COMMON DISEASE SEVERITY SCORES

Cardiovascular

Angina CCS classification	
Class I	Angina with strenuous activity only
Class II	Angina with walking uphill, climbing stairs rapidly
Class III	Angina with > 1 flight of stairs or > 2 blocks
Class IV	Angina with any physical activity or at rest

CHF NYHA classification	
Class I	No limitation
Class II	Slight limitation of physical activity
Class III	Marked limitation in physical activity
Class IV	Inability to do any physical activity or discomfort at rest

Aortic stenosis grading			
Severity	Velocity (m/s)	Mean pressure gradient (mmHg)	Valve area (cm^2)
Mild	2.0 - 2.9	<20	>1.5
Moderate	3 - 3.9	20 - 39	1.0 - 1.5
Severe	>4	>40	<1.0

Pulmonary hypertension		
Severity	Systolic pulmonary artery pressure (mmHg)	Mean pulmonary artery pressure (mmHg)
Mild	>35	>20
Moderate	35-45	>40
Severe	45-60	>50

Atrial fibrillation CHADS2 score	
Hx of CHF	1
HTN	1
Age > 75	1
Diabetes mellitus	1
Stroke	2

Score	Thromboembolic risk per year
1	2.8 %
2	4.0 %
3	5.9%
4	8.5%
5	12.5%
6	18.2%

**See Coagulation Management Section

CARDIAC PERIOPERATIVE RISK SCORE

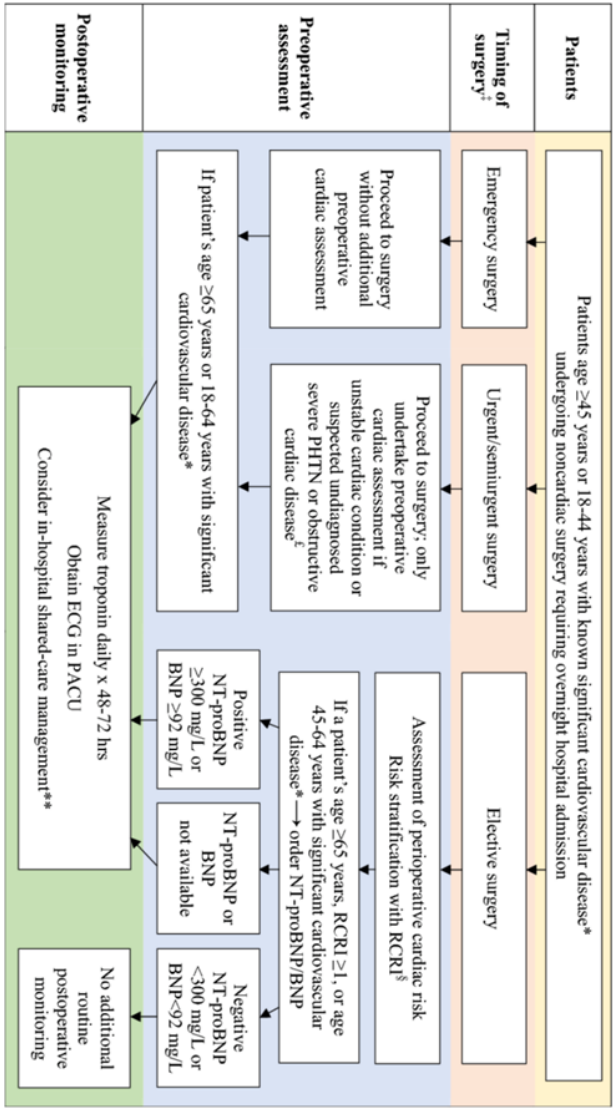
RCRI (30 day risk of death, MI or cardiac arrest)	
Criteria	Score
High risk surgery (intraperitoneal, intrathoracic, or suprainguinal vascular)	1
Ischemic heart disease	1
CHF	1
Diabetes requiring insulin	1
History of cerebrovascular disease	1
Cr >176	1

Score	Risk of MINS
0	3.9%
1	6.0%
2	10.1%
3 or more	15%

**See next page for RCRI algorithm

The severity of MINS (degree of hs-TnT rise) is correlated with the risk of 30-day postoperative mortality	
<20 ng / L – 0.5%	0.5 %
20-64 ng / L – 3.0%	3.0 %
65 – 999 ng / L	9.1 %
> 1000 ng / L	29.6 %

2016 CCS Guidelines on perioperative cardiac risk assessment and management for non-cardiac surgery



Canadian Cardiovascular Society Guidelines on Perioperative Cardiac Risk Assessment and Management for Patients Who Undergo Noncardiac Surgery
Author: Emmanuelle Duceppe,Joel Parlow,Paul MacDonald,Kristin Lyons,Michael McMullen,Sadeesh Srinathan,Michelle Graham,Vikas Tandon,Kim Styles,Amal Bessissow,Daniel I. Sessler,Gregory Bryson,P.J. Devereaux
Publication: Canadian Journal of Cardiology
Publisher: Elsevier
Date: January 2017

Respiratory

COPD airflow limitation	
Grade	FEV_1 (% predicted)
GOLD 1	>80
GOLD 2	50-79
GOLD 3	30-49
GOLD 4	<30%

AHI	OSA severity
<5	Normal
5-15	Mild
15-30	Moderate
>30	Severe

COPD symptom severity score	
mMRC	Symptoms
0	Dyspnea with strenuous exercise
1	Dyspnea walking up a hill
2	Walks slower than people same age
3	Stops for breath after walking a few min
4	Too dyspneic to leave the house

Asthma good control if:	
Characteristic	Frequency/Value
Daytime sx/SABA use	<4 days/week
Night-time sx	<1 night/weeks
Physical activity	Normal
Exacerbations	Mild, infrequent
FEV1 or PEF	>90% personal best
PEF diurnal variation	<10-15%

OSA STOP BANG score
Snore loudly
Tired during the day
Observed stopping breathing
HTN
BMI >35
Age>50
Neck >40cm
Gender male

Low Risk of OSA: 0 - 2
Intermediate Risk of OSA: 3-4
High Risk of OSA: 5-8
or 2 + male gender
or 2 + BMI > 35kg/m2

RESPIRATORY PERIOPERATIVE RISK SCORE

ARISCAT Score for postoperative pulmonary complications	
Age	
<50	0
50-80	3
>80	16
Preop sats (%)	
>96	0
91-95	8
<90	24
Resp. infection in the last month	17
Surgical incision	
Peripheral	0
Upper abdo	15
Intrathoracic	24
Duration of surgery (h)	
<2	0
2-3	16
>3	23

ARISCAT score	Risk	Risk of in hospital post-op pulmonary complications
<26	Low	1.6%
26-44	Intermediate	13.3%
>44	High	42.1%

Nephrology

KDIGO CKD	
GFR value for >3m	Classification
<60	Chronic kidney disease
<15	Chronic kidney failure
On dialysis or pending renal transplant	End stage renal disease

KDIGO AKI definition: Cr 1.5 times baseline or absolute rise of 26.5 mmol/l or urine output < 0.5 ml/kg/h for >6 hours

Endocrine

If >20mg prednisone equivalent for >3 weeks – stress dose
If 5-20 mg prednisone equivalent for > 3 weeks – guidance unclear, consider stress dose

Hepatic

MELD Score (Model for End-Stage Liver Disease)
Criteria
Bilirubin
INR
Creatinine
Sodium
Dialysis 2x in past week

Score	Mortality
≤9	1.9%
10-19	6.0%
20-29	19.6%
30-39	52.6%
≥40	71.3%

**See online calculator, formula for MELD is complex

Child-Pugh Score			
Factor	1 point	2 points	3 points
Bilirubin	<34	34-50	>50
Albumin	>35	28-35	<28
INR	<1.7	1.7-2.3	>2.3
Ascites	None	Mild	Mod - Severe
Encephalopathy	None	Gr I-II	Gr III-IV

	Class A	Class B	Class C
Total points	5-6	7-9	10-15
1 yr survival	100%	81%	45%
2 yr survival	85%	57%	35%

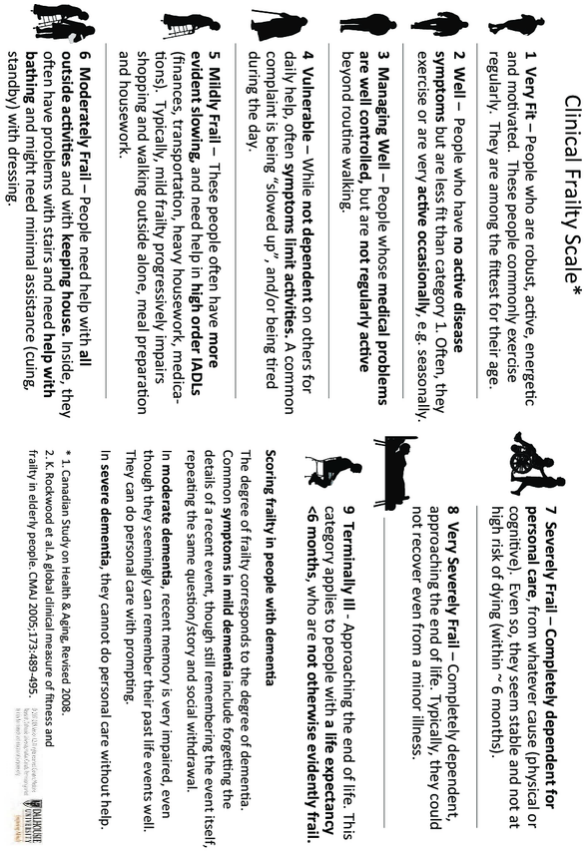
Functional capacity

DASI score	
Can you	Points
Take care of yourself (eat, dress, bathe, toilet)?	2.75
Walk indoors (around your house)?	1.75
Walk 200 yards on level ground?	2.75
Climb a flight of stairs or walk uphill?	5.50
Do light work around the house like dusting or washing dishes?	2.70
Do moderate work around the house like vacuuming, sweeping or carrying groceries?	3.50
Do heavy work around the house like scrubbing floors or moving heavy furniture?	8.00
Do yard work like raking leaves, weeding, or pushing a power mower?	4.50
Have sexual relations?	5.25
Participate in moderate recreational activities like gold, bowling, dancing, doubles tennis, or throwing a ball?	6.00
Participate in strenuous sports like swimming, singles tennis, football, basketball or skiing?	7.50
Total score:	-------

Estimated METS=((0.43 x DASI score) +9.5)/3.5

Geriatric assessment

Clinical Frailty Score (Score of 4 or more predicts morbidity, mortality, post-op delirium and non-home discharge)



If patient is frail consider:
Nutritional assessment and referral to a dietician if
- BMI <18.5
- Low albumin
- 10-15% unintentional weight loss in the last 6 months

Dementia screening with Mini-Cog
- 3 word recall (0-3 points), clock drawing (0 or 2 points). Dementia screening cutoff is <3; Preop cognitive impairment is linked to delirium, complications, functional decline and death after surgery.

DASI to screen for exercise tolerance and potential prehabilitation exercise program
Depression screening with PHQ-2 and referral for treatment

Kingston Health Sciences Centre
Centre des sciences de la santé de Kingston
Queen's University

Kingston General Hospital & Hotel Dieu Hospital
Departments of Anesthesiology and Perioperative Medicine

PERIOPERATIVE CONSIDERATIONS

For Anesthesiology + Perioperative Medicine

Prepared by: Sergiy Shatenko MD, Theunis Van Zyl MD, Stacy Ridi MD FRCP©

COAGULATION MANAGEMENT

When to bridge patients on warfarin

- Bridge patients at high risk of thromboembolism
  - Any mechanical mitral valve
  - Older generation mechanical aortic valve
  - A fib with CHADS2 of 5-6
  - Arterial or venous thromboembolism in the past 3 months
  - Prior arterial or venous thromboembolism during appropriate interruption of warfarin
  - Severe thrombophilia with a history of venous thromboembolism
  - Rheumatic valvular heart disease
- Consider bridging patients at intermediate risk patients
  - A fib with CHADS2 of 3-4
  - Newer generation mechanical aortic valve
  - Prior arterial or venous thromboembolism in the last 3-12 months
- Do not bridge in low risk patients
  - A fib with CHADS score of 0-2
  - Prior VTE over 12 months ago
  - Bioprosthetic heart valve
- Stop warfarin 5 days before procedure, check daily INR on day -1 or DOS
- Restart therapeutic LMWH/UFH 24h after surgery for low/moderate bleeding risk surgery and 48-72 hours after high bleeding risk procedure
- Use ASRA guidelines if planning to do a neuraxial technique (usually more conservative)

In general, DOACs do not need bridging

- Follow ASRA guidelines for stopping DOACs for all neuraxial techniques
- Follow ASRA guideline if planning to do a neuraxial technique (usually more conservative)