NYU Langone Health

Department of Cardiothoracic Surgery

CARDIOTHORACIC SURGERY IN THE COVID CRISIS: STRATIFICATION OF CARDIAC CASES

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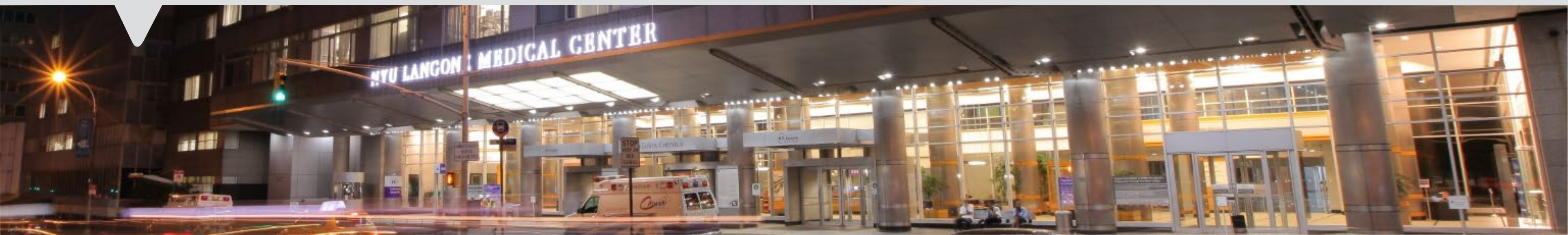

STRATIFICATION MUST TRACK COVID WAVE, HOSPITAL RESOURCES AND PATIENT RISK

STAGE 1

- Early COVID Wave
- Small to moderate COVID Hospital Census
- CT ICU and Floor COVID Free
- Avoid Elective Patients who have:
  - A High risk for developing COVID
  - COPD or other Pulmonary Conditions
  - Increased STS RISK for M & M and Prolonged Ventilation
  - Estimated Hospital LOS > 7 days

Stage 2

- Rapid Upslope Wave
- High COVID ICU and Ventilated Census
- Cardiac ICU and Floor Are COVID Free
- Patients May Be at Increased Risk for Hospital Transmission
- No Elective Surgery in Patients who can safely wait 2-3 months
- Operate on Urgent or Emergent Cases Only
  - Valve or Valve + CABG with Decompensated CHF or Moderate Angina
  - CABG with Class 3 or 4 Angina
  - Critical AS likely to decompensate, but unlikely for prolonged LOS
  - Heart failure on IABP for VAD

Stage 3

- **Near or at Plateau** (may last several months)
- COVID ICU +/- Ventilated Census Near Capacity
- Limited COVID Free ICU Space
- Increased Risk of Hospital Transmission
- Operate only on Emergent or Very Urgent Cases Likely to Die Within Weeks
  - Unstable angina or shock unsuitable for PCI
  - Valve Patients with Decompensated CHF or Low EF Refractory to Med Rx
  - Acute Bacterial Endocarditis (with class 1 Indication)
  - Type A Aortic Dissection or Symptomatic Expanding Aneurysm
  - Heart failure on IABP for VAD

Case Presenting in Early COVID Stage 3

- 74 yo diabetic female, prior IWMI, multiple PCIs presents with angina, non-STEMI and systolic CHF
- Echo: EF 35%, tethered MV with Severe Insufficiency
- Cardiac Cath: 90% proximal LAD, Sub-total proximal CFX and patent RCA stents
- STS PROM Score = 16%

Stage 3 CT Surgery Deployment

Cardiothoracic surgeons have been taking care of patients with pulmonary injury, infections and sick patients with cardio-pulmonary disease for our entire professional careers."

- Demonstrate Leadership to Hospital and Colleagues
- Senior CT Surgeon Rounds Daily with Hospital and ICU Leadership
- CT Surgeons work in COVID ICUs as Intensivists
- CT Surgery Employs Special Teams to Deliver Special Expertise
  - ECMO team (should already be in place from earlier stages)
  - Early Tracheostomy Team
  - Bronchoscopy and Pleural Space Team

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Stage 3

- All Post Op Office Visits by TeleMedicine (unless a confirmed active issue)
- Office Staff test COVID (-)
- Office is Staffed 3-4 days a week with only ½ in Office
- Masks in Office
- New Consults: Option of In Person or TeleMedicine

Stage 4

- Early Tail (will be much longer than upslope)
- High COVID ICU and Ventilated Patient Census
- Limited “COVID Free” ICU and Floor Space
- Increased Risk of Hospital Transmission
- Cannot Justify Elective Surgery
- Returning Staff and Patient must test COVID (-)
- Only Urgent Cases (without increased risk of prolonged ventilation)
  - AI or MR with moderate symptoms or severe LV dilation
  - Severe AS with Mild symptoms or extremely severe AS
  - CABG with Class 2 or 3 Angina or Severe Proximal Stenosis

Stage 5

- Late Tail (expected to be very slow)
- COVID ICU and Ventilated Census Moderate
- Cohort of COVID (-) Cardiac ICU and Floor Space
- Minimal Risk of Hospital Transmission
- OR, ICU and Floor Staff, and Patient, must Test COVID (-)
- Reliability of antibodies and immunity yet to be determined
- Slowly and Progressively Resume Elective Surgery

IT IS NO LONGER "THE FUTURE IS YOURS TO INVENT"

BUT NOW IT IS

"THE PRESENT IS OURS TO REDESIGN"

Thank you!