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Clinical tips and tricks in optimising patients prior to MBS, including which patients should be referred for prehabilitation/ERAS

I have the following potential conflict of interest to report:

I am an honorary clinical fellow with the University of Melbourne, Austin Precinct

I would like to acknowledge the *Beverley Briese Austin Health Nursing Scholarship* which has supported my attendance at IFSO Melbourne 2024

Scope

ERAS vs Prehab · Concepts redefined · Patient selection · Case studies · Future directions
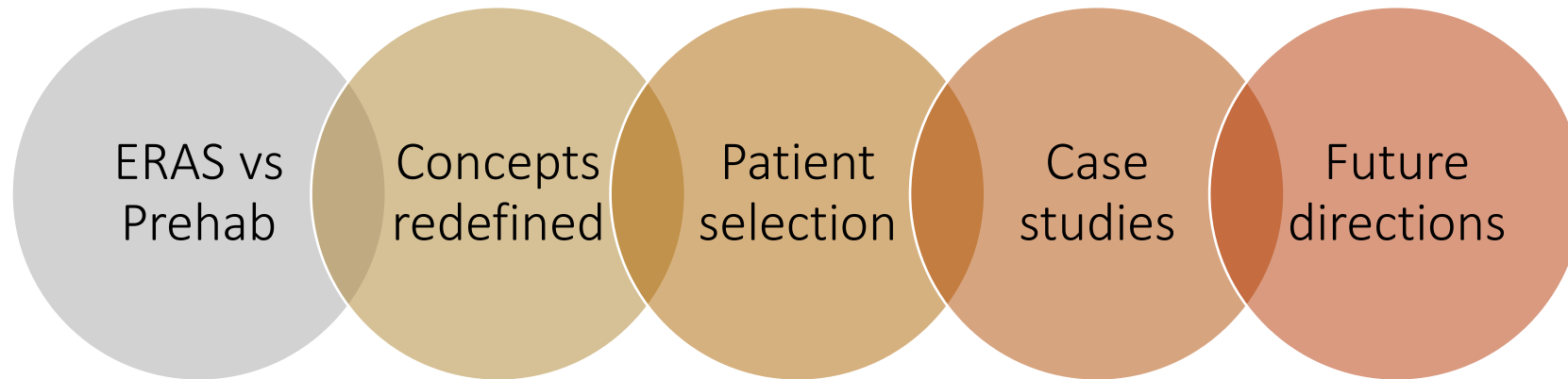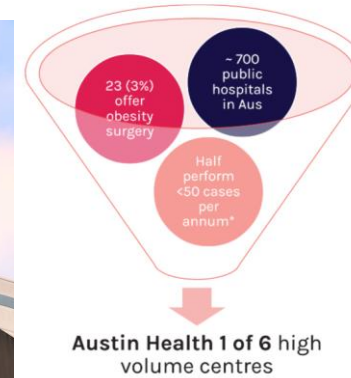
Introduction

Who am I?

Established ERAS 2018:
team designed, nurse-managed model of care

8 Surgeons + **shared waitlist**

85% of our MBS done at a secondary campus without prehab
15% present as high-excessively high risk

NEED risk mitigation
NEED efficiency
ALL HAVE confidence in process
ALL HAVE confidence in our team
TEAM DEMONSTRATED effectiveness

~700 public hospitals in Aus

23 (3%) offer obesity surgery

Half perform <50 cases per annum*

Austin Health 1 of 6 high volume centres

In the last 5 FY, Austin Health performed:

- 15% of all operations
- 29% of all revisions
- 12% of all primary operations

For obesity in publicly funded patients

Patient Cohort		
	Austin Health	Australia (Bariatric Surgery Registry)
Age	46.9yrs	41.1yrs
BMI	49.6	42.5
>3 comorbidities	57%	
Diabetes	27% • 27% insulin dependant	10-14% 19% insulin dependant
Revision	38% • 77% legacy patients	24%

ERAS and Prehabilitation Preparing patients for surgery

Enhanced Recovery after Surgery (ERAS)

Evidence-based, multifactorial perioperative pathway aimed at:

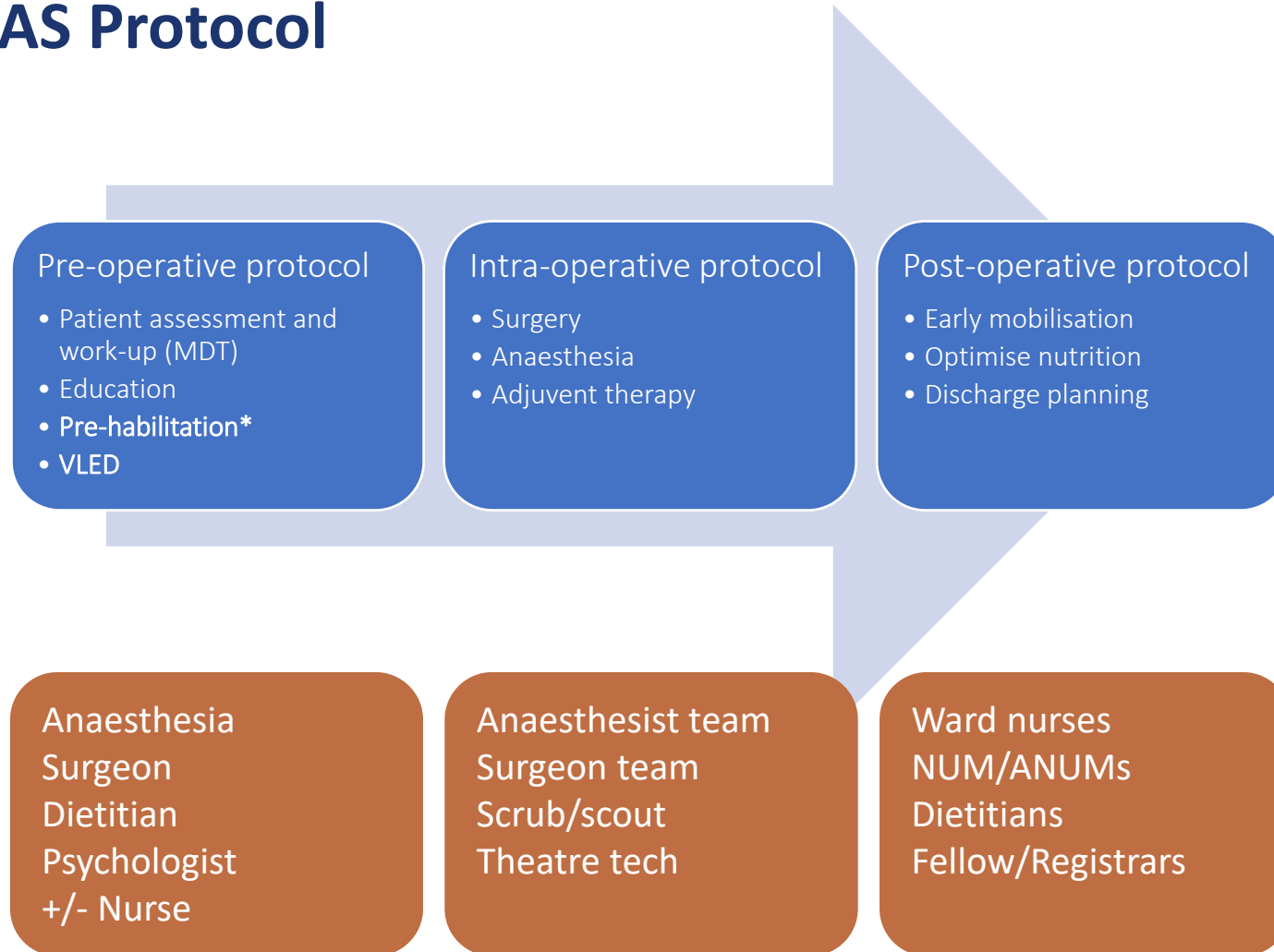Reducing surgical stress/blunting the perioperative inflammatory response

and

Improving post-operative recovery

Usually implemented in immediate lead up to surgery and delivered by MDT

Primary focus on enhanced recovery – not 'fast track'

Traditional* ERAS Protocol

Pre-operative protocol
- Patient assessment and work-up (MDT)
- Education
- Pre-habilitation*
- VLED

Intra-operative protocol
- Surgery
- Anaesthesia
- Adjuvent therapy

Post-operative protocol
- Early mobilisation
- Optimise nutrition
- Discharge planning

**Complete intervention, 100% adherence nearly impossible to achieve

Anaesthesia
Surgeon
Dietitian
Psychologist
+/- Nurse

Anaesthesist team
Surgeon team
Scrub/scout
Theatre tech

Ward nurses
NUM/ANUMs
Dietitians
Fellow/Registrars

Prehabilitation (prehab)

Prehabilitation is a clinical model that introduces components of **rehabilitation** to patients **prior** to undergoing intensive medical interventions such as surgery to:

Optimise function

Improve tolerability of intervention i.e surgery

Single modality pre-hab looking at _exercise_ or _nutrition_ interventions most commonly employed[1]

Multi-modality intervention more beneficial

Fits into the continuum of care prior to other interventions such as ERAS

Prehabilitation Protocol – what does this look like in MBS

- Identify risk factors

- Management of modifiable risk factors
    - Nutrition intervention
    - Exercise physiology
    - Psychological support
    - Perioperative medicine
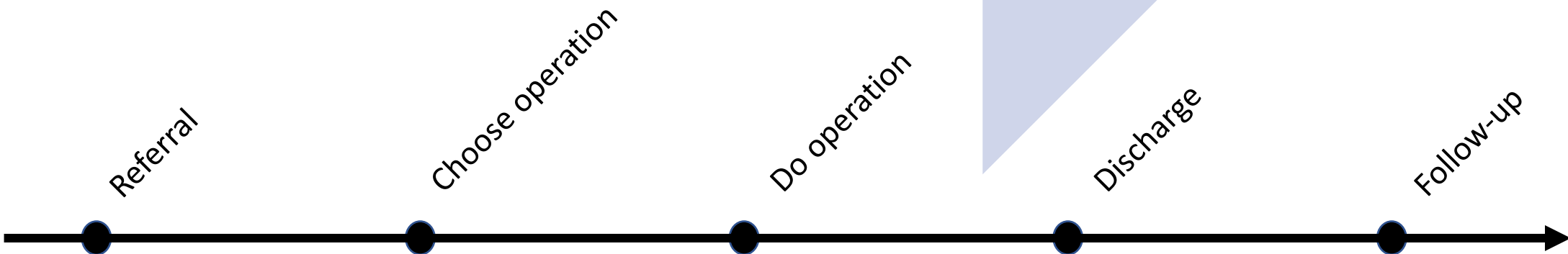
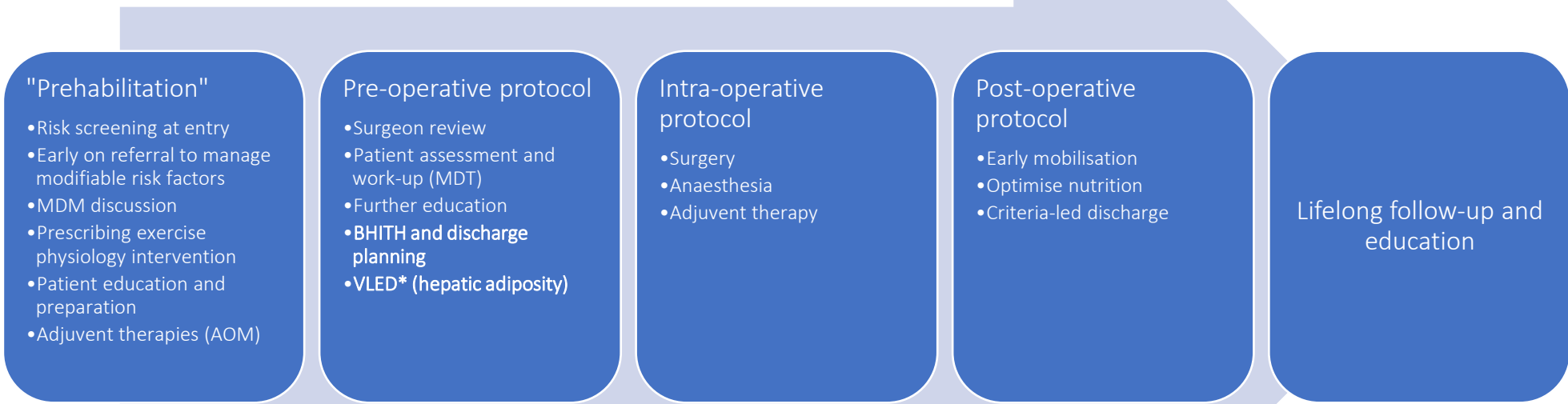- Early education and preparation
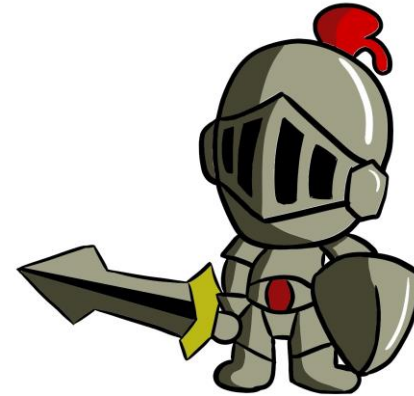
> **Usually implemented PRIOR to immediate lead up to surgery and often only delivered as single interventions as needed**
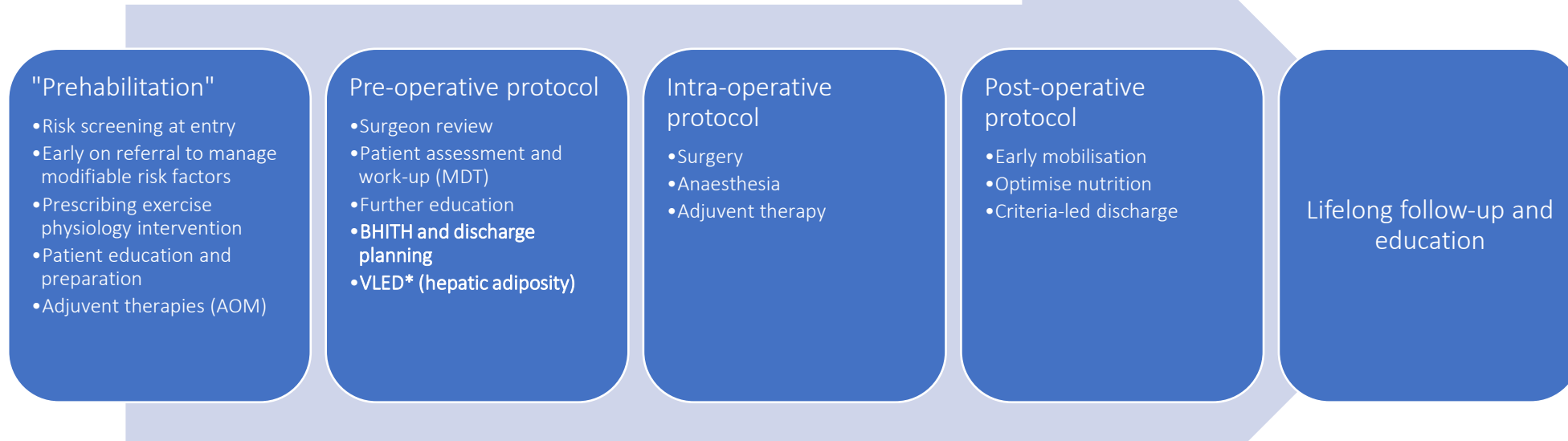
Reframing preparation for surgery

PR-ERAS concept at Austin Health

"Prehabilitation"
- Risk screening at entry
- Early on referral to manage modifiable risk factors
- MDM discussion
- Prescribing exercise physiology intervention
- Patient education and preparation
- Adjuvent therapies (AOM)

Pre-operative protocol
- Surgeon review
- Patient assessment and work-up (MDT)
- Further education
- **BHITH and discharge planning**
- **VLED* (hepatic adiposity)**

Intra-operative protocol
- Surgery
- Anaesthesia
- Adjuvent therapy

Post-operative protocol
- Early mobilisation
- Optimise nutrition
- Criteria-led discharge

Lifelong follow-up and education

Referral

Choose operation

Do operation

Discharge

Follow-up

PR-ERAS concept at Austin Health

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Pre-operative protocol

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Intra-operative protocol

- Surgery
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- Adjuvent therapy

Post-operative protocol

- Early mobilisation
- Optimise nutrition
- Criteria-led discharge

Lifelong follow-up and education

Team owned, team driven, team outcomes

Benefits of PR-ERAS

1. **Reduced physiological stress from surgery**
2. **Standarisation**
3. <u>**Enhanced**</u> **recovery**

Decreased theatre time
Decreased total LOS
Enhanced clinician autonomy
Improved clinician satisfaction
Improved patient satisfaction

Viable in nearly all population groups and is safe, resource efficient healthcare

There is still benefit in implementing components of ERAS if not all

4. Early detection of failure to thrive

Who has a broken foot?

Patient selection for PR-ERAS

Patient selection criteria - Low-risk

BMI to 56* (48 for Males)
(extra testing if >52)

Mild, Mod or Severe OSA
(CPAP if Mod or severe)

Up to 3 of:
- Hypertension
- Ischaemic heart disease
- Stroke
- Diabetes
- Vascular disease
- Respiratory Disease
- Renal impairment

Table 2 Obesity surgery patient demographics

Variable	Obesity patients (n = 387)
Demographics	
Age, mean in years (±SD)	44.2 (±12.7)
Male, n (%)	330 (85)
Female, n (%)	57 (15)
BMI, mean in kg/height^2 (±SD)	48.3 (±6.67)
Comorbidities, n (%)	
T2DM[a]	85 (22)
OHGA + Insulin	10 (12)
OHGA only	60 (71)
Insulin only	3 (3)
Diet	12 (14)
Hypertension[a]	141 (36)
Sleep apnoea[a]	143 (37)
Hyperlipidaemia[a]	128 (33)
Renal Failure	7 (2)
Reflux	155 (40)
Metabolic Syndrome associated comorbidities, n (%)	
≥1	245 (63)
≥2	151 (39)
≥3	76 (20)
≥4	25 (6)

[a]Comorbidities associated with metabolic syndrome.

OHGA, oral hypoglycaemic agent; SD, standard deviation; T2DM, type 2 diabetes mellitus.

Newbold R, Craven A, Aly A. Efficacy of patient selection criteria for obesity surgery in a non-high-dependency unit/intensive care unit facility. ANZ J Surg. 2021 Jul;91(7-8):1528-1533. doi: 10.1111/ans.16960. Epub 2021 May 24. PMID: 34031972.

Patient selection criteria

Low-acuity setting

No ICU/HDU back up

No option for out of hours re...

1.4km away from main camp...

No onsite dietitian

No onsite 'Unit'

LOW RISK
Exclude from prehab

selection criteria for obesity surgery in a
...y unit/intensive care unit facility

...n and Ahmad Aly

Victoria, Australia

...y surgery versus laparoscopic cholecystectomy

	Obesity and metabolic surgery (n = 387), n (%)
RTT at low acuity centre	0 (0)
Transfer to main campus	15 (3.9)
RTT	2 (0.5)
HDU admission	8 (2.1)
Total RTT	2 (0.5)
Hospital representation	26 (6.8)
ED presentation	20 (5.2)
Admission	6 (1.6)
Clinic Admission	3
Transfer[a]	2
Elective admission	1
RTT	5 (3.1)
Total Readmissions	12 (3.1)
RTT	7 (1.8)
Deaths	0

...n peripheral hospitals. Bold values emphasis on p-vale <0.05 which denotes statistical significance.

ED, emergency department; HDU, high-dependency unit; RTT, return to theatre.

Newbold R, Craven A, Aly A. Efficacy of patient selection criteria for obesity surgery in a non-high-dependency unit/intensive care unit facility. ANZ J Surg. 2021 Jul;91(7-8):1528-1533. doi: 10.1111/ans.16960. Epub 2021 May 24. PMID: 34031972.

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High-risk

Society for Obesity and Bariatric Anaesthesia

Anaesthesia for patients living with obesity guideline (2022)

HIGH RISK
Consider what is modifiable

OS-MRS Calculator
tools.farmacologiaclinica.info

SOBA App
https://apps.apple.com/gb/app/soba-uk-app/id1549542383
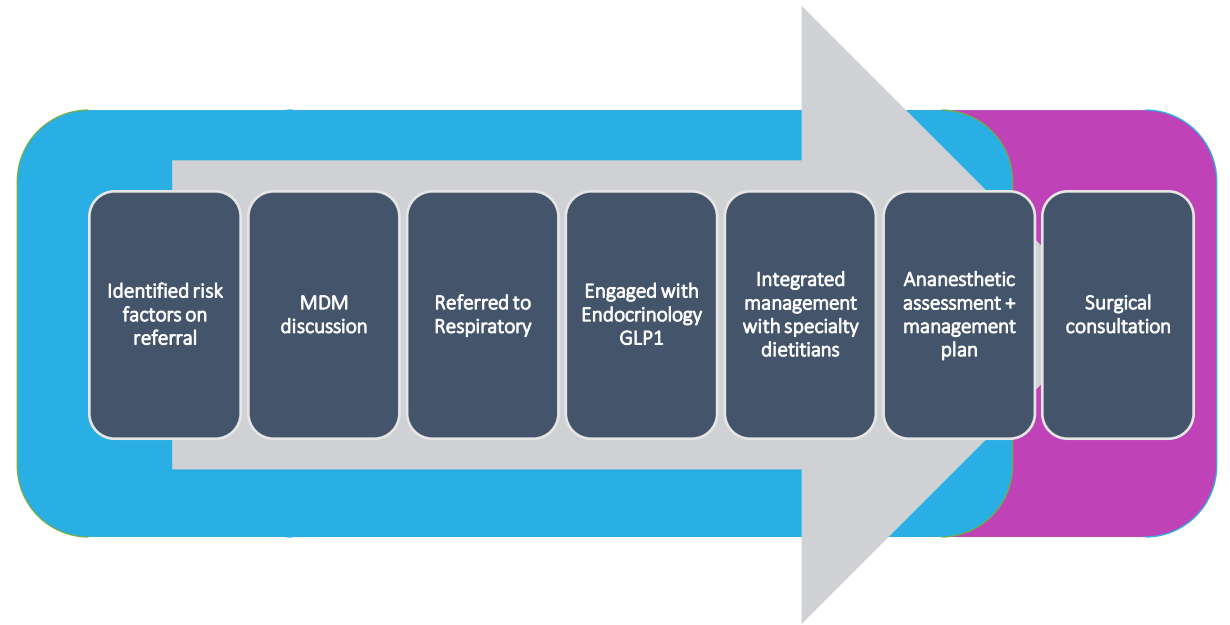
STOPBANG Calculator
www.stopbang.ca

Case 1 – MY

56 year old male
Assessed for primary MBS

Weight: 138kg

Medical history: End-stage renal failure on dialysis, HTN, severe OSA (untreated $), MAFLD, unstable T2DM, malnutrition + FR

Weight precluding lifesaving renal transplant

Risk assessment: Excessively high, EOSS 4

| Identified risk factors on referral | MDM discussion | Referred to Respiratory | Engaged with Endocrinology GLP1 | Integrated management with specialty dietitians | Ananesthetic assessment + management plan | Surgical consultation |

Unstable T2DM – now stable
Malnutrition – improved
Severe untreated OSA – severe treated OSA
Balanced risk assessment + prehab facilitated MBS

= 50kg TBWL, waitlisted for transplant

Prehab outcome type 1: Excessively high risk identified early, modified to HIGH RISK + facilitated lifesaving treatment

Case 2 - EN

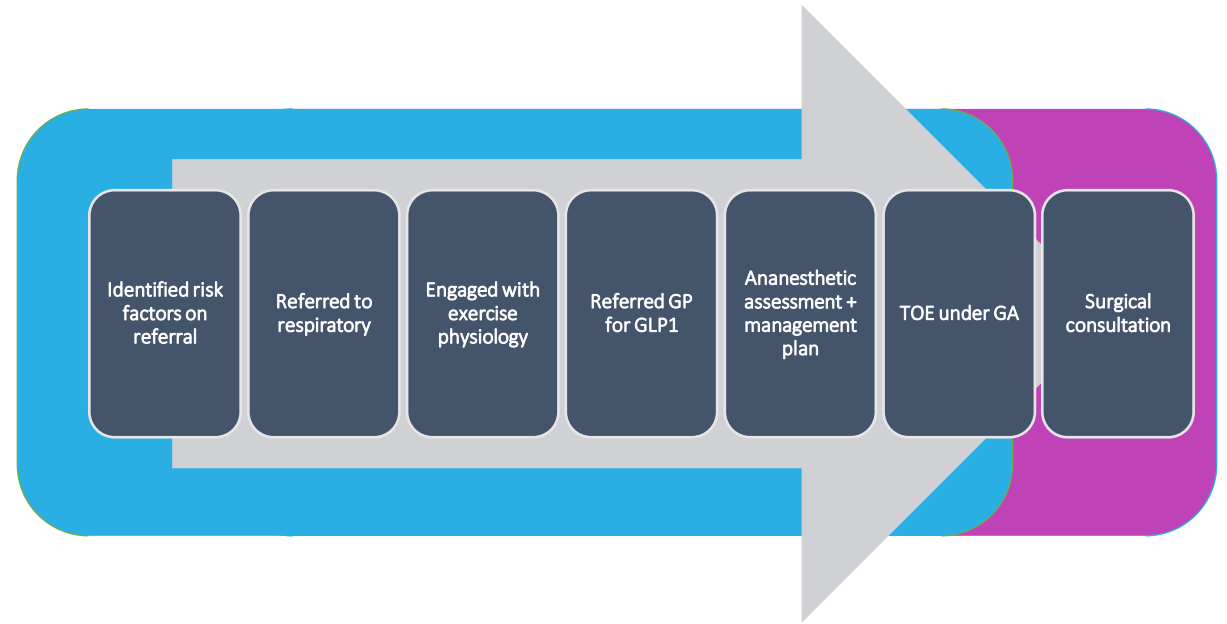40 year old female
Assessed for primary MBS

Weight 260kg – lifelong obesity

Medical History: T2DM, PCOS,
HTN, hypothyroidism, MAFLD,
endometrial hyperplasia,
wheelchair bound

And

Suspected OSA
'Presumed' heart disease

Risk assessment: HIGH, EOSS 3

Identified risk factors on referral	Referred to respiratory	Engaged with exercise physiology	Referred GP for GLP1	Ananesthetic assessment + management plan	TOE under GA	Surgical consultation

Identified severe OSA – treated with CPAP
Significant function impairment – now limited mobility
Presumed heart disease – non-existent
Metabolic disease - stable

Prehab outcome type 2: HIGH RISK identified early, modified to LOW/MOD
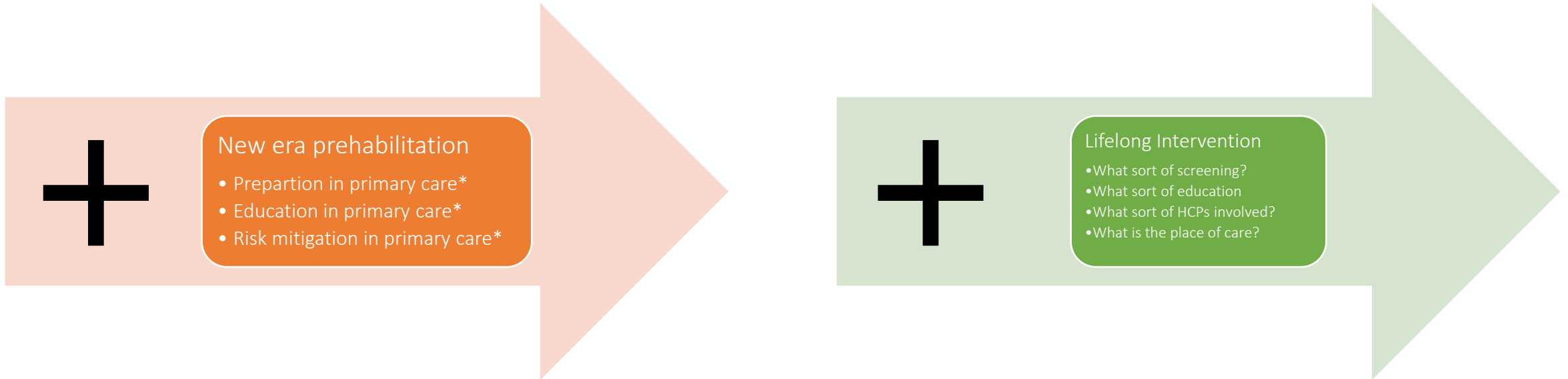**RISK all before initial surgeon consultation**

Key take homes

The PR-ERAS method is a safe, effective tool for use in **ALL** patients in preparation for MBS

PR-ERAS is an attitude *not* a pathway on a piece of paper

Integration for progress – use PR-ERAS as the basis of forming a high-performing _team_

Future Direction of PR-ERAS – Integrate for Progression

New era prehabilitation
- Prepartion in primary care*
- Education in primary care*
- Risk mitigation in primary care*

Lifelong Intervention
- What sort of screening?
- What sort of education
- What sort of HCPs involved?
- What is the place of care?

PR-ERAS should start in primary care
and exist as a lifelong intervention

Acknowledgements

Dr Alex Craven – UGI and Bariatric Surgeon
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Advanced Surgical
Darebin Weight Loss Surgery

But actually, **the whole team**