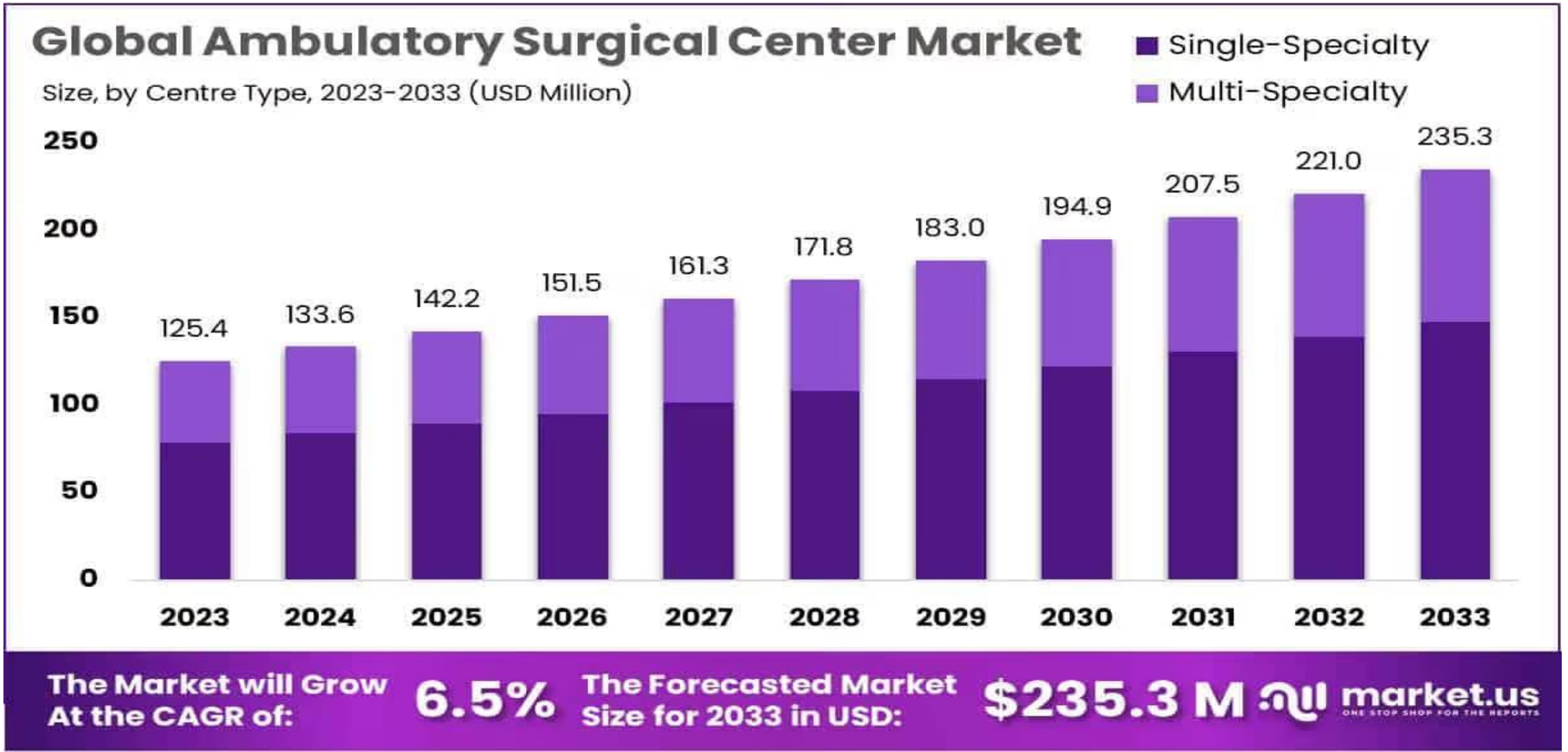
How My Intraoperative Care has Changed with ERAS

Anupama Wadhwa, MBBS, MSc, FASA
Professor of Anesthesiology
University of Texas Southwestern, Dallas, TX
Past President
International Society of Perioperative Care of Patients with Obesity

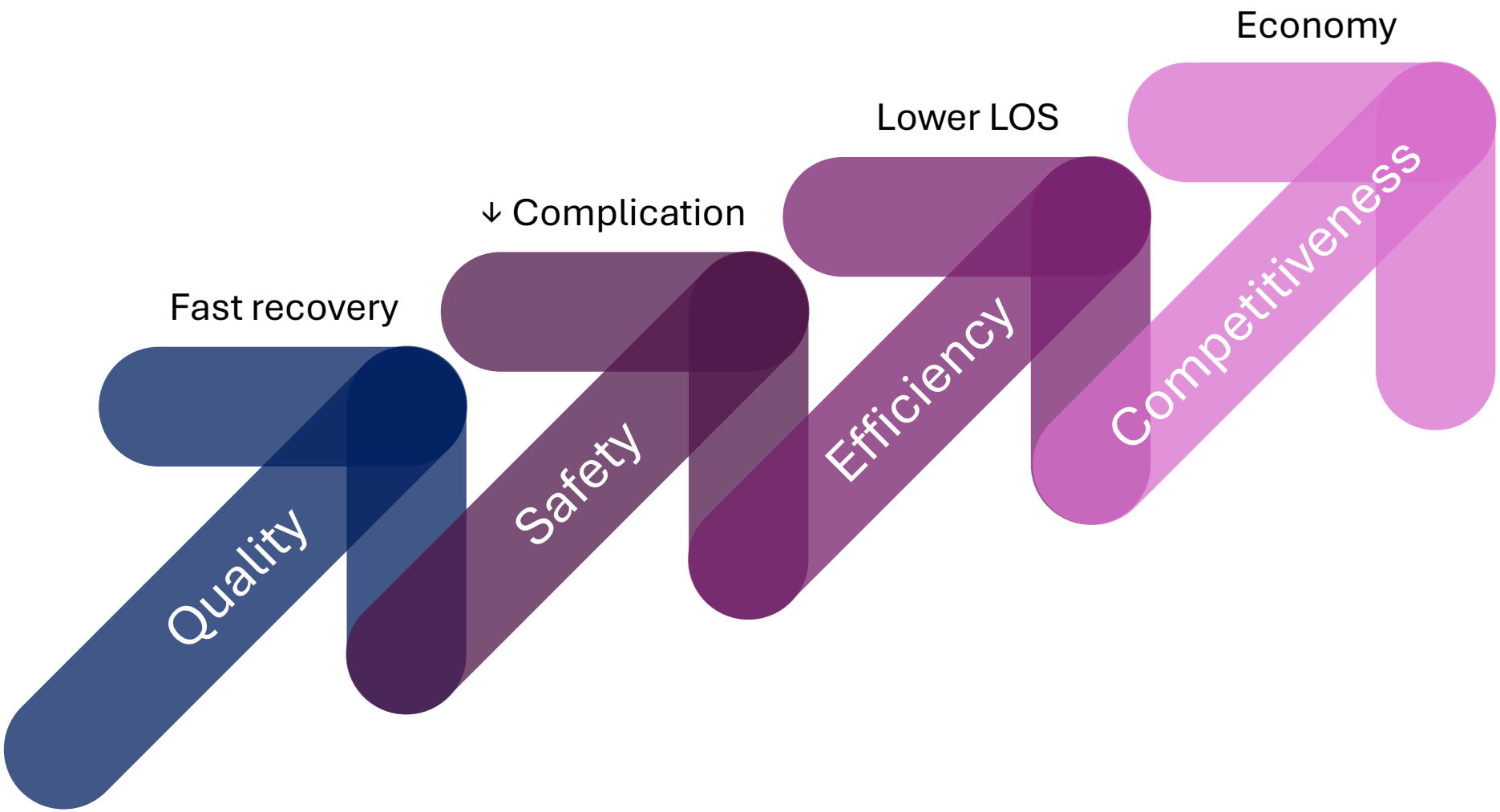
Trends in Ambulatory Surgery



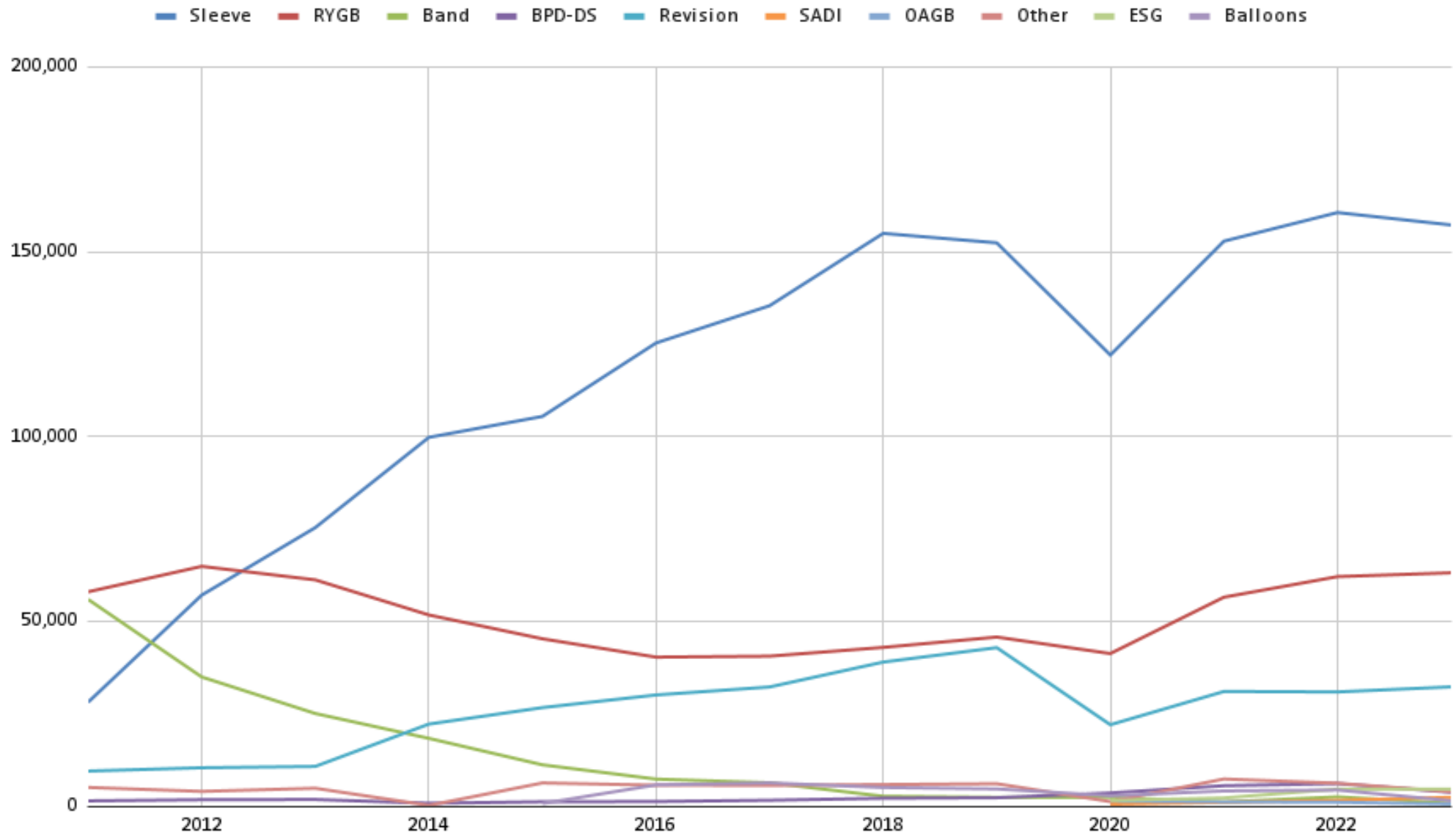
Enhanced recovery after surgery (ERAS)- Components

- ERAS is a comprehensive **multi-disciplinary** approach to surgical patient care to minimize post-operative complications and **reduce recovery time up to 30-50%**
- ERAS pathways aim to return physiological function enhance mobilization, reduce pain and facilitate early oral nutrition postoperatively, thus **reducing perioperative surgical stress**

Core Principles of ERAS

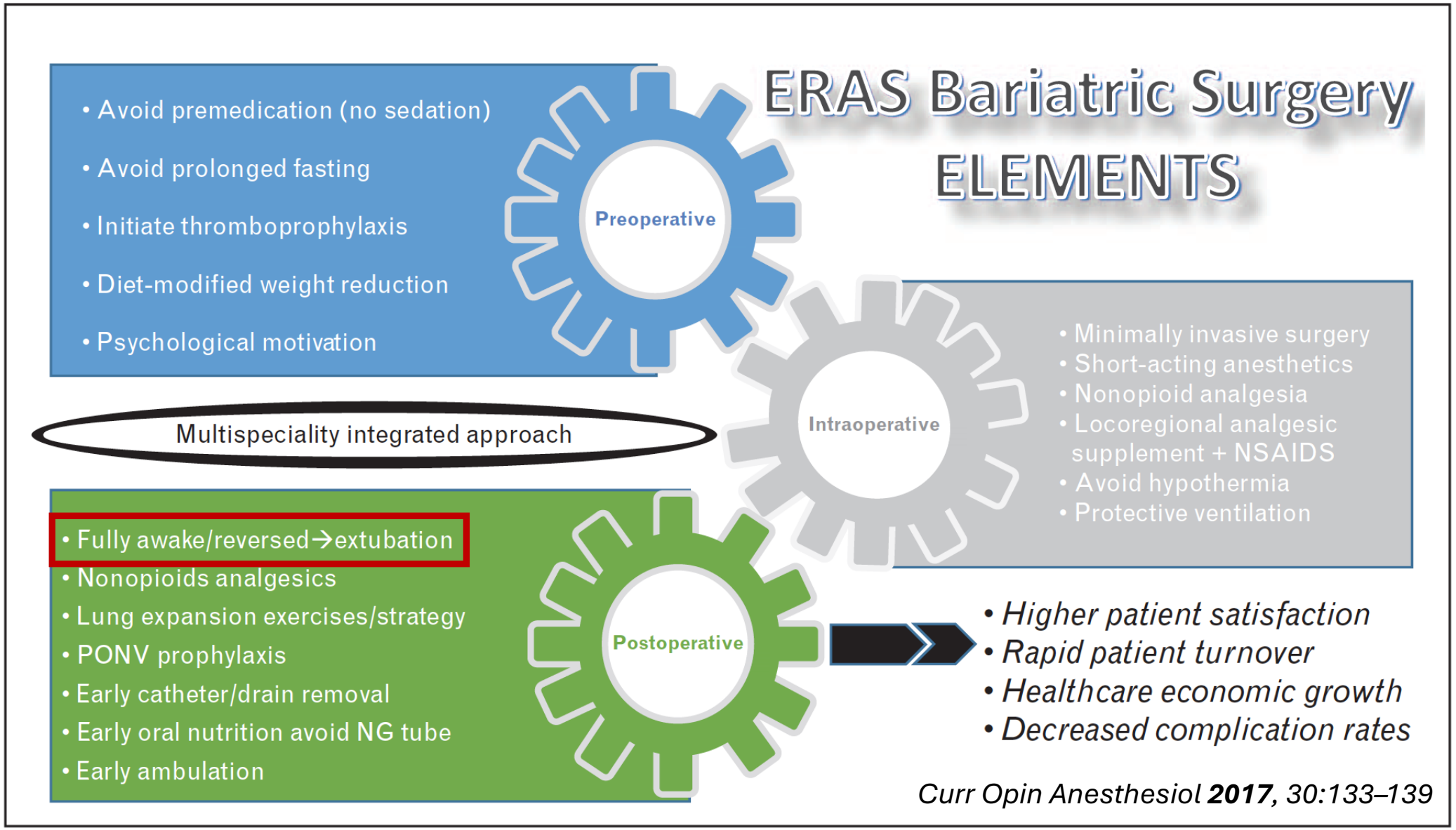


IMMEDIATE RECOVERY


Sleeve
RYGB
Band
BPD-DS
Revision
SADI
OAGB
Other
ESG
Balloons
200,000
150,000
100,000
50,000
0
2012
2014
2016
2018
2020
2022

Enhanced recovery after bariatric surgery

Adrian Alvarez[a], *Basavana G. Goudra*[b], *and Preet Mohinder Singh*[c]



Curr Opin Anesthesiol ***2017,*** *30:133–139*

PATIENT SATISFACTION

Intraoperative Care

- General Anesthesia
  - Prompt Airway Management
- Opioid Sparing or Opioid Free Multimodal Analgesia
  - IV Paracetamol
  - IV NSAIDs
  - IV Ketamine
  - IV Dexmedetomidine
- Normothermia
- Euvolemia
- Quantitative TOF monitoring

Airway Management-Minimizing Hypoxemia

Position 1

Position 2

Position 3

PREOXYGENATION-8 MINUTES

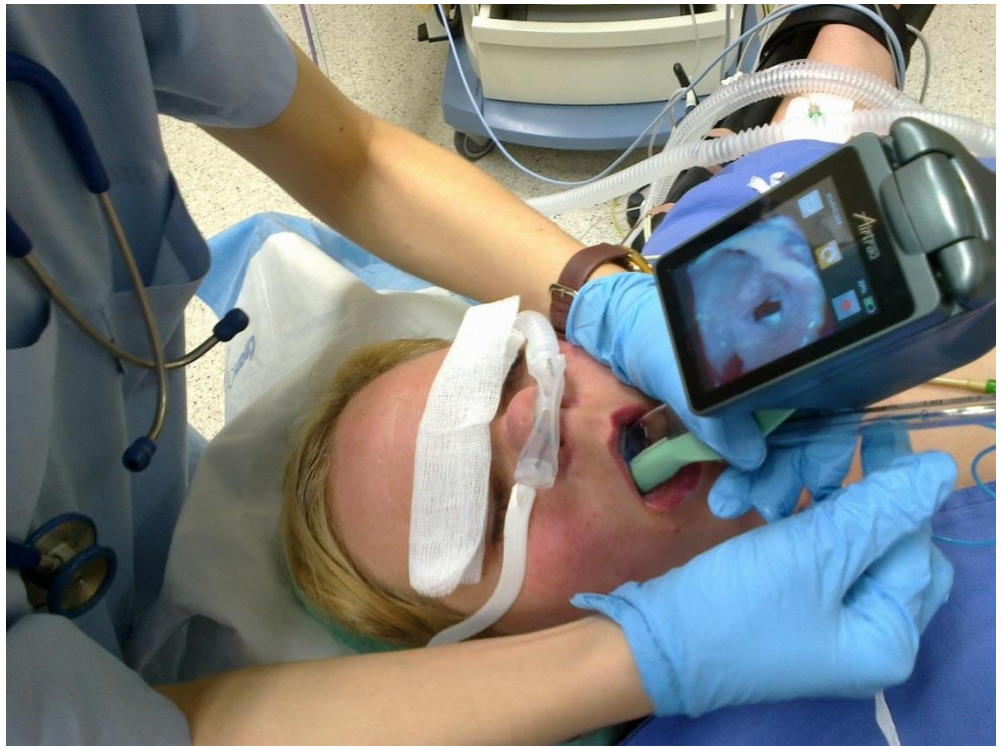
Respiration and Sleep Medicine

Section Editor: David Hillman

High-Flow Nasal Oxygen Improves Safe Apnea Time in Morbidly Obese Patients Undergoing General Anesthesia: A Randomized Controlled Trial

David T. Wong, MD,* Amelie Dallaire, MD,* Kawal Preet Singh, MD,* Poorna Madhusudan, MD,* Timothy Jackson, MD,† Mandeep Singh, MD,* Jean Wong, MD,* and Frances Chung, MBBS*

(Anesth Analg 2019;129:1130–6)



High-Flow Nasal Oxygenation Group (n = 20)

261.4 ± 77.7

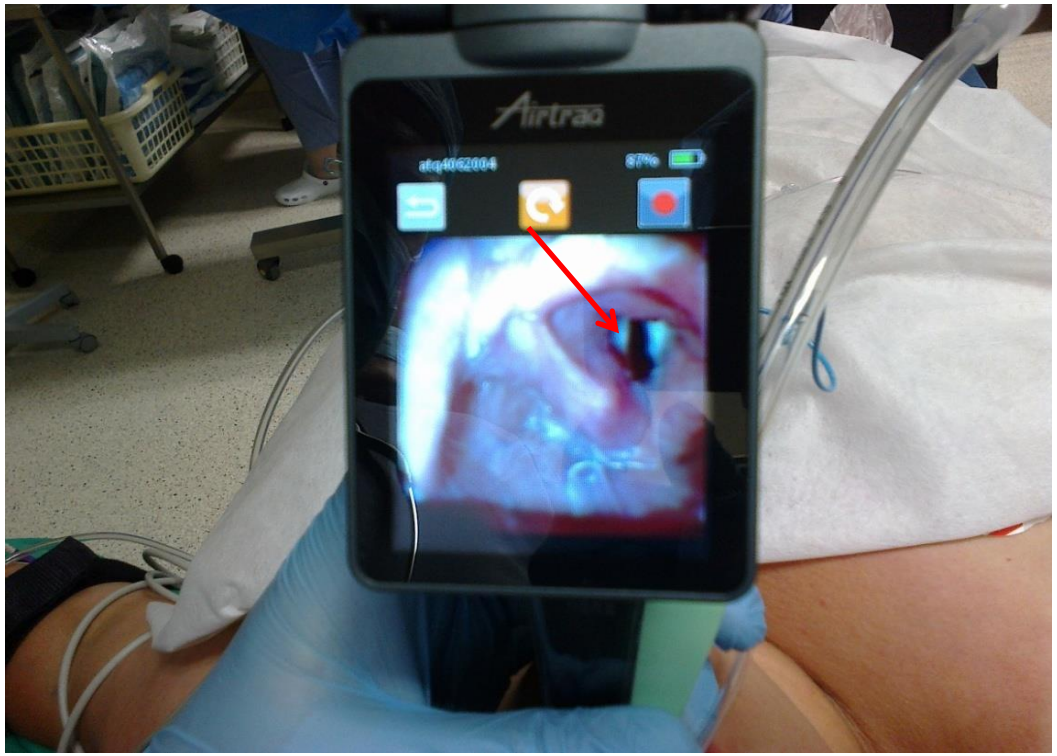
Anaesthesia, 2007, 62, pages 769–773 doi:10.1111/j.1365-2044.2007.05104.x

Supplementation of pre-oxygenation in morbidly obese patients using nasopharyngeal oxygen insufflation

A. S. Baraka,[1] S. K. Taha,[2] S. M. Siddik-Sayyid,[2] G. E. Kanazi,[2] M. F. El-Khatib,[2] C. M. Dagher,[3] J.-M. A. Chehade,[3] F. W. Abdallah[3] and R. E. Hajj[3]

1 Professor and Chairman, 2 Associate Professor, 3 Resident, Department of Anaesthesiology, American University of Beirut, P. O. Box 11-0236, Beirut 1107-2020, Lebanon

- In the control group, the SpO2 fell from 100% to 95% during the subsequent apnoea in 145 (27) s, with a significantly negative correlation between the time to desaturation to 95% and the body mass index.
- In the study group, the SpO2 was maintained in 16 of 17 patients at 100% for **4 min** when apnoea was terminated



Patient Safety

Section Editor: Richard C. Prielipp

Apneic Oxygenation During Prolonged Laryngoscopy in Obese Patients: A Randomized, Controlled Trial of Buccal RAE Tube Oxygen Administration

Andrew Heard, FRCA,* Andrew J. Toner, FRCA,* James R. Evans, FRCA,*
Alberto M. Aranda Palacios, FRCA,*† and Stefan Lauer, MD*‡

(Anesth Analg 2017;124:1162–7)

- Recipients of buccal oxygenation were less likely to exhibit Spo2 < 95% during 750 seconds of apnea;

Figure 2. Adapted Ring-Adair-Elwyn (RAE) tube secured for oxygen delivery to the left buccal space.

Figure 1. Adapted 3.5-mm south-facing Ring-Adair-Elwyn (RAE) tube for administration of buccal oxygen. Pictures from left to right show intact apparatus, connector removed, and distal tube cut above Murphy eye, modified apparatus with auxiliary oxygen tubing attached to cut end.

Nasal CPAP for apneic oxygenation during intubation

Nasal Continuous Positive Airway Pressure During Intubation in Superobese Patients Prolongs Safe Apnea Period

Figure. Nasal continuous positive airway pressure during intubations efforts with Airtraq (Prodol, Guecho [Vizcaya], Spain) videolaryngoscope.

www.anesthesia-analgesia.org

Tomasz Gaszynski, MD, PhD
Department of Anaesthesiology and Intensive Therapy
Medical University of Lodz

DOI: 10.1213/ANE.0000000000004176

An Innovative Second Seal™

The novel design of the LMA Supreme™ – the result of 20 years of research – enables formation of a proven double seal.

The LMA Supreme™ forms two seals: an effective First Seal™ with the oropharynx (oropharyngeal seal) and an innovative Second Seal™ with the upper oesophageal sphincter (the oesophageal seal).

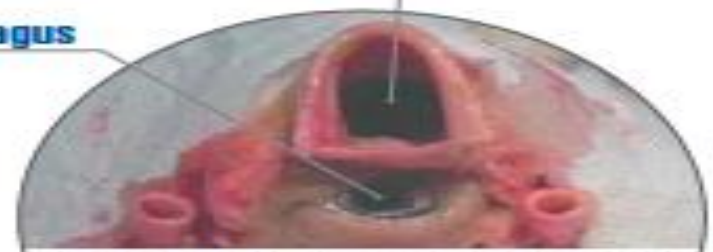


Image of the LMA Supreme™ as it sits within the upper oesophageal sphincter. Image demonstrates how the novel cuff and tip shape achieve the required position and depth for Second Seal™ formation with the upper oesophageal sphincter.

Fixation Tab

Facilitates optimal positioning within the oropharynx, hypopharynx and upper oesophagus to protect the integrity of the First Seal™ and the Second Seal™.

Integral Bite Block

LMA Evolution Curve™

Elliptical and anatomically shaped LMA Evolution Curve™ (airway tube) facilitates insertion success.[1]

Anatomical Conformity

Low volume inflation enables conformity of the mask to the anatomy – seal is formed by matching shape not mucosal pressure.[2]

Drain Tube

An optimised distal tip with gastric access designed to functionally separate the digestive and respiratory tracts.[3]

First Seal™

Second Seal™

Elongated Cuff

Newly designed for improved anatomical fit to support an effective First Seal™ and Second Seal™.[1,3,4]

World J Surg
DOI 10.1007/s00268-016-3492-3

SCIENTIFIC REVIEW

Guidelin
Recovery

A. Thorell[1] · A
A. Alvarez[8] · F

Abstract
Background
formed worl
to present su
perioperative
Methods T
attention pai
were examin
consensus re
Results Alt
orectal), mos
Conclusions
enhanced re
Surgical M
elements of

✉ A. Thorell
anders.thorel

1 Karolinska I
Danderyds H
Hospital, 11

2 Department
New Zealand

3 Department
Auckland, New Zealand

4 The East-Midlands Bariatric & Metabolic Institute, Derby Teaching Hospitals NHS Foundation Trust, Royal Derby Hospital, Derby DE22 3NE, UK

Sciences, New Delhi 110029, India

10 Gastrointestinal Surgery, National Institute for Health Research Nottingham Digestive Diseases Biomedical Research Unit, Nottingham University Hospitals and

INTRAOPERATIVE

Guidelines for Perioperative Care in Bariatric Surgery (ERABS)

- Preoperative information and education
- Prehabilitation and exercise
- Smoking and alcohol cessation
- Preoperative weight loss
- Glucocorticoids
- Preoperative fasting
- Carbohydrate loading

9. NEUROMUSCULAR BLOCK

Deep NMB
WEAK recommendation

Ensuring full reversal of NMB
Objective monitoring with TOF
STRONG recommendation

- Postoperative analgesia
- Thromboprophylaxis
- Early postoperative nutrition
- Non-invasive positive pressure ventilation

World J Surg. 2016 Sep;40(9):2065-83.

Electromyography

Measures compound muscle action potentials evoked by neurostimulation

Many different muscles can be examined- Does not require freely moving limbs

Easy and fast set up and short calibration

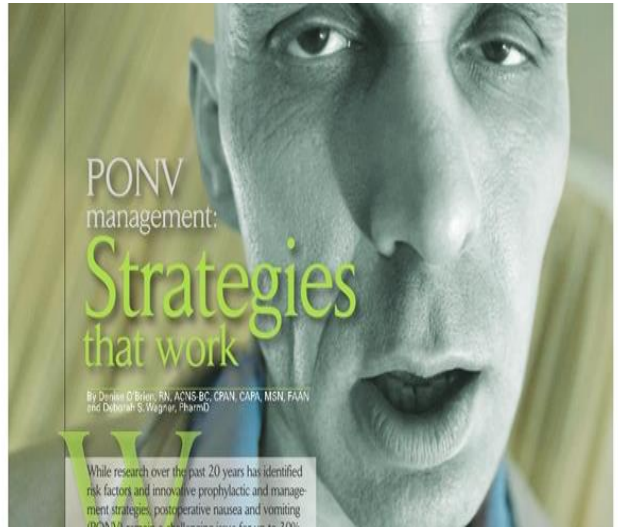
Possible interference from other electrical equipment (electrocautery)

Ulnar nerve – adductor pollicis, abductor digiti minimi and first dorsal interosseous muscles;

Posterior tibial nerve - flexor hallucis brevis muscle;

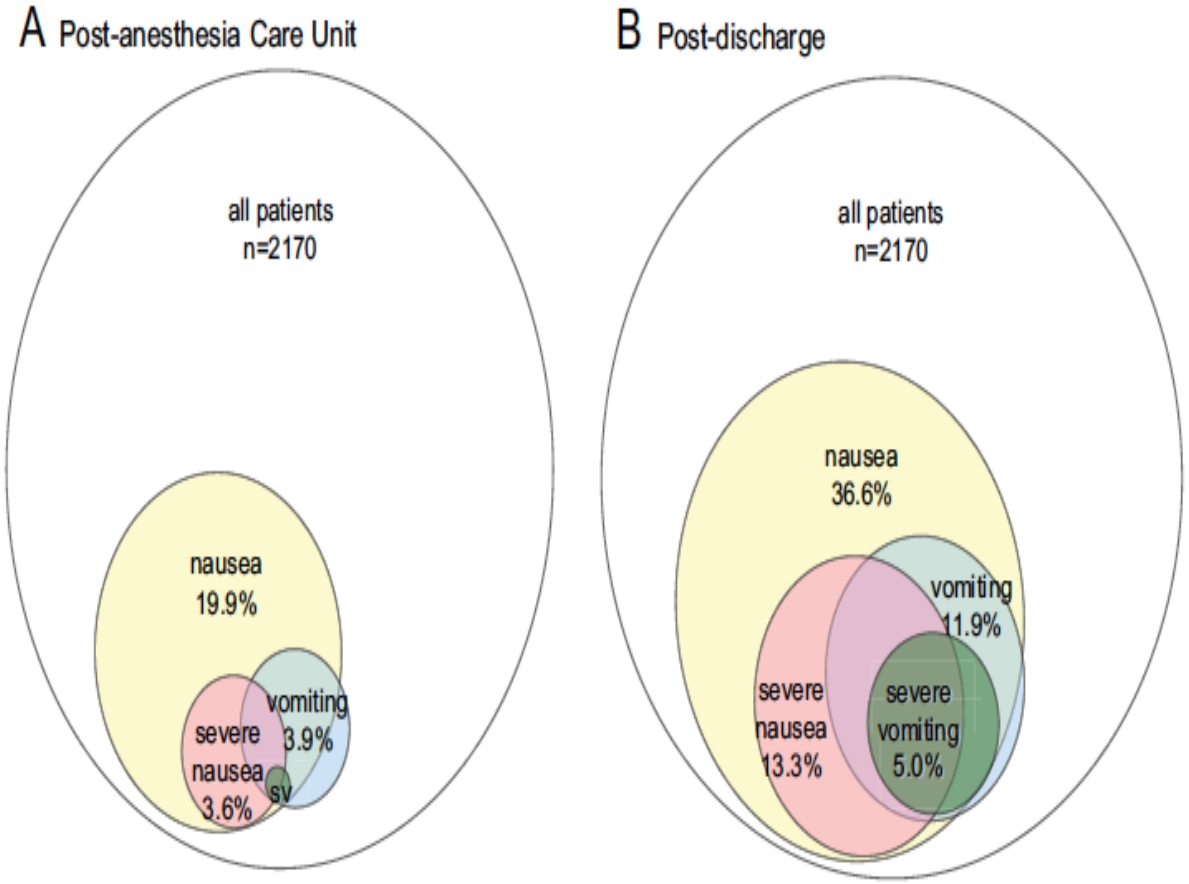
Phrenic nerve - diaphragm

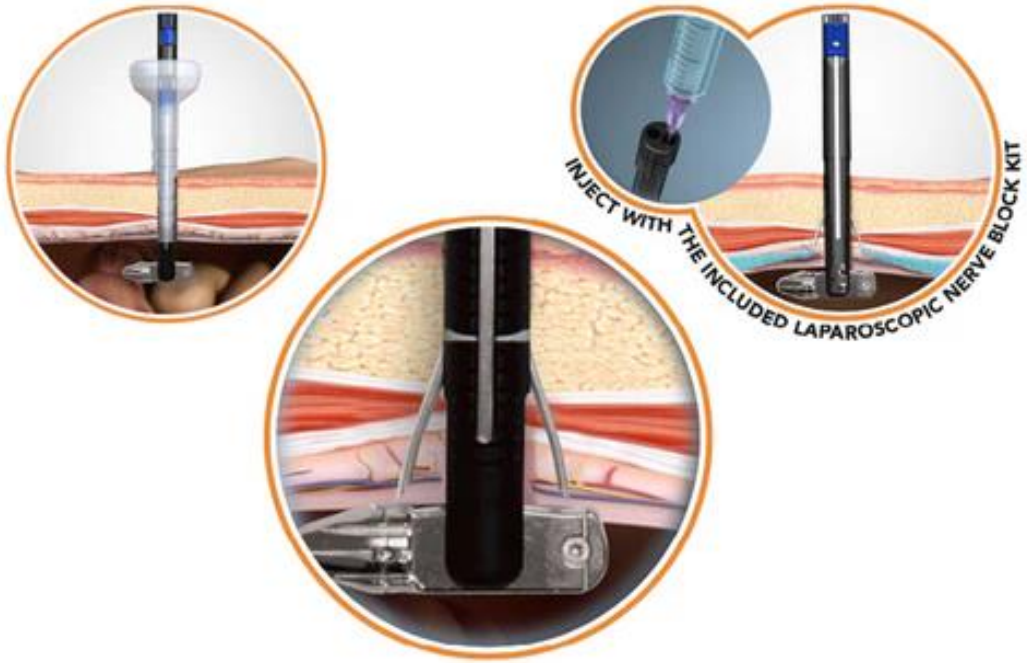
PONV in ERAMBS



- Preoperative
  - Scopolamine patch *and*
  - Aprepitant 40 mg/ Fosaprepitant IV
- Intraoperative
  - Opioid sparing or Opioid Free Anesthesia
  - Dexamethasone *and*
  - 5 HT-3 antagonist-Ondansetron *and*
  - Low dose Propofol infusion
- Postop
  - Metoclopramide or
  - Promethazine or
  - Repeat Ondansetron Solutab/IV
  - Droperidol

POST DISCHARGE NAUSEA AND VOMITING





Regional Anesthesia Techniques

THANK YOU FOR YOUR ATTENTION