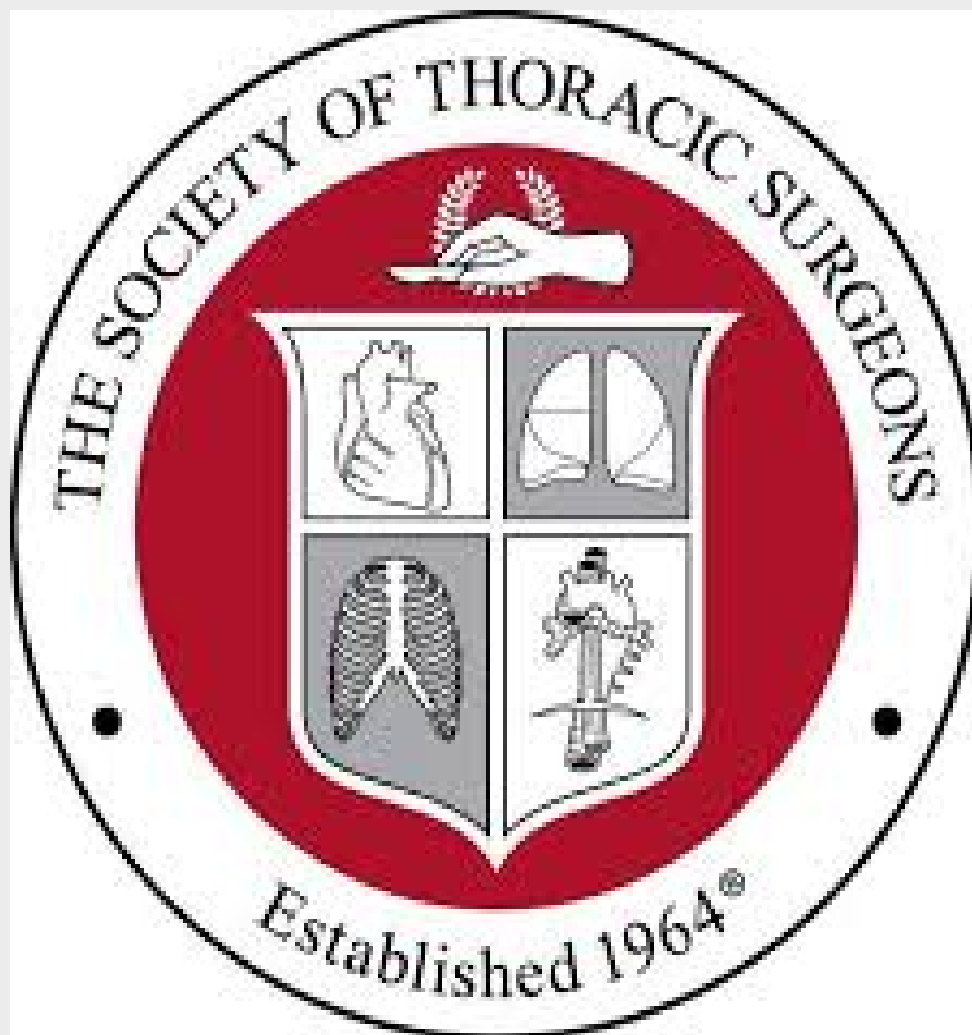
- tele or video conference

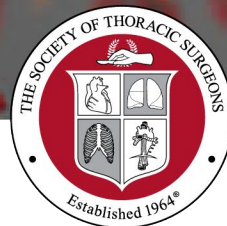
Regional competitors must now become collaborators

Determine how to effectively and safely “skeletonize” hospital

Consideration to accommodate team members at higher risk of COVID-19

- advanced age or the presence of underlying health conditions





Final Word



We must continue to serve as leaders, experts, and members of our medical community, willing to play any role necessary in this time of need.

Cardiac Surgery in Canada During the COVID-19 Pandemic

Continue to provide ongoing leadership with the Heart Team



Develop an institutional strategy for triaging cardiac surgery procedures



Contribute your skills to where they are needed



Essential services	Deferred
<ul style="list-style-type: none">• All in-patients waiting for surgery including emergency services (i.e. ascending aortic dissections, acute coronary syndromes, acute valvular endocarditis, and heart failure patients awaiting heart transplant or VAD)• Outpatients who are at greatest risk of adverse event, examples of which include:<ul style="list-style-type: none">• Symptomatic critical AS• CAD<ul style="list-style-type: none">Severe CAD with large territory of myocardium at risk.Asymptomatic CAD with reduced systolic function.Progressive angina• Cardiac tumors at risk of obstruction or embolization• Aortic aneurysm at risk based on size and familial association• Patients with correctable, anatomic causes of heart failure (valvular or myocardial, ie. HCM, adult congenital)• End-stage heart failure patients in evaluation for mechanical assist devices whom are inotrope dependent	<ul style="list-style-type: none">• Asymptomatic Outpatients• Truly elective intervention could include<ul style="list-style-type: none">• Asymptomatic• minimally symptomatic severe MR• ASD and or PFO surgery• Asymptomatic aneurysm with demonstrated stable size• Isolated arrhythmia procedures <ul style="list-style-type: none">• 0-30% inpatient COVID-19 Load• mild reduction in operative capacity

TIER 2

Essential services

- All in-patients waiting for surgery including emergency services
- Outpatients with progressive symptomatology who have demonstrated failure to medical management
- **Symptomatic CAD**
 - **Asymptomatic CAD with impaired systolic function**

Deferred

- Asymptomatic outpatients and patients with anatomy and physiology suggesting delay can be provided with reasonable safety.

- **30-60% inpatient COVID-19 Load,**
- **moderate reduction in operative capacity**

TIER 3

Essential services

- All in-patients who cannot be discharged safely without surgical intervention/ correction including emergency services

Deferred

- All patients who are outpatients
- Patients deteriorating while waiting would need to meet criteria for admission **before** consideration for surgery

- **60-80% inpatient COVID-19 Load**
- **severe reduction in operative capacity**

TIER 4

Essential services	Deferred
<ul style="list-style-type: none">• Only emergency services based on resource availability	<ul style="list-style-type: none">• All inpatients judged to be stable and capable of waiting• All outpatients

- Alternate arrangements at peer institutions with potential capacity should be sought