



# Perioperative Medicine

**Dr. Mohammad Ahmedullah**

MBBS, MRCP (UK),  
FRCP, FRACP, FCPS

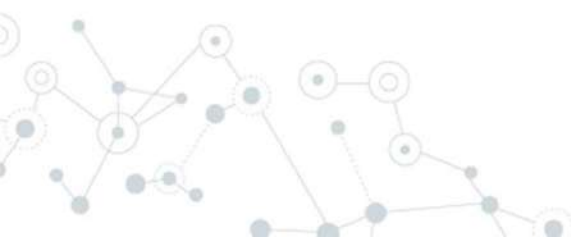


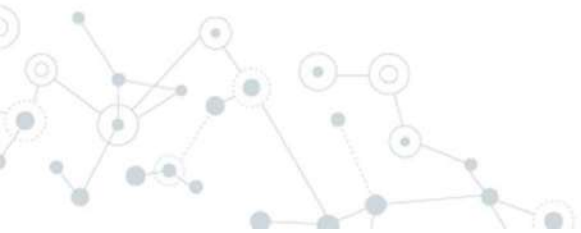
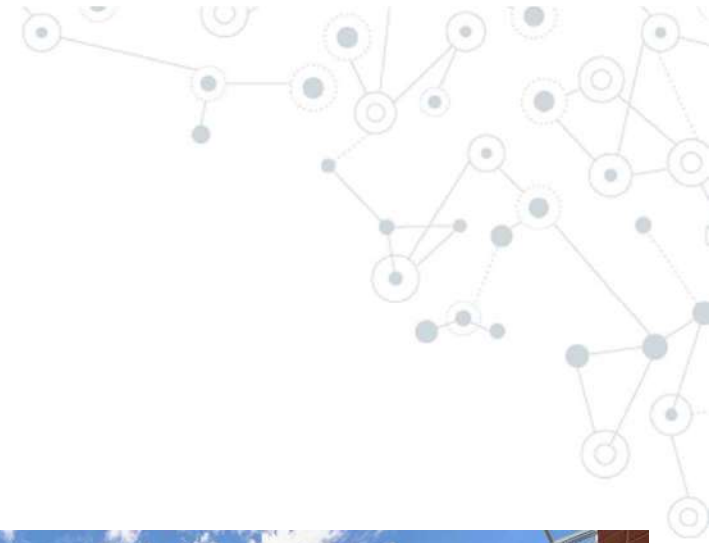
“Perioperative medicine emphasises the importance of an integrated, planned, and personalised approach to patient care before, during, and after any surgical procedure involving anaesthesia.”

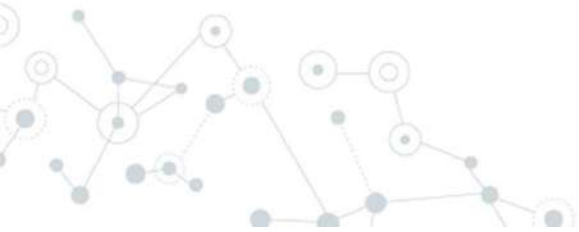
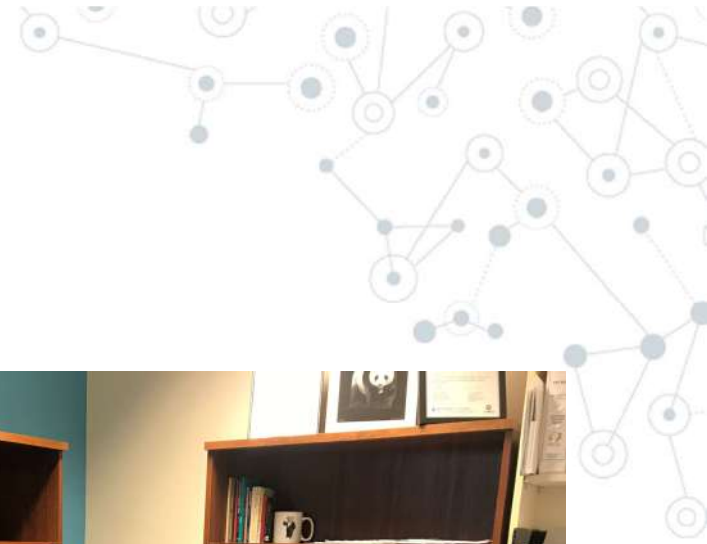




## A good perioperative specialist aims to:

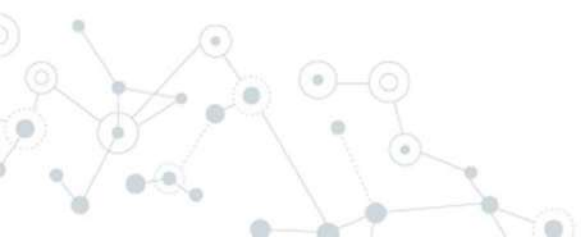
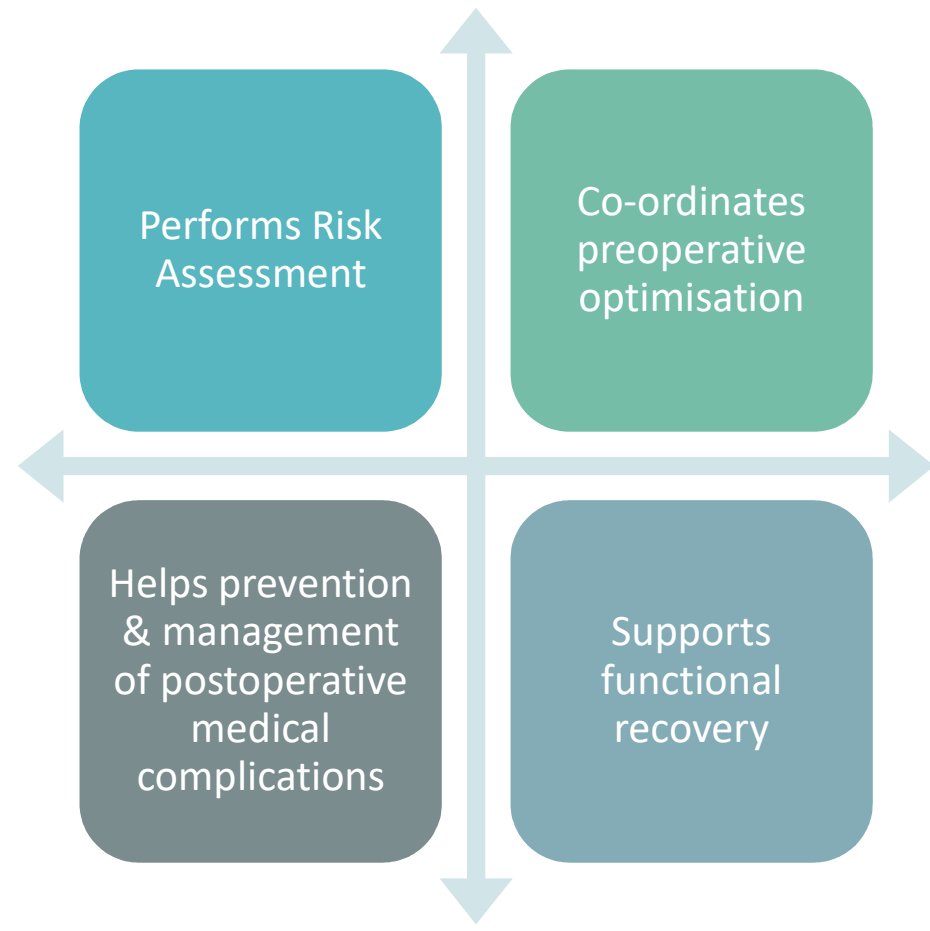
- ◎ Improve the patient's experience.
  - ◎ Reduce postoperative complications.
  - ◎ Reduce inpatient hospital days.
  - ◎ Reduce early re-admissions following surgery.
- 







# Role of peri-operative team



# Preoperative Assessment:

## Overall Risk

- ACS surgical risk calculator
- (ACS –NSQUIP)
- P-Possum

## Cardiac Risk

- Revised cardiac risk index

## Respiratory Risk

- 6 minute walking test
- Blood gas

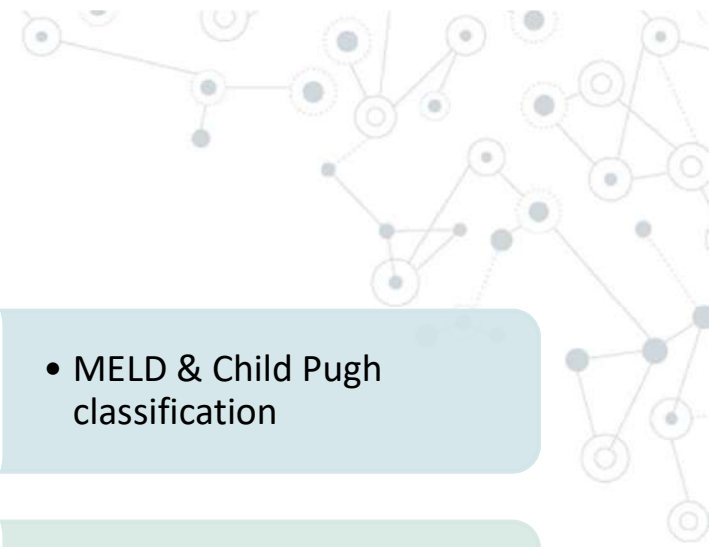
## Liver Failure Risk

- MELD & Child Pugh classification

## Level of Frailty

- Clinical frailty score

## Delirium Risk



## Preoperative Assessment:

- ◎ Functional Independence:
  - History
  - Observation of walking
  - Duke activity index
- ◎ History
  - Symptoms
  - Effort intolerance

- ◎ Assessment of self-reported effort tolerance to determine metabolic equivalents
  - 4 MET +
- ◎ Cardiopulmonary exercise testing
  - Stress tests





# ACS Surgical Risk Calculator

- ① Web based tool
  - 5 million procedures in 874 hospitals from 2016-20
- ① For surgical decision making/informed consent
- ① 20 patient factors:
  - Age/BMI/HTN/ASA class /Sex/DM/Functional status +
  - Planned surgical procedure
- ① Predicts 18 different outcomes

The screenshot displays the ACS NSQIP Surgical Risk Calculator interface. At the top, it features the ACS NSQIP logo, the title 'Surgical Risk Calculator', and the American College of Surgeons logo with the tagline 'Improving Quality. Highest Standards. Better Outcomes.' Below this is a navigation bar with links for 'Risk Calculator Home Page', 'About', 'FAQ', 'ACS Website', and 'ACS NSQIP Website'. The main heading is 'Enter Patient and Surgical Information'. The form includes a 'Procedure' search box with a 'Clear' button and a 'Reset All Selections' button. A section titled 'Are there other potential appropriate treatment options?' has three radio button options: 'Other Surgical Options', 'Other Non-operative options', and 'None'. Below this, a note states: 'Please enter as much of the following information as you can to receive the best risk estimates. A rough estimate will still be generated if you cannot provide all of the information below.' The form contains 20 input fields for patient and surgical factors, including Age Group, Sex, Functional Status, Emergency Case, ASA Class, Steroid use for chronic condition, Ascites within 30 days prior to surgery, Diabetes, Hypertension requiring medication, Congestive Heart Failure in 30 days prior to surgery, Dyspnea, Current Smoker within 1 Year, History of Severe COPD, and Dialysis.

# Patient Outcomes

## Serious Complications

- Cardiac arrest
- Acute MI
- Sepsis
- ARF
- PE
- Death

## Any Complications

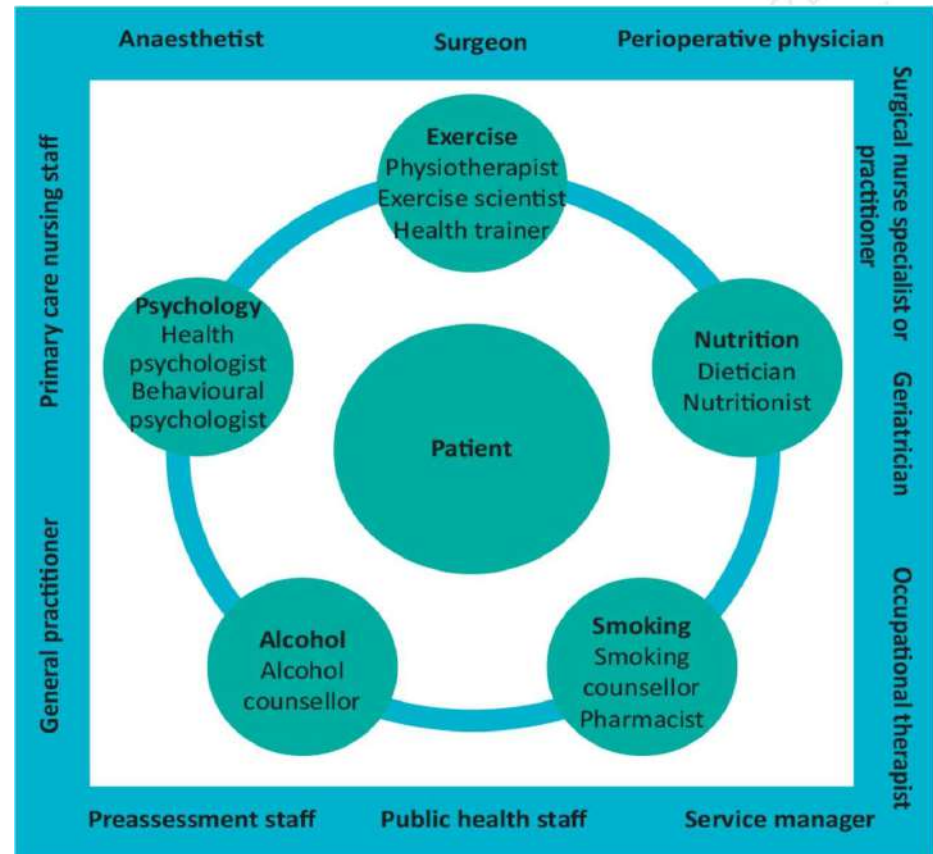
- Wound infection
- ARF
- Cardiac complications
- Hypoxaemia

## Any Complications

- Pneumonia
- Readmission
- Return to OT
- Discharge to rehab facility
- Length of stay

# Prehabilitation (Preoperative optimisation)

- ◎ Preoperative exercise (pro-active)
- ◎ Nutrition optimization
- ◎ Psychological intervention
- ◎ Lifestyle modification
- ◎ Co morbidities:
  - Anemia : Fe deficiency
  - Frailty : Geriatric patient
  - DM : 10-15% of patients

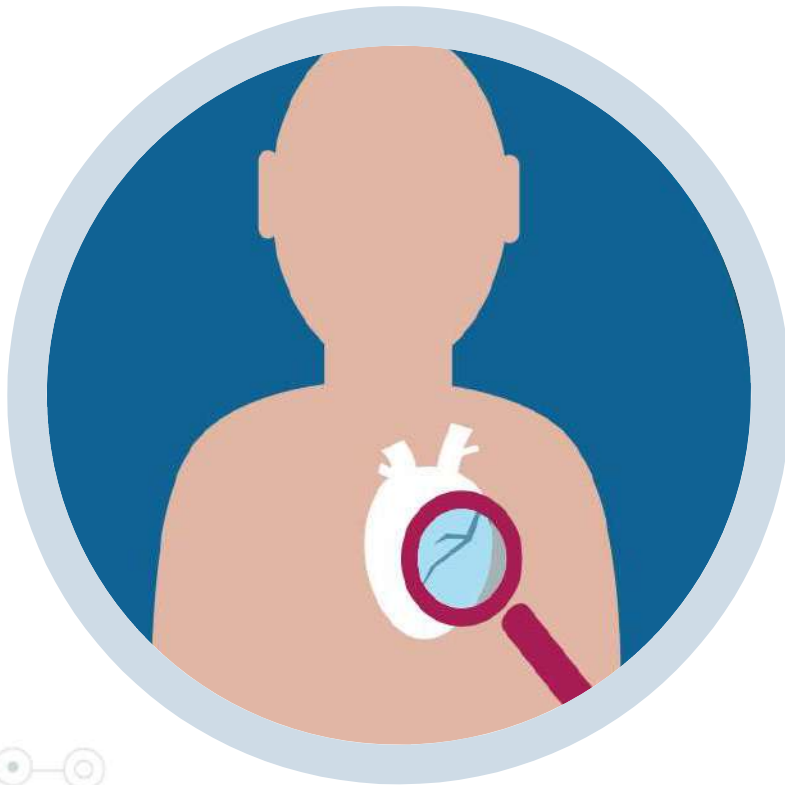


# Medication Management

- ⦿ Anticoagulant, anti-platelets
- ⦿ Diuretics, diabetic medications
- ⦿ Heart medications
- ⦿ Anti Parkinson drugs



## Optimisation of Underlying Medical Conditions:



- ⊙ Cardiac
- ⊙ Respiratory
- ⊙ DM
- ⊙ HTN
- ⊙ Risk of VTE

# Intraoperative

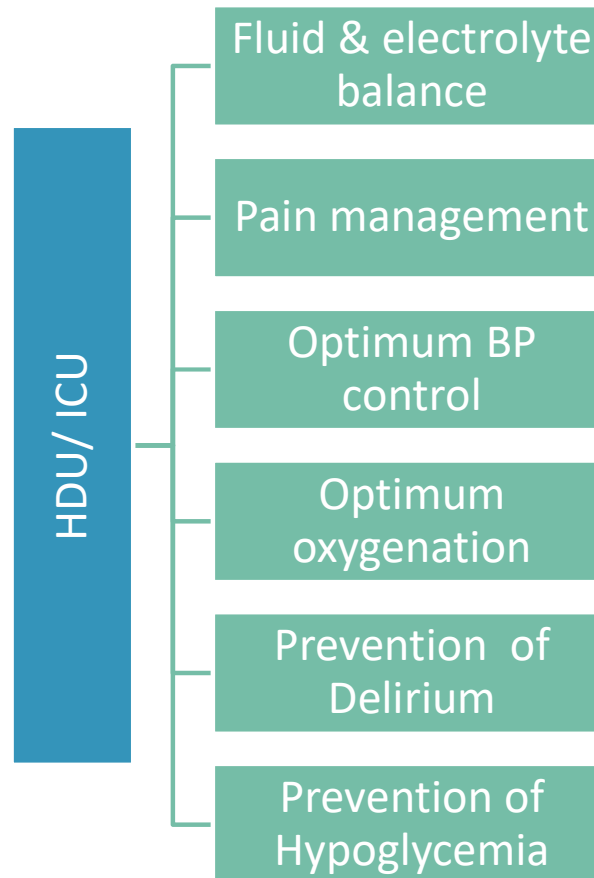
- ◎ Liaise with anesthetist
- ◎ Advice about:
  - Guided fluid therapy
  - Prevention of hypothermia
  - Adequate BP control
  - Adequate Oxygenation
  - Glycemic control





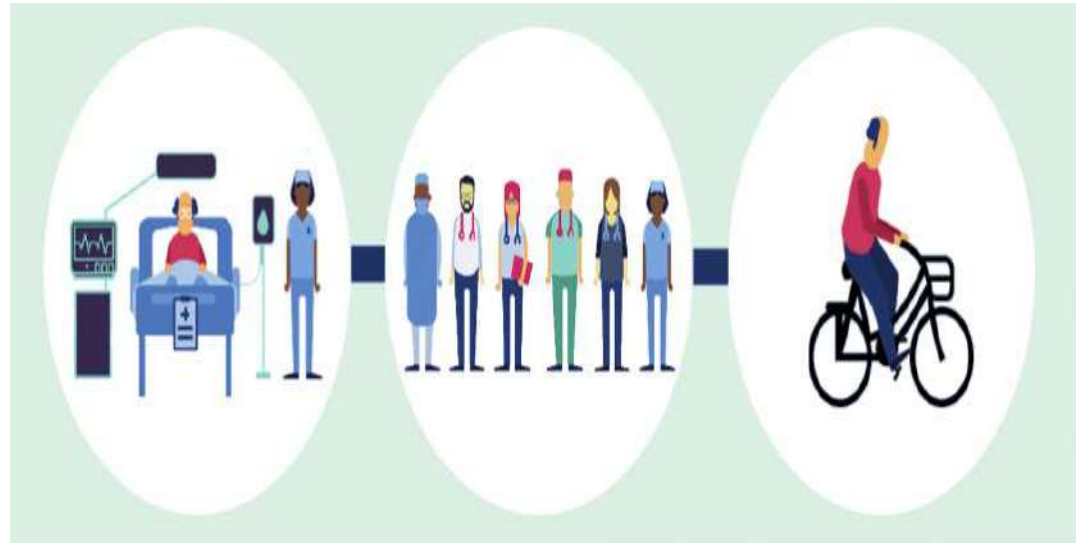
# Postoperative: Immediate

© Often in HDU/ICU



## Post Operative: Long Term

- ⦿ Enhanced recovery program
- ⦿ Pre-emptive vs reactive
- ⦿ Pain management
- ⦿ Cognitive function
- ⦿ Rehabilitation



## At LMH

- ◎ 3 consultants
- ◎ 1 AT
- ◎ 5 clinics weekly



- ◎ Referrals from Surgeons:
  - Preoperative Optimisation
- ◎ Full medical picture to decide type of surgery
- ◎ Perioperative risk of the procedure
- ◎ Referral from Anesthetists



# Case Study



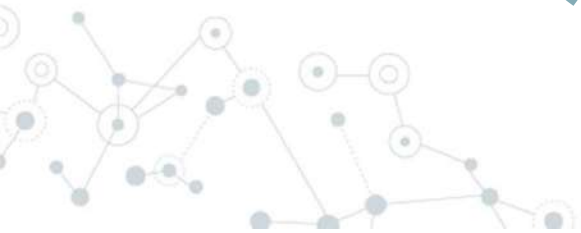
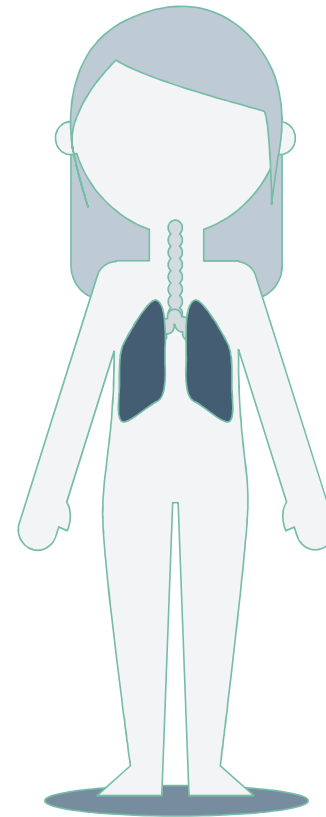
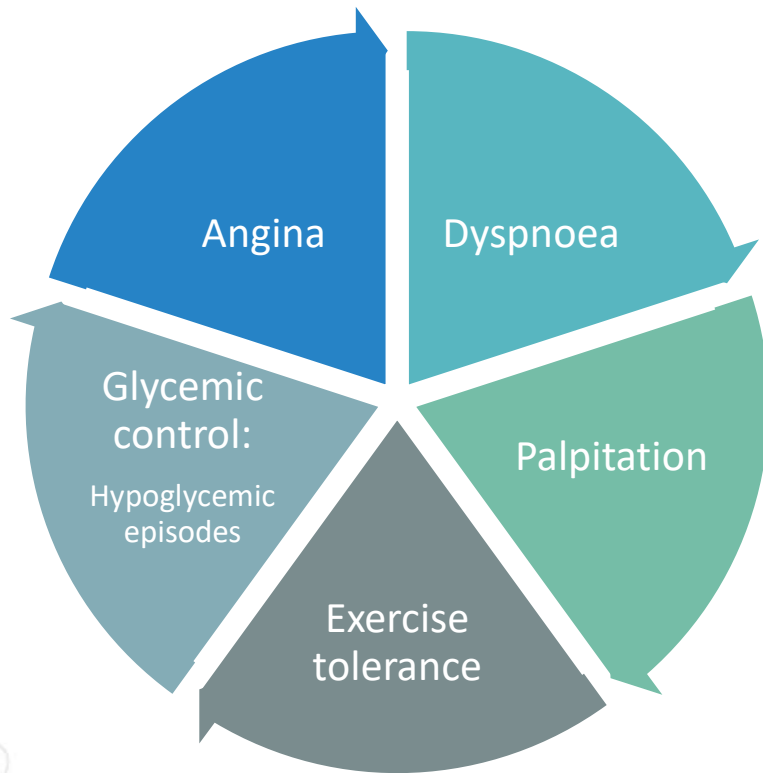
# Patient Medical History

- ⦿ 65 y/o Female
- ⦿ Right knee replacement
  - Elective procedure
- ⦿ H/o ischemic stroke with complete recovery 8 months back
- ⦿ H/o NSTEMI 1 yr back

## Comorbidities:

DM	Nephropathy, Stage 2 CKD	HTN
CH, AF	COAD	Fatty Liver
OSA	Obesity	Depression

# History





## Diagnostics

- ⦿ Hb, Fe study
- ⦿ Renal function, Electrolytes, Magnesium, Calcium, Phosphate
- ⦿ LFT
- ⦿ ECG
- ⦿ Echo cardiogram
- ⦿ Further cardiac workup if necessary
- ⦿ 6-minute walk test
- ⦿ ABG



# Medication

Metoprolol

Insulin Glargine

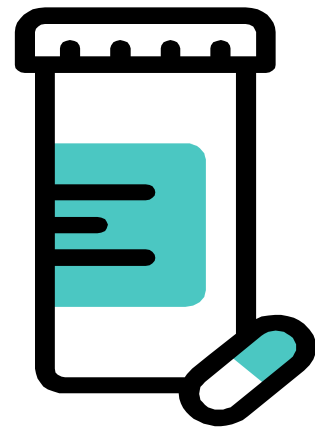
Empagliflozin

Irbesartan

Sertraline

Flexitide

Apixabin



# Medical Optimisation Post Surgery

HDU/ICU for 24 to 48 hours

Fluid balance/Hypotension  
Pain Management  
Oxygenation  
Prevention of delirium  
VTE Prophylaxis/ anti coagulation

Liaise with Allied health  
(mobilization/nutrition)  
Rehabilitation

# Thank You



