Patient selection

Preoperative assessment of patients scheduled for day surgery

Turku April 25th

Jan G. Jakobsson
MD, PhD, Adj Professor
Anaesthesia & Intensive Care
Institution for Physiology & Pharmacology
Karolinska Institutet
Deprt Anaesthesia & Intensive Care
Danderyds University Hospital
Stockholm
SWEDEN
Jan.Jakobsson@ki.se

Preoperative assessment

- Exchange of information
  - Patient to healthcare
  - Healthcare to patients
- Optimisation of medical conditions
- Planning for optimal care

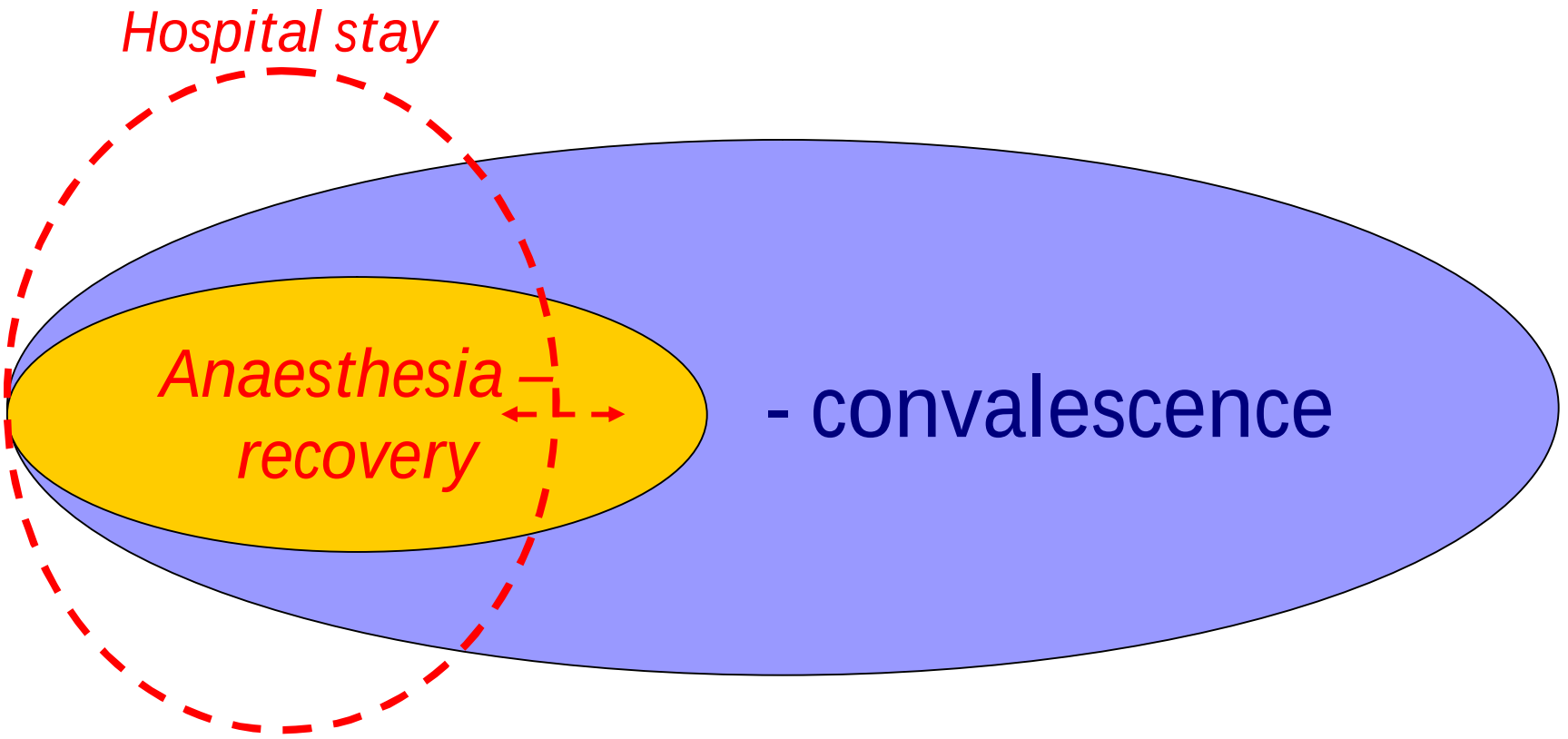
Suitable or not suitable?

Patient selection;

benefit of surgery vs. risk associated to surgery/anaesthesia

- Inpatient care
  - Better observation
    - Handling of early complications
- **Day surgery**
  - Early ambulation
    - Reduced risk for immobilisation associated adverse effects
      - Thromboembolic
      - Hospital acquired infections
      - Change of environment

Day surgery



Meeting 7 February 1975

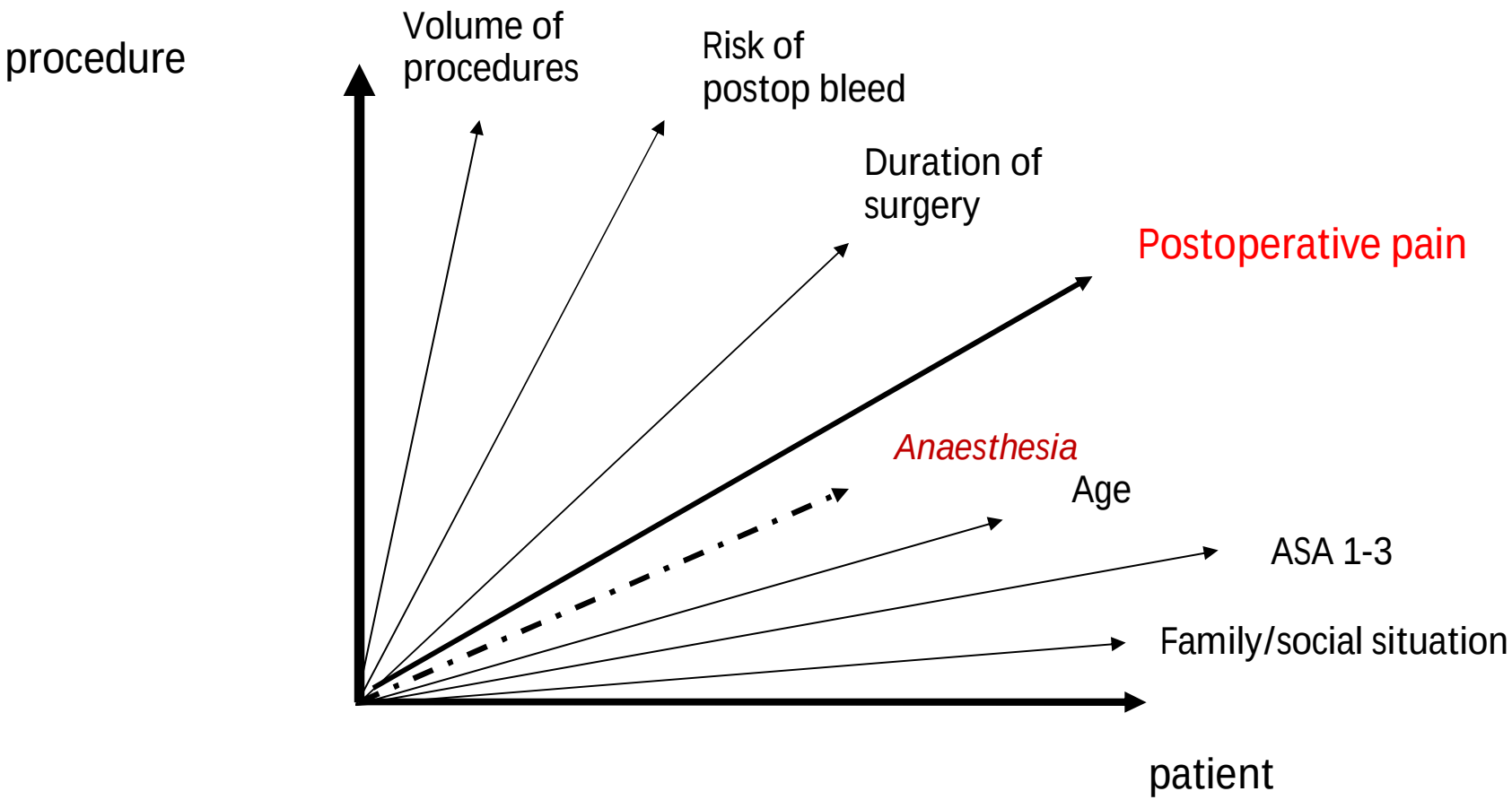
Day-case Anæsthesia

Dr R E Loder
(*Peterborough District Hospital, Peterborough, PE3 6DA*)

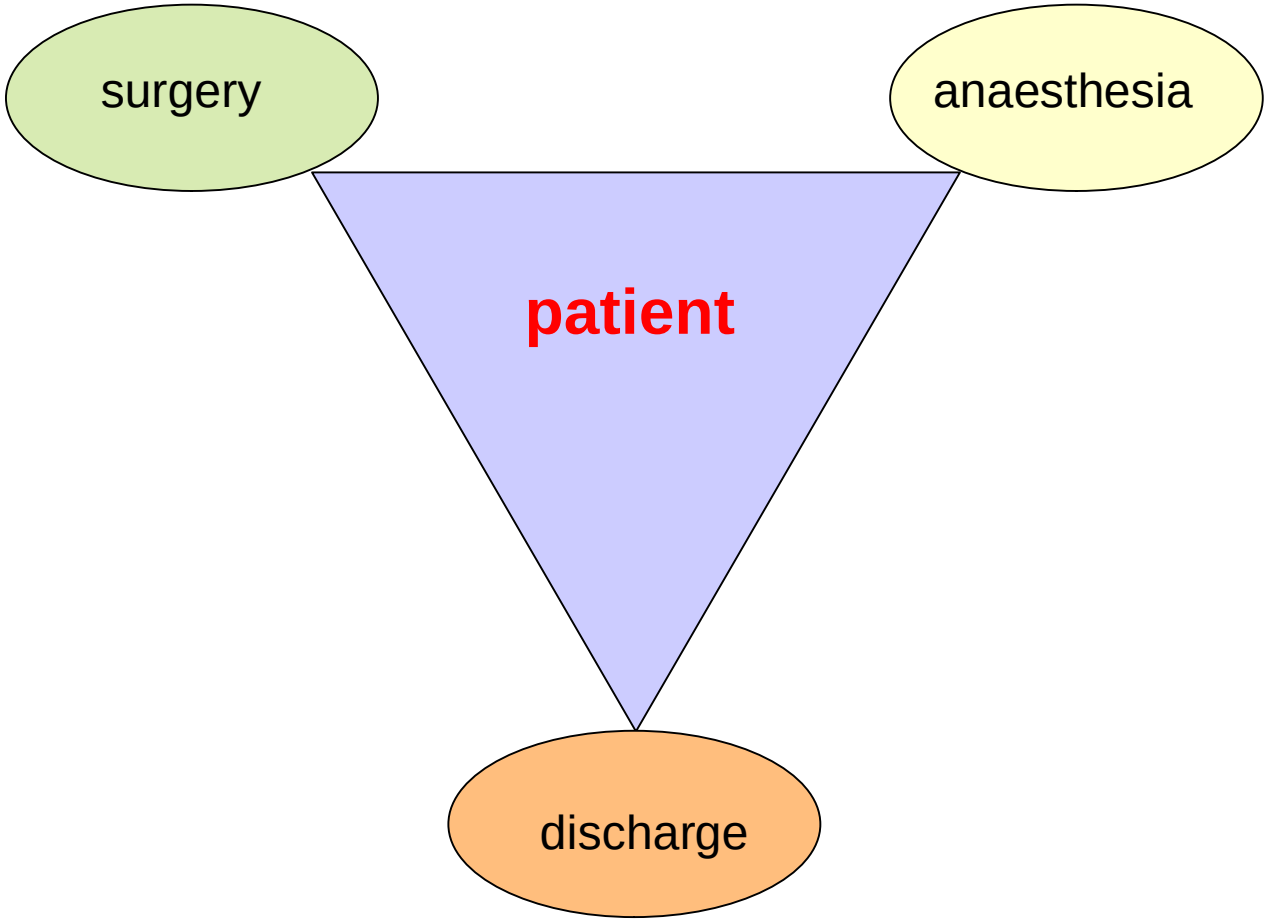
Problems of Organization

The organization of departments which appear to be far removed from the operating theatre has to be considered. These include the ambulance service, the radiological and hæmatological departments, the pharmacy, the day ward staff and, by no means of least importance, the portering staff who bring and fetch from the day theatre. All this applies equally to those hospitals where day surgery of necessity involves the main theatre and ordinary ward nursing staff.

Day surgery selection aspects



Patient in focus



ESA Guidelines 2011

European Society of Anaesthesiology ESA

This summary is reproduced by kind permission of the European Journal of Anaesthesiology. The full guideline is to be cited as:

De Hert S, Imberger G, Carlisle J, Diemunsch P, Fritsch G, Moppett I, Solca M, Ständer S, Wappler F, Smith AF. Guidelines for preoperative evaluation of the adult non-cardiac surgery patient; The Task Force on Preoperative Evaluation of the Adult Patient of the European Society of Anaesthesiology. *European Journal of Anaesthesiology* 2011; 28: 684-722.

38 pages!

Table **Grades of recommendation used in the guideline**

A	at least one meta-analysis, systematic review of RCTs, or RCT rated as **1++** AND directly applicable to the target population ***or*** a body of evidence consisting principally of studies rated as **1+**, directly applicable to the target population AND with an overall consistency of results
B	a body of evidence including studies rated as **2++**, directly applicable to the target population AND with an overall consistency of results ***or*** extrapolated evidence from studies rated as **1++** or **1+**
C	a body of evidence including studies rated as **2+**, directly applicable to the target population AND with an overall consistency of results ***or*** extrapolated evidence from studies rated as **2++**
D	evidence level **3** or **4** ***or*** extrapolated evidence from studies rated as **2+**

ESA

1. How, when, and by whom should patients be evaluated pre-operatively?

1. Pre-operative standardized questionnaires may be helpful in improving anaesthesia evaluation in a variety of situations. (grade of recommendation: **D**)

2. If a pre-operative questionnaire is implemented, great care should be exerted in its design (grade of recommendation: **D**), and computer based version should be used whenever possible (grade of recommendation: **C**).

3. Pre-operative evaluation should be carried out with sufficient time before the scheduled procedure to allow for the implementation of any advisable pre-operative intervention aimed at improving patient outcome. (grade of recommendation: **D**)

4. Pre-operative assessment should at least be completed by an anaesthetist (grade of recommendation **D**), but the screening of patients could be carried out effectively by either trained nurses (grade of recommendation **C**) or anaesthesia trainees (grade of recommendation **D**).

5. A pharmacy personnel member may usefully be included in the pre-operative assessment, in order to reduce discrepancies in postoperative drug orders. (grade of recommendation **C**)

6. There is insufficient evidence to recommend that the preferred model is that a patient should be seen by the same anaesthetist from pre-operative assessment through to anaesthesia administration. (grade of recommendation **D**)

What are the **evidence** for safe and efficacious day surgery?

- The experience from the Public Domain literature
  - Analysis of the practice and performance

Assessment and selection of patients for day surgery in a public hospital.

- Med J Aust. **1993 Mar** 1;158(5):308-12. Rudkin GE, Osborne GA, Doyle CE.
- **OBJECTIVE:**
- To describe methods used for adult patient assessment and selection for day case surgery at a major Australian teaching hospital.
- **DESIGN:**
- A prospective analysis of assessment data and information from the unit's computerised database.
- **PATIENTS AND SETTING:**
- Five thousand day patients consecutively admitted to the Day Surgical Unit, Royal Adelaide Hospital.
- **MAIN OUTCOME MEASURES:**
- The proportion of patients assessed only by trained nursing assessment staff was determined and compared with that for patients requiring additional anaesthetic assessment before surgery. The percentage of patients requiring preoperative investigations was established. Unanticipated hospital admission rates were calculated for surgical, anaesthesia-related and social reasons.
- **RESULTS:**
- **After initial screening by a trained assessment nurse, 46% of patients required additional review by an anaesthetist before the day of surgery. The remaining 54% were assessed by an anaesthetist on the day of surgery. Preoperative investigations were ordered by anaesthetists in 8.5% of all day patients. The assessment methods outlined resulted in a 1.28% rate of unanticipated hospital admissions. This admission rate was mostly caused by complications of surgery (0.94%). Only 0.12% of patients were admitted for anaesthesia-related reasons and 0.14% were admitted for social reasons.**
- CONCLUSIONS:
- This cost-effective system allows suitable patients and procedures to be identified, with a satisfactory unanticipated hospital admission rate. Satisfactory assessment also results in short preoperative waiting periods, fewer cancellations, reduced postoperative problems and more satisfied patients. The development of an efficient assessment system is aided by the use of a dedicated day surgery area with experienced nursing staff, the use of a comprehensive patient questionnaire and coordination by experienced day surgery anaesthetists.

An analysis of computer-assisted pre-screening prior to elective surgery.

- Anaesth Intensive Care. **2012 Mar**;40(2):297-304.
- Grant C, Ludbrook GL, O'Loughlin EJ, Corcoran TB.
- In order to assess the potential utility of guided patient self-assessment as an early preoperative triage tool, a computer-assisted questionnaire delivered by a non-clinician via telephone was 1) compared to face-to-face interview and examination by anaesthetists in outpatient clinics and 2) evaluated as a mechanism to stream patients to day of surgery assessment. In total, 514 patients scheduled for elective surgery in two tertiary public hospitals were assessed initially by telephone and then in an outpatient clinic. Both forms of assessment were marked by panels of specialist anaesthetists, who also provided an opinion on which patients would have been suitable to bypass preoperative anaesthetic outpatient assessment based upon information provided by the telephone interview. Overall, the quality of assessment provided by non-clinician telephone interview was comparable to face-to-face interview by anaesthetists, although more complex issues required face-to-face assessment.
- **Panel review considered that 398 patients (60%) would not have required evaluation by an anaesthetist until the day of surgery, thus avoiding the need to separately attend a preoperative outpatient clinic.**
- **The sensitivity of telephone interview provided information to correctly classify patients as suitable for day of surgery evaluation was 98% (95% confidence interval 96 to 99%) with a specificity of 97% (95% confidence interval 92 to 98%).**
- **This study demonstrates that remote computer-assisted assessment can produce quality patient health information and enable early patient work-up and triage with the potential to reduce costs through more efficient use of resources.**

Safety, efficacy, quality cost-benefit…

- **Mortality and morbidity**
  - pain
  - PONV
- Time to discharge
  - **Need for hospital admission**
  - **Return to hospital**

REVIEW

MORTALITY IN ANESTHESIA: A SYSTEMATIC REVIEW

Leandro Gobbo Braz,[I] Danilo Gobbo Braz,[II] Deyvid Santos da Cruz,[I] Luciano Augusto Fernandes,[I] Norma Sueli Pinheiro Módolo,[I] José Reinaldo Cerqueira Braz[I]

- The majority of perioperative deaths occurred in **neonates, children under one year, elderly patients, males, patients of ASA III physical status or poorer, emergency surgeries,**
- during general anesthesia, and cardiac surgery followed by thoracic, vascular, gastroenterologic, pediatric and orthopedic surgeries.
- The main causes of anesthesia-related mortality were problems with airway management and cardiocirculatory events related to anesthesia and drug administration.

CLINICS 2009;64(10):999-1006

Surgical Risk Factors, Morbidity, and Mortality in Elderly Patients

Florence E Turrentine, PhD, Hongkun Wang, PhD, Virginia B Simpson, NP, MS, R Scott Jones, MD, FACS

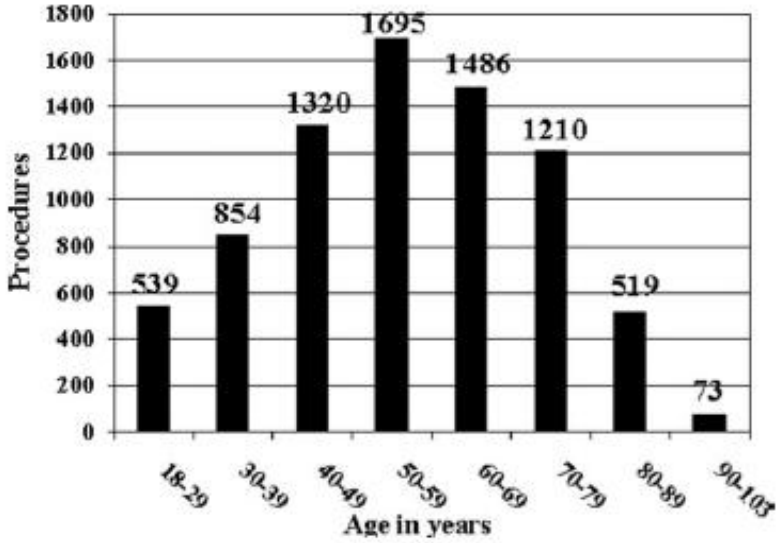


Figure 1. Distribution of surgical volume.

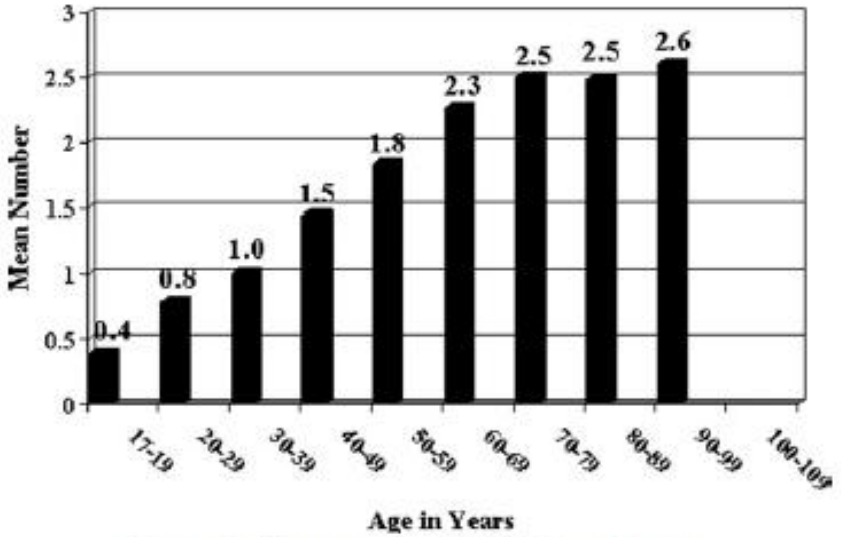


Figure 2. Mean number of risk factors by age.

J Am Coll Surg 2006;203:865–877.

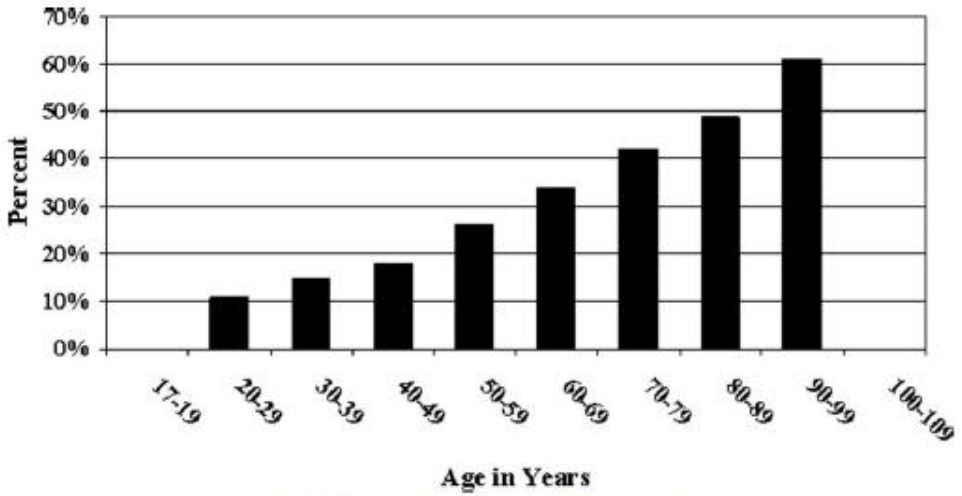


Figure 3. Surgical morbidity by decade.

Age is a risk factor but it is also related to functional capacity/co-morbity

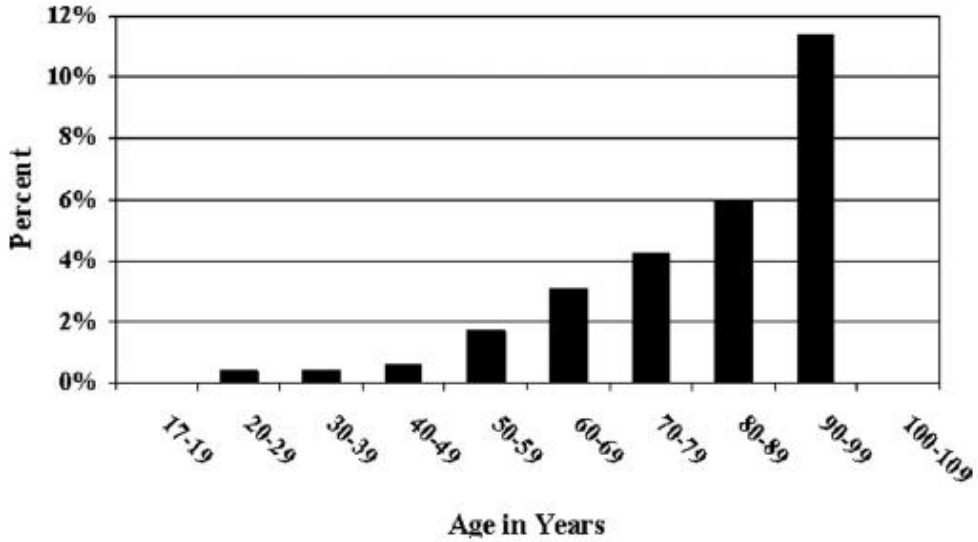
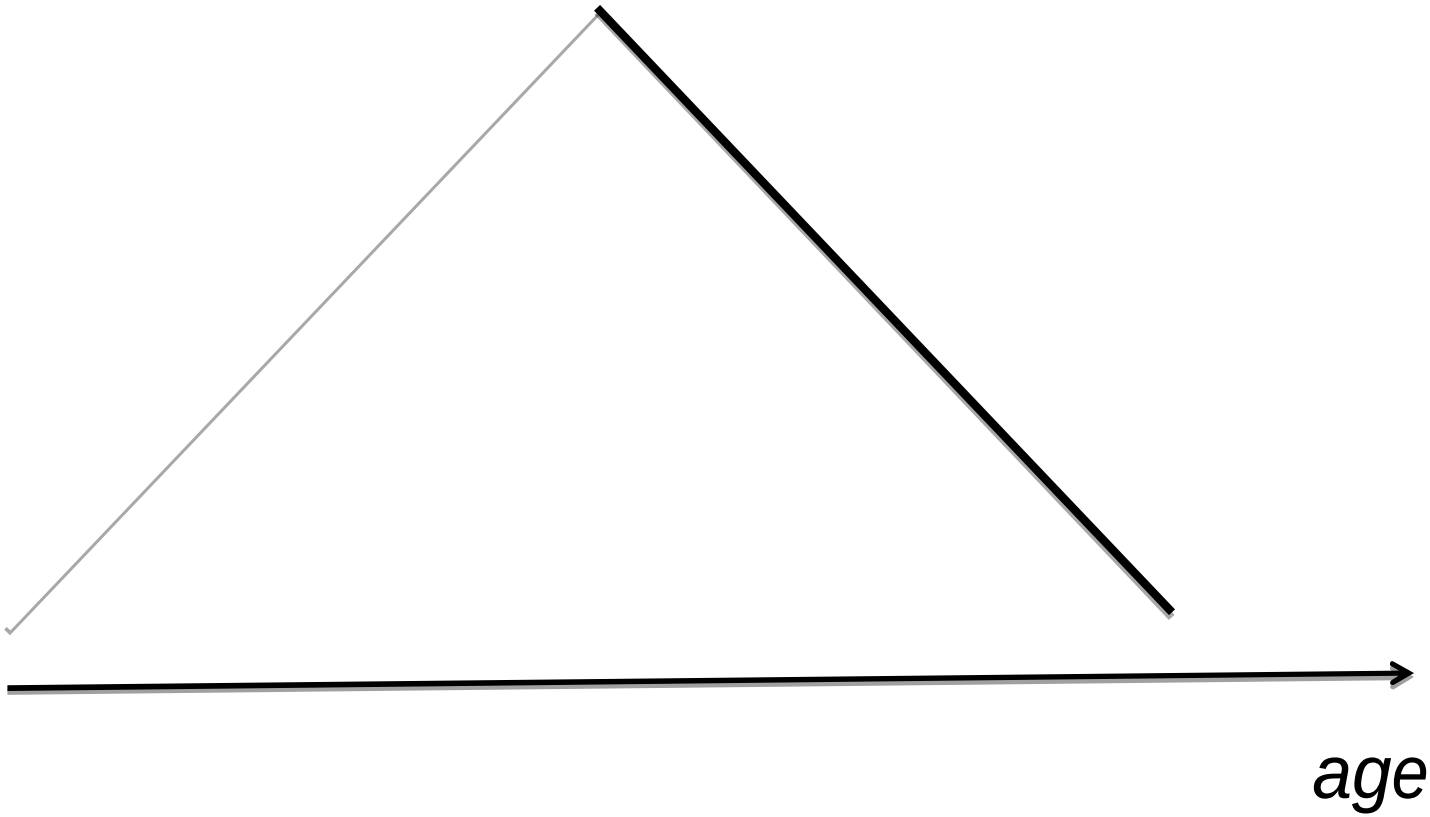


Figure 4. Surgical mortality by decade.

Aging

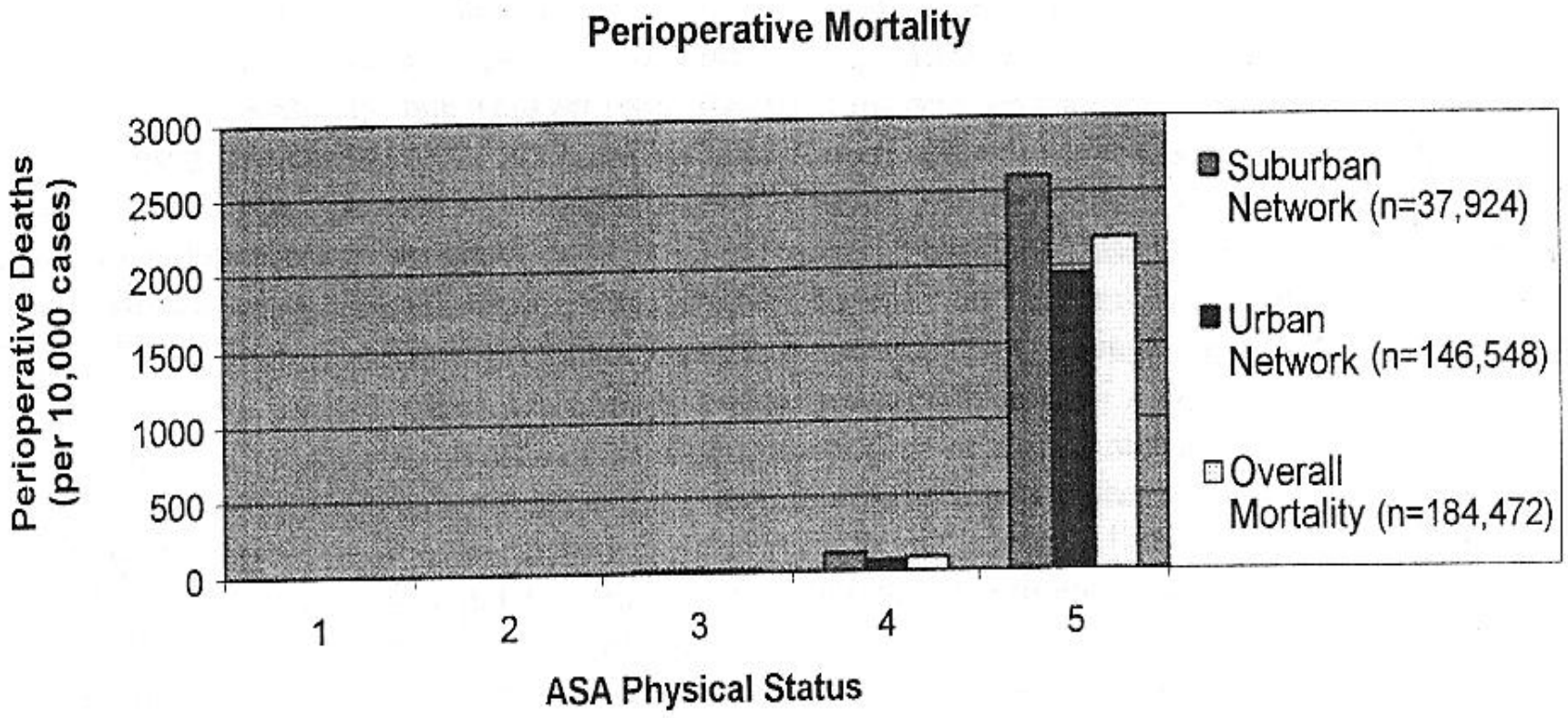
- Natural process
- Changes in body composition and function
- Aging is unique,
  - ***huge individual differences***

Physiological and cognitive capacity



Mortalitet - anestesi

Anesthetsiology 2002;



The elderly

- Social circumstances
  - Living alone
  - How do he/she manage activities of daily living
    - Cocking
    - Eating
    - Self-care
  - Social network

Age and function

Figure 1. Percentage needing help with personal care needs among noninstitutionalized persons, 2003

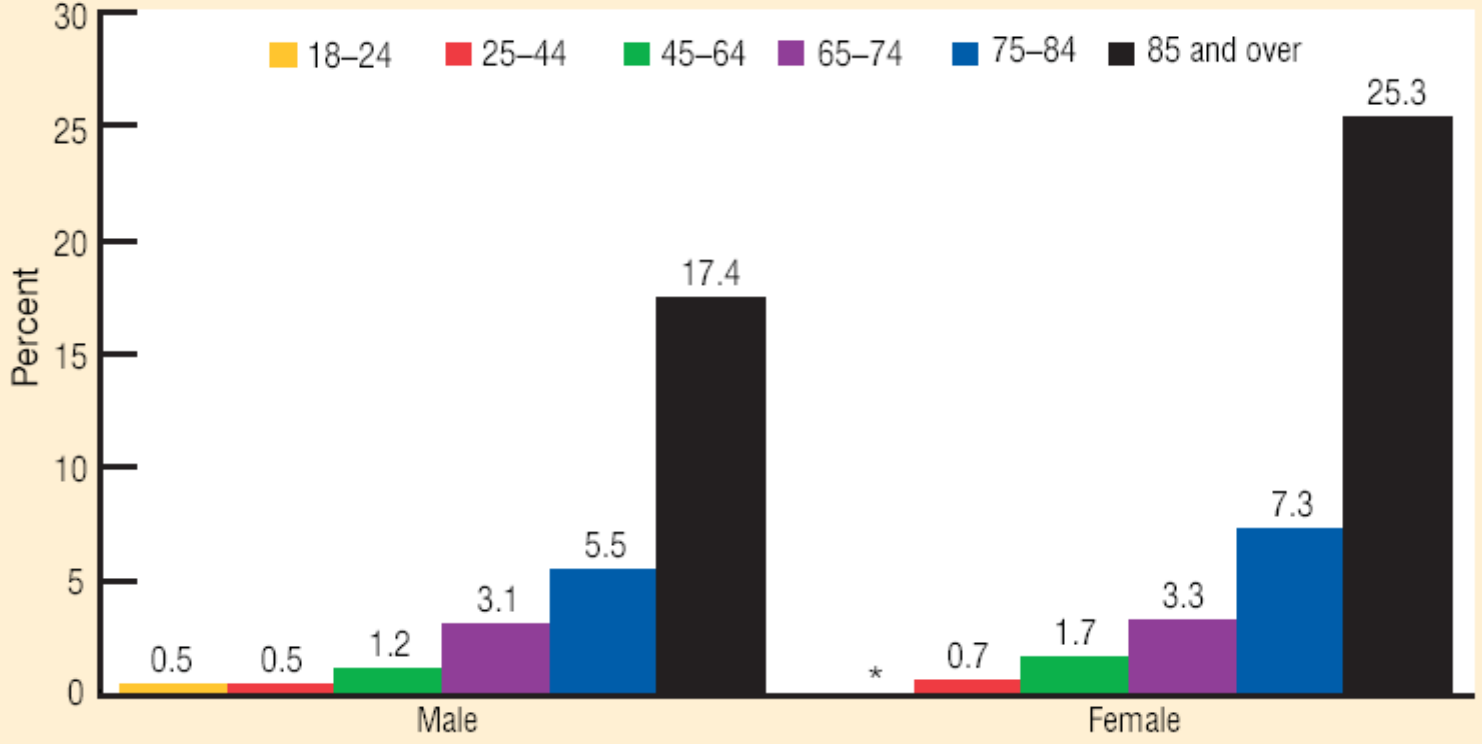


*Figure does not meet standard of reliability or precision.
SOURCE: NCHS, National Health Interview Survey.

Reports of Investigation

Adverse events in ambulatory surgery. A comparison between elderly and younger patients

Frances Chung FRCPC,
Gabor Mezei MD PhD,
Doris Tong FRCPC

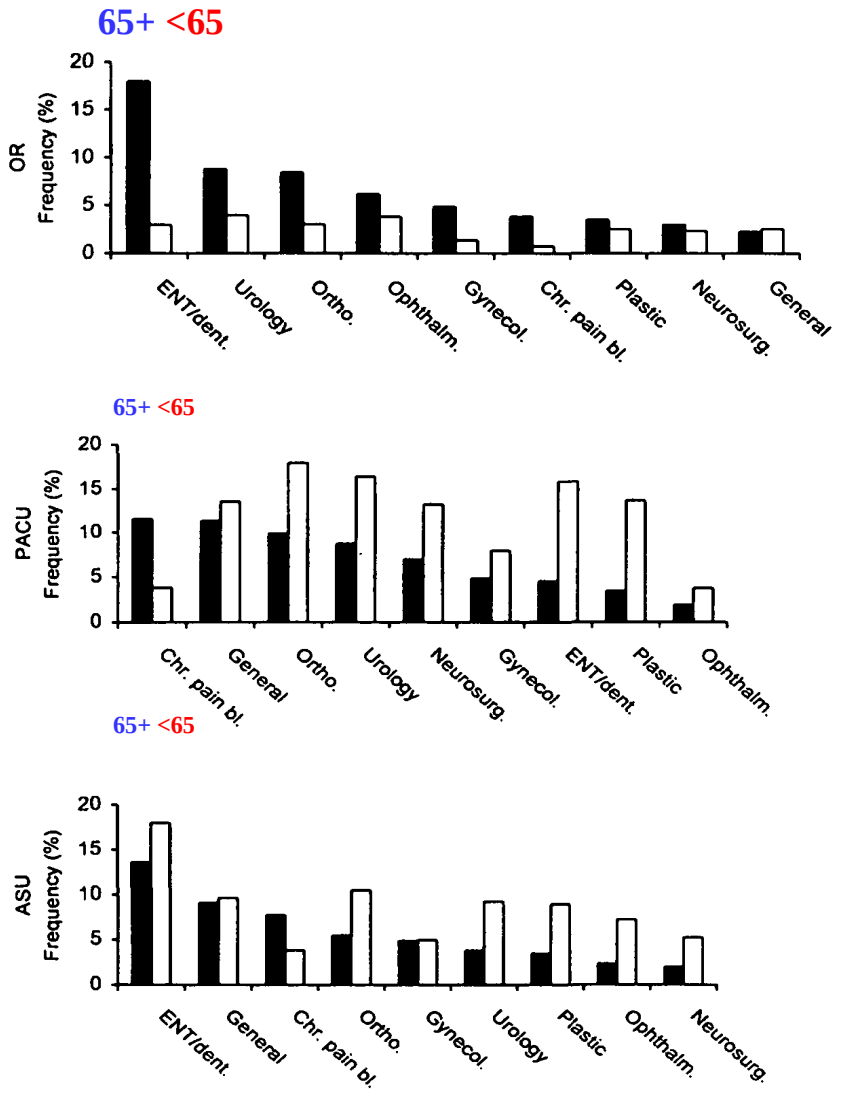


FIGURE 3 Frequency of intraoperative and postoperative adverse events by age in different types of surgery. (Solid bars: patients 65 yr and older; open bars: patients under 65 yr.)

Outcome after day-care surgery in a major teaching hospital.

- Outcome has been measured for 6000 consecutive procedures in a major public teaching hospital day surgery unit.
  - The unanticipated hospital admission rate was 1.34%
  - **surgery-related admissions (0.95%)** exceeded those related to anaesthesia (0.13%).

Rudkin Anaesth Intensive Care. 1993

Outcome after day-care surgery in a major teaching hospital.

- Outcome has been measured for 6000 consecutive procedures in a major public teaching hospital day surgery unit.
  - Perioperative complications related to surgery (1:105) were more frequent than those related to anaesthesia (1:176) and pre-existing medical problems (1:500).

Rudkin Anaesth Intensive Care. 1993

Outcome after day-care surgery in a major teaching hospital.

- Outcome has been measured for 6000 consecutive procedures in a major public teaching hospital day surgery unit.
  - Anaesthesia-related complications;
  - **general anaesthesia (1:114)**
  - **regional anaesthesia (1:180**
  - **local anaesthesia plus sedation (1:780)**

Rudkin Anaesth Intensive Care. 1993

Major morbidity and mortality within 1 month of ambulatory surgery and anesthesia.

Warner MA, Shields SE, Chute CG. **JAMA. 1993** Sep 22-29;270(12):1437-41.

- *A total of 38,598 patients aged 18 years and older undergoing 45,090 consecutive ambulatory procedures and anesthetics.*
- *Contact rates for 72 hours and 30 days were 99.94% and 95.9%, respectively.*

Major morbidity and mortality within 1 month of ambulatory surgery and anesthesia.

Warner MA, Shields SE, Chute CG. **JAMA. 1993** Sep 22-29;270(12):1437-41.

- *Thirty-three patients either experienced major morbidity or died (1:1366 [proportional risk]).*
- *Four patients died (1:11,273),*
  - *two of myocardial infarction*
  - *two in automobile accidents.*
- *No patient died of a medical complication within 1 week of surgery.*

Major morbidity and mortality within 1 month of ambulatory surgery and anesthesia.

Warner MA, Shields SE, Chute CG. **JAMA. 1993** Sep 22-29;270(12):1437-41.

- *Of the 31 patients who developed a major morbidity (1:1455),*
  - *14 (45%) had myocardial infarction (1:3220),*
  - *7 (23%) had a central nervous system deficit (1:6441),*
  - *5 (16%) had pulmonary embolism (1:9018),*
  - *5 (16%) had respiratory failure (1:9018).*

Major morbidity and mortality within 1 month of ambulatory surgery and anesthesia.

Warner MA, Shields SE, Chute CG. **JAMA. 1993** Sep 22-29;270(12):1437-41.

- *4 events (13%) occurred within 8 hours of surgery (1:11,273),*
- *15 (48%) in the next 40 hours (1:3006),*
- *12 (39%) in the next 28 days (1:3758).*

Return hospital visits and hospital readmissions after ambulatory surgery.

Mezei G, Chung F. Ann Surg. **1999** Nov;230(5):721-7.

- *Preoperative, intraoperative, and postoperative data were collected on 17,638 consecutive patients undergoing ambulatory surgery at a major ambulatory surgical center in Toronto, Ontario.*
- *Return hospital visits and hospital readmissions occurring in Ontario within 30 days after the ambulatory surgery.*
  - *Return visits were categorized as emergency room visits, ambulatory surgical unit admissions, or inpatient admissions.*
    - *The readmissions were categorized as those resulting from surgical, medical, or anesthesia-related complications or those not related to the ambulatory surgery.*

Return hospital visits and hospital readmissions after ambulatory surgery.

Mezei G, Chung F. Ann Surg. **1999** Nov;230(5):721-7.

- *193 readmissions occurred within 30 days after ambulatory surgery (readmission rate 1.1%).*
  - *6 patients returned to the emergency room,*
  - *178 patients were readmitted to the ambulatory surgical unit,*
  - *9 patients were readmitted as inpatients.*

Return hospital visits and hospital readmissions after ambulatory surgery.

Mezei G, Chung F. Ann Surg. **1999** Nov;230(5):721-7.

- *25 readmissions were the result of surgical complications,*
- *1 resulted from a medical complication (pulmonary embolism).*
  - *The complication-related readmission rate was 0.15% (1 in 678 procedures).*
  - *The complication rate was significantly higher among patients undergoing transurethral resection of bladder tumor (5.7%).*
  - *No anesthesia-related readmissions or deaths were identified.*

Return hospital visits and morbidity within 60 days after day surgery:

a retrospective study of 18,736 day surgical procedures.

Engbaek J et al. Acta Anaesthesiol Scand. **(2006)**

- From two centres, **16,048 patients** underwent **18,736 day surgery operations**
  - including 4,829 surgical abortions.
- Patients were retrospectively analysed for contacts to Danish hospitals **within 60 post-operative days** and the associated morbidity and mortality.

Return hospital visits and morbidity within 60 days after day surgery:

a retrospective study of 18,736 day surgical procedures**.**

Engbaek J et al. Acta Anaesthesiol Scand. **(2006)**

- Altogether **113 patients** (not including the surgical abortions) were readmitted to hospitals with **117 complications** definitely or likely related to day surgery.
- The most common complications were haematomas or haemorrhage (0.40%) and infections (0.29%).

Return hospital visits and morbidity within 60 days after day surgery:

a retrospective study of 18,736 day surgical procedures.

Engbaek J et al. Acta Anaesthesiol Scand. **(2006)**

- Morbidity after the two most common procedures,
  - hernia repair 1:39 patients
  - knee arthroscopy 1:220 patients,
- More serious complications included
  - four patients with septic arthritis of the knee
  - six patients with venous thromboembolism.

Day surgery in Finland: a prospective cohort study of 14 day-surgery units.

Mattila K, Hynynen M; FOR THE INTENSIUM CONSORTIUM STUDY GROUP.
Acta Anaesthesiol Scand. **2009 Feb 23.**

- Quality of care was assessed by analyzing the rates and reasons for;
  - overnight admission,
  - readmission,
  - reoperation,
  - cancellations.
- Satisfaction of care was inquired from day- surgery patients during a 2-week period.

Day surgery in Finland: a prospective cohort study of 14 day-surgery units.

Mattila K, Hynynen M; FOR THE INTENSIUM CONSORTIUM STUDY GROUP.
Acta Anaesthesiol Scand. **2009 Feb 23.**

- **Unplanned overnight admissions was 5.9%.**
- Return hospital visits were reported in 3.7%
- Readmissions in 0.7% of patients 1-28 days post-operatively.

- Patient satisfaction was high**.**

Acta Anaesthesiol Scand 2012; 56: 323–331
Printed in Singapore. All rights reserved

ACTA ANAESTHESIOLOGICA SCANDINAVICA
doi: 10.1111/j.1399-6576.2011.02631.x

Is day surgery safe? A Danish multicentre study of morbidity after 57,709 day surgery procedures

B. Majholm[1], J. Engbæk[1], J. Bartholdy[1], H. Oerding[2], P. Ahlburg[3], A.-M. G. Ulrik[4], L. Bill[5], C. S. Langfrits[6] and A. M. Møller[1]
[1]*Department of Anaesthesiology and Intensive Care Medicine, Copenhagen University Hospital, Herlev, Denmark,* [2]*Department of Anaesthesiology, Vejle Hospital, Vejle, Denmark,* [3]*Department of Anaesthesiology Day Surgery Unit, Aarhus University Hospital, Aarhus, Denmark,* [4]*Department of Anaesthesiology, Hospital of Southern Jutland, Aabenraa, Denmark,* [5]*Department of Anaesthesiology, Regional Hospital, Herning, Denmark and* [6]*Department of Anaesthesiology, Regional Hospital, Horsens, Denmark*

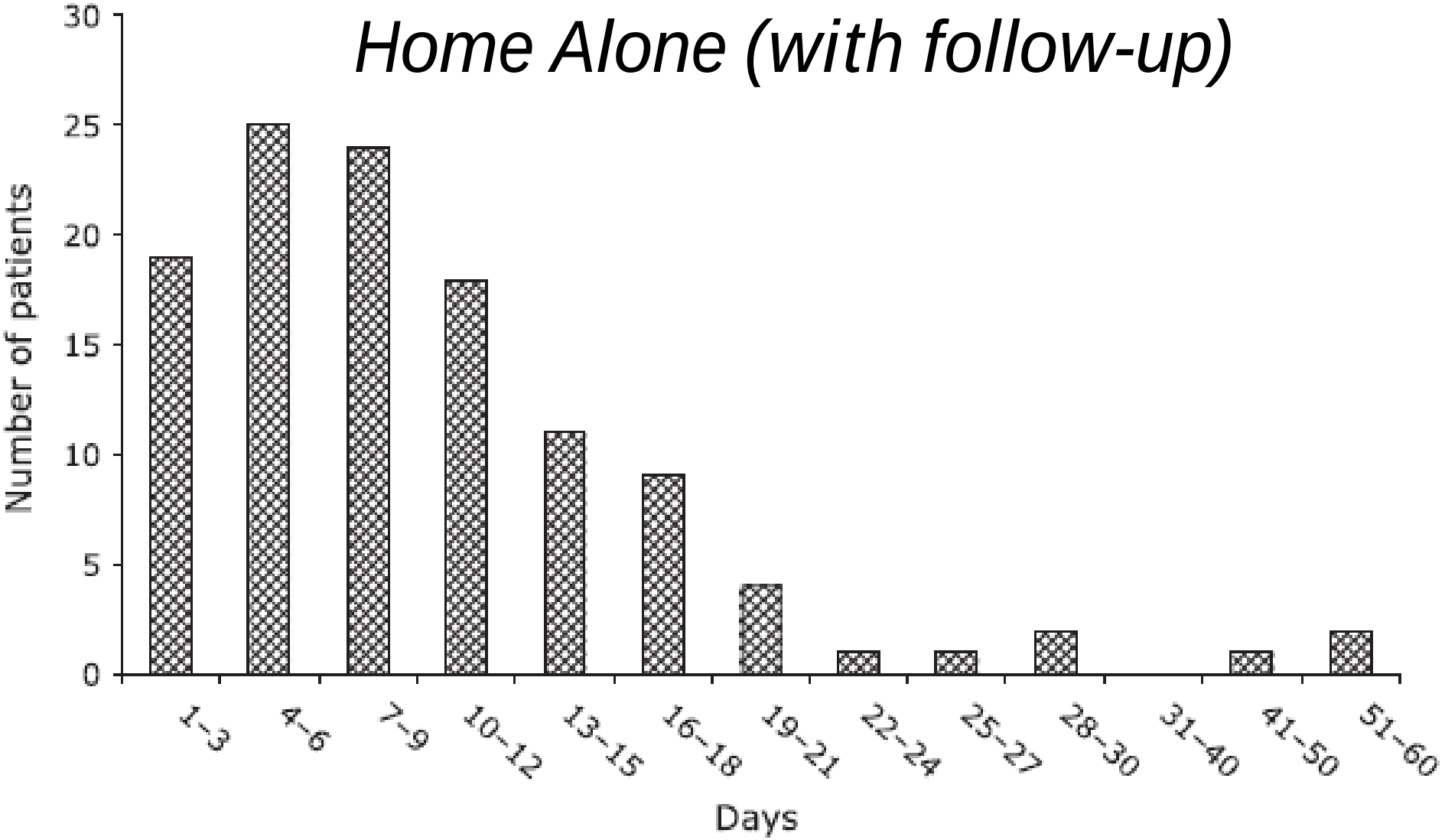
Conclusion: *This large-scale Danish national study confirmed that day surgery is associated with a very low rate of return hospital visits. Despite the rapid expansion of day surgery, safety has been maintained, major morbidity being very rare, and no deaths being definitely related to day surgery.*

Is day surgery safe? A Danish multicentre study of morbidity after 57,709 day surgery procedures.

RESULTS:

- The overall rate of return hospital visits was 1.21% [95% confidence interval (CI): 1.12-1.30%] caused by a wide range of diagnoses.
- No deaths were definitely related to day surgery.
- The return hospital visits were due to;
  - haemorrhage/haematoma 0.50% (95% CI: 0.44-0.56%),
  - infection 0.44% (95% CI: 0.38-0 49%)
  - thromboembolic events 0.03%.
- Major morbidity was rare.
- The surgical procedures with the highest rate of complication were
  - tonsillectomies 11.4%,
  - surgically induced abortions 3.13%
  - inguinal hernia repairs 1.23%.

Home Alone (with follow-up)



Time from day surgery to first hospital contact among patients with complications that were definitely or likely related to the procedure.
Engbæk J et al. Acta Anaesthesiol Scand 2006; 50: 911–919 **[3]**

The Royal College of Surgeons of England

HPB SURGERY

Ann R Coll Surg Engl 2009; **91**: 583–590
doi 10.1308/003588409X432365

Introduction of a day-case laparoscopic cholecystectomy service in the UK: a critical analysis of factors influencing same-day discharge and contact with primary care providers

CD BRIGGS[1], GB IRVING[1], CD MANN[2], A CRESSWELL[1], L ENGLERT[3], M PETERSON[1], IC CAMERON[1]

Can we select patients that we be or not be day cases?

Table 1 Demographic factors according to successful day surgery

	All patients (n = 106)	Successful day-case (n = 89)	Admitted (n = 17)	P-value
Sex ratio M/F	14/92	13/76	1/16	0.330[a]
Age (years)	42 [19–76]	41 [21–76]	42 [19–64]	0.653[b]
ASA-score 1 and 2	43/63	37/52	6/11	0.730[a]
Body mass index (kg/m^2)	28 [18–38]	28 [18–38]	28 [21–37]	0.418[b]

ASA, American Society of Anesthesiologists.
[a]Chi-squared test; [b]Mann–Whitney test.

Can we predict success?

Table 3 Analysis of demographic and peri-operative factors and relation to the need for overnight admission

	All patients (n = 106)	Successful day-case (n = 89)	Admitted (n = 17)	P-value UVA	P-value MVA
Age ≥ 60 years	12	9	3	0.369	NS
BMI ≥ 35 kg/m^2	7	6	1	0.896	NS
NSAID in pre-medication	78	69	9	0.035	0.032 [OR = 9.178]
Operation by training grade surgeon	33	26	7	0.329	NS
Cholecystitis at operation/previous pancreatitis	19	16	3	0.604	NS
Previous deranged liver function	5	3	2	0.017	NS
Mean operation time min [range]	62 [15–120]	62 [15–120]	66 [35–90]	0.369[b]	NS
Operative complication/difficulty	15	12	3	0.652	NS
Operation commenced after 10 am	30	26	4	0.634	NS
Intravenous opiate in recovery	43	34	9	0.257	NS
Intravenous antiemetic in recovery	10	10	0	0.146	NS
Hypotension requiring fluid bolus	6	3	3	0.020	NS
O_2 saturation < 95% in recovery	20	13	7	0.010	NS
Anti-emetic on the ward	18	14	4	0.433	NS

Admission why?

Table 2 Reason for overnight admission

Reason for admission	Patients (*n*)
Oxygen saturation < 93% on air	5
Pain requiring parenteral opioid analgesia	4
Conversion to open operation	2
Drain inserted	1
Nausea and vomiting	2
Acute retention of urine (female)	1
Sinus tachycardia	1
History of sickle cell trait	1

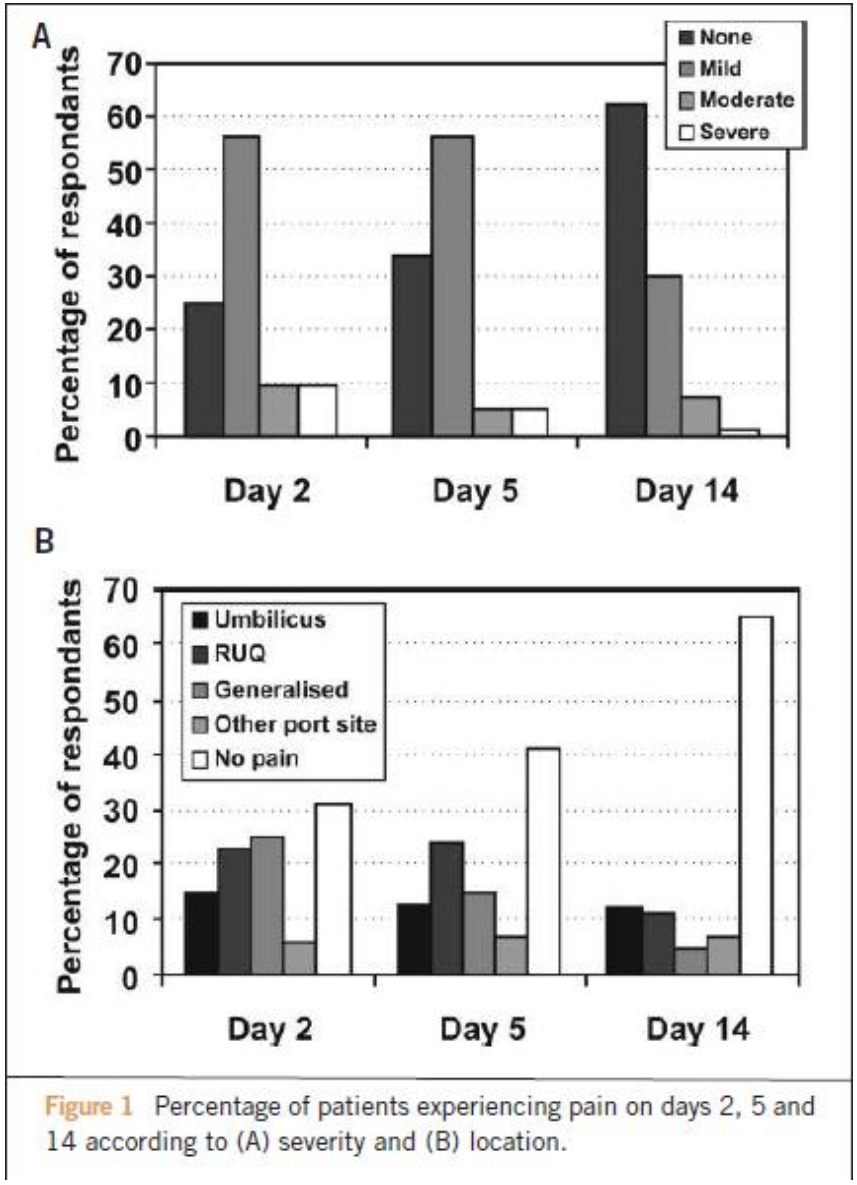
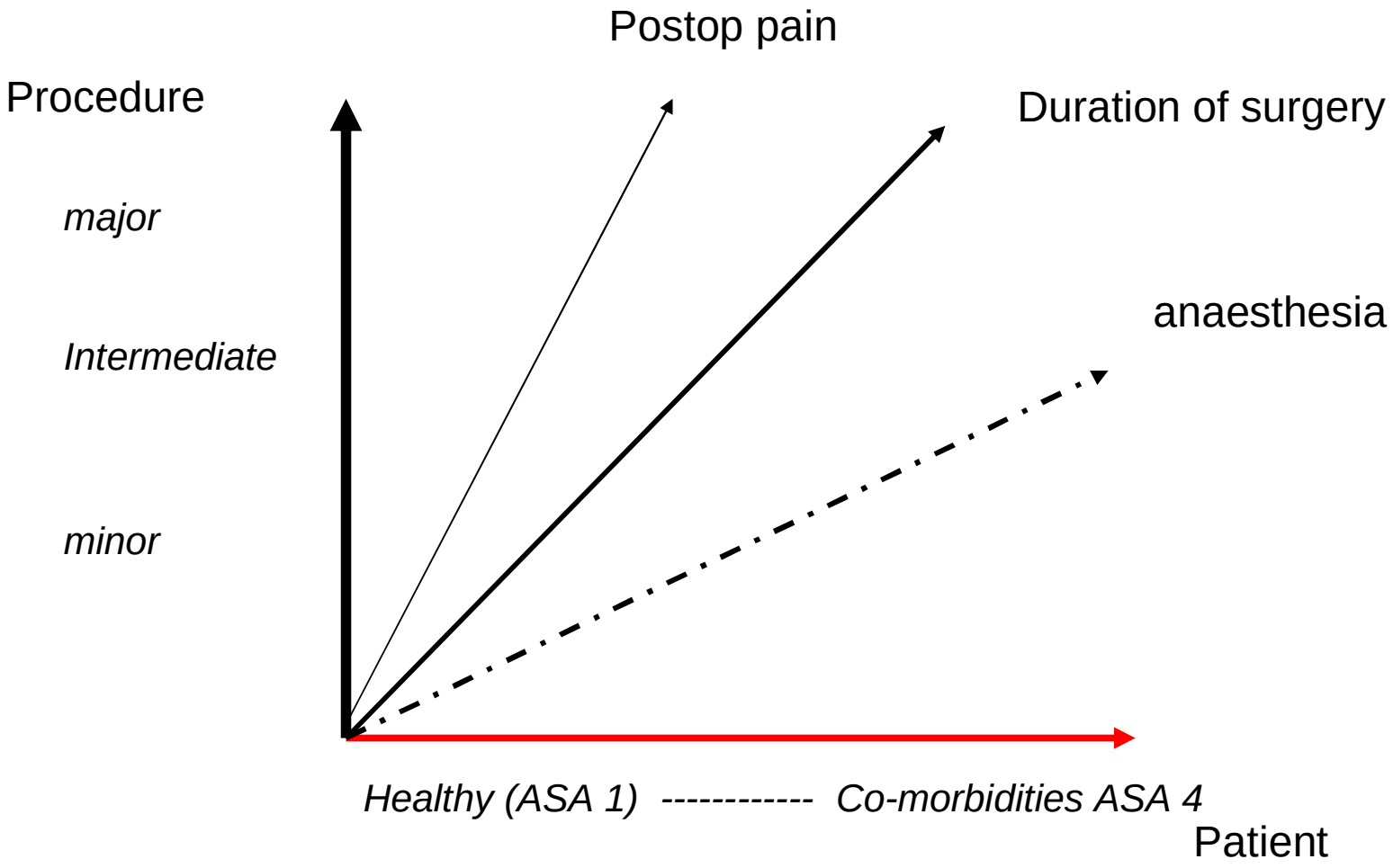


Figure 1 Percentage of patients experiencing pain on days 2, 5 and 14 according to (A) severity and (B) location.

Day case assessment guide

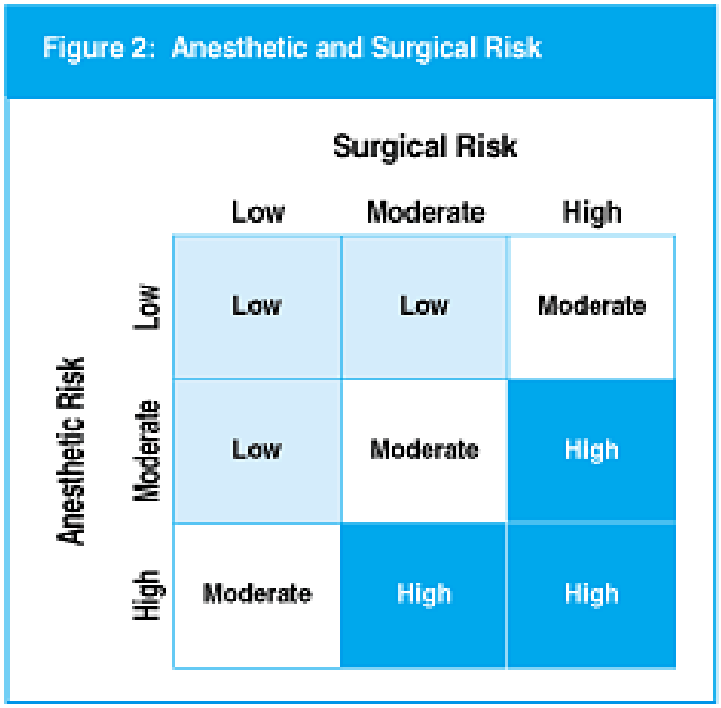


Procedure-specific risk

- **High-risk surgery** (the highest-risk category and also the most extensively studied), which has been associated with cardiac morbidity rates of greater than 5% in many reports.
  - Examples include aortic and other major vascular surgery, as well as peripheral vascular surgery.
- **Intermediate-risk surgery**, for which reported cardiac morbidity rates range from 1% to 5%.
  - Examples include intraperitoneal and intrathoracic procedures, carotid endarterectomy, head and neck surgery, orthopedic surgery, and prostate surgery.
- **Low-risk surgery**, for which reported cardiac morbidity rates are below 1%.
  - Examples include endoscopic and superficial procedures, cataract surgery, breast surgery, and ambulatory surgery.

Day surgery

Figure 2: Anesthetic and Surgical Risk



Minor ”superficial surgery”

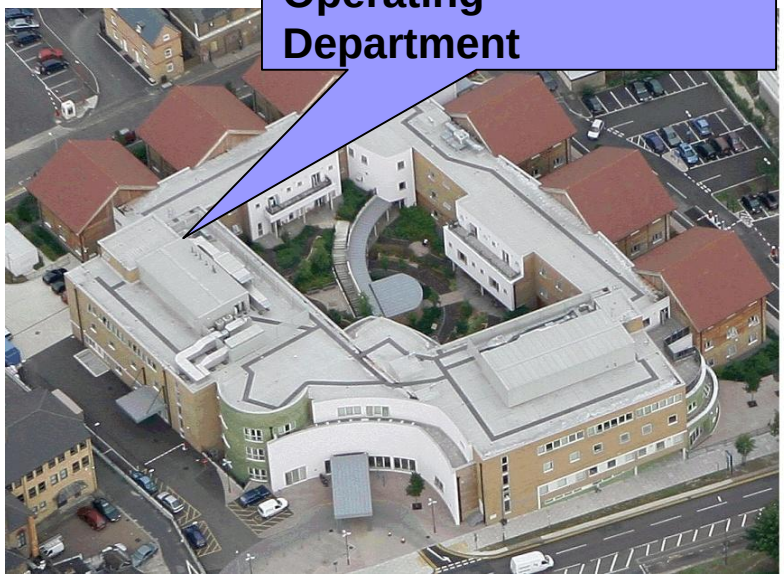
”laparoscopy, including an anastomosis”

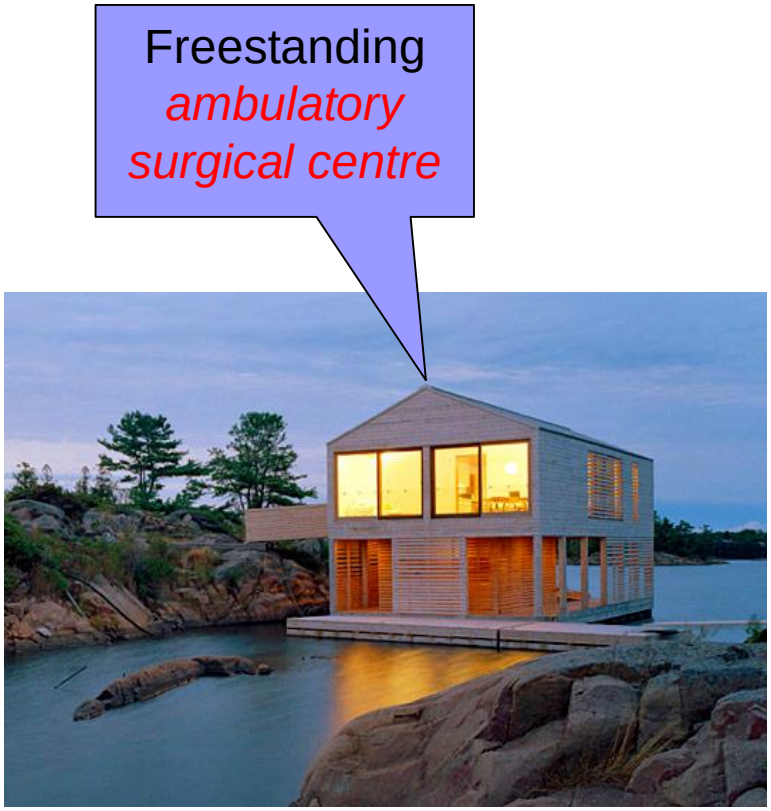
Urology

Surgical risk

- Surgery
  - Part of body
  - Need for relaxation
  - Body position
- Surgical risk factors
  - Risk for bleed
  - *Surgical site related risk;*
    - *leakage from anastomosies etc.*
  - Infectious risk;
    - *need for intense anti-biotic therapy*
- Preference of the surgeon

Day care centre





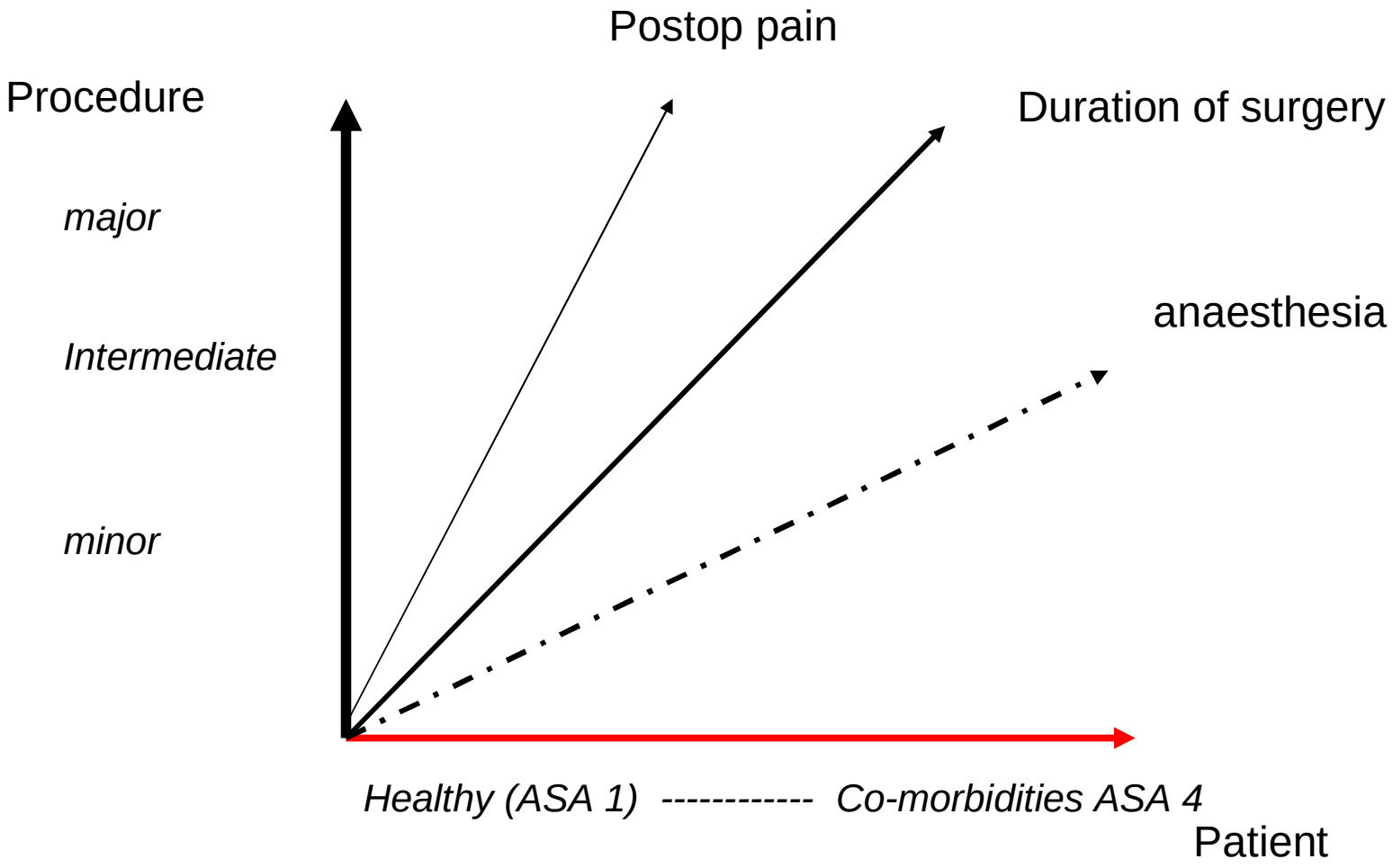
Facility related risks
“distance to multi disciplinary support in emergent situations”

- Free standing day case unit
- Day Case unit in hsopital
- Integrated part of general operating department

Surgeon

- **Responsable for the surgical proceudre and thus the ebenfit vs. Risk**

Day case assessment guide



Patient related factors that may have an impact on *adverse outcome*

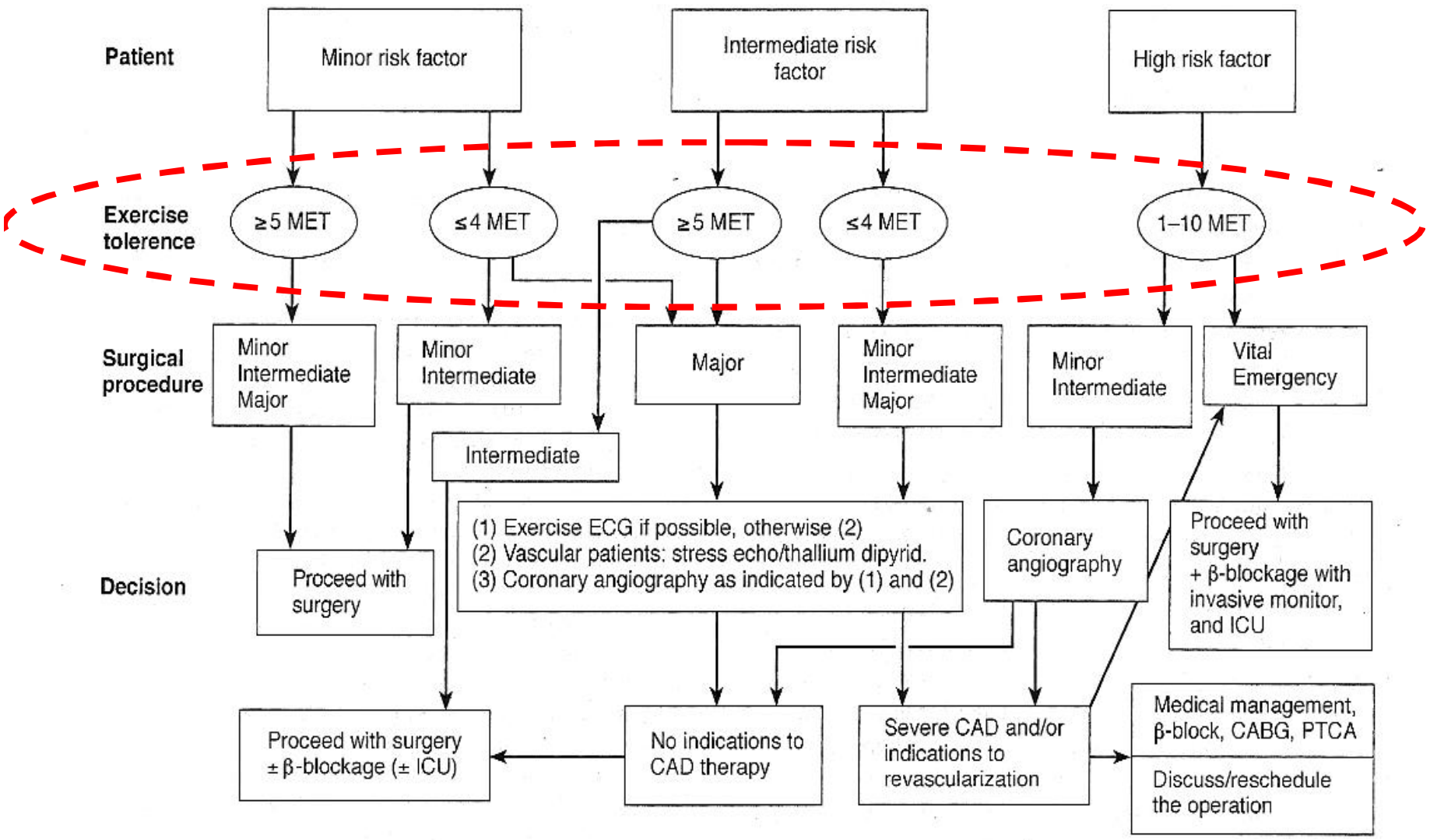
- Age
- ASA functional status
  - *Medical history & concomitant medication*
- Family/social network
  - Distance between surgical facility and home of patient
- Patients experience and expectations
  - *”informed consent”*

ASA classification

Box 2 ASA grades	
ASA (American Society of Anesthesiologists) grades are a simple scale describing fitness to undergo an anaesthetic. The ASA clearly states that it does not endorse any elaboration of these definitions. However, anaesthetists in the UK often qualify (or interpret) these grades as relating to functional capacity – that is comorbidity that does not (ASA Grade 2) or that does (ASA Grade 3) limit a patient's activity (see Box 3).	
ASA Grade 1	"Normal healthy patient" (that is without any clinically important comorbidity and without clinically significant past/present medical history)
ASA Grade 2	"A patient with mild systemic disease"
ASA Grade 3	"A patient with severe systemic disease"
ASA Grade 4	"A patient with severe systemic disease that is a constant threat to life"

A subjective scale

AHA elavuation algorithm



Assessment of functional capacity

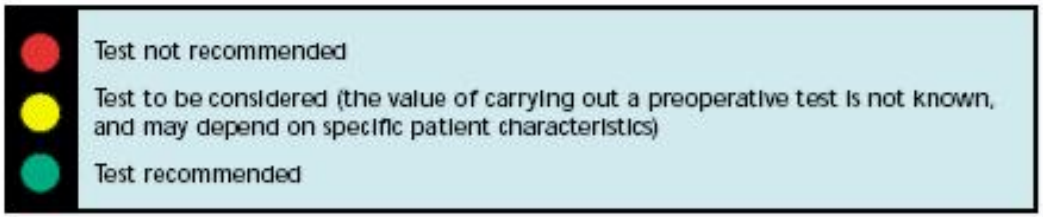
- ≥4 METS
  - **Can you;**
    - **Climb a flight of stairs or walk uphill?**
    - **Walk on level ground at 6.5 km/h**
      - **Or more**

NICE


NHS
National Institute for Clinical Excellence
Preoperative tests
The use of routine preoperative tests for elective surgery

NICE

The recommendations are colour-coded in a similar way to traffic lights.



Box 1 Surgery grades	
	Example
Grade 1 (minor)	Excision of lesion of skin; drainage of breast abscess
Grade 2 (intermediate)	Primary repair of inguinal hernia; excision of varicose vein(s) of leg; tonsillectomy/adenotonsillectomy; knee arthroscopy
Grade 3 (major)	Total abdominal hysterectomy; endoscopic resection of prostate; lumbar discectomy; thyroidectomy
Grade 4 (major+)	Total joint replacement; lung operations; colonic resection; radical neck dissection
Neurosurgery	–
Cardiovascular surgery	–

NICE

Box 2 ASA grades	
ASA (American Society of Anesthesiologists) grades are a simple scale describing fitness to undergo an anaesthetic. The ASA clearly states that it does not endorse any elaboration of these definitions. However, anaesthetists in the UK often qualify (or interpret) these grades as relating to functional capacity – that is comorbidity that does not (ASA Grade 2) or that does (ASA Grade 3) limit a patient's activity (see Box 3).	
ASA Grade 1	"Normal healthy patient" (that is without any clinically important comorbidity and without clinically significant past/present medical history)
ASA Grade 2	"A patient with mild systemic disease"
ASA Grade 3	"A patient with severe systemic disease"
ASA Grade 4	"A patient with severe systemic disease that is a constant threat to life"

Grade 2 surgery

ASA Grades

Grade 1 Normal healthy patient (i.e. without any clinically important comorbidity and without a clinically significant past/present medical history).

Grade 2 Patient with mild systemic disease.

Grade 3 A patient with severe systemic disease but the disease is not a constant threat to life.

See pages 3–4 for more information.

ASA Grade 1: adults ≥ 16 years

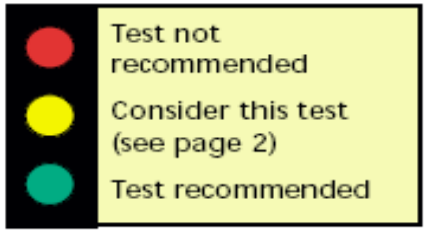
Test	Age (years)			
	16 to < 40 ≥	40 to < 60 ≥	60 to < 80 ≥	80 ≥
Chest X-ray	No	No	No	No
ECG	No			Yes
Full blood count	No		Yes	Yes
Haemostasis	No	No	No	No
Renal function	No	No		
Random glucose	No			
Urine analysis*				

*Dipstick urine testing in asymptomatic individuals is not recommended (UK National Screening Committee)

Grade 2 surgery *continued*

ASA Grade 2: adults with comorbidity from **cardiovascular disease**

Test	Age (years)			
	16 to < 40	40 to < 60	60 to < 80	80 ≥
Chest X-ray				
ECG	Yes	Yes	Yes	Yes
Full blood count				
Haemostasis	No	No	No	No
Renal function			Yes	Yes
Random glucose	No	No	No	No
Urine analysis				
Blood gases	No	No	No	No
Lung function	No	No	No	No



Grade 3 surgery

ASA Grades

Grade 1 Normal healthy patient (i.e. without any clinically important comorbidity and without a clinically significant past/present medical history).

Grade 2 Patient with mild systemic disease.

Grade 3 A patient with severe systemic disease but the disease is not a constant threat to life.

See pages 3–4 for more information.

ASA Grade 1: adults ≥ 16 years

Test	Age (years)			
	≥ 16 to < 40	40 to < 60	60 to < 80	≥ 80
Chest X-ray	No	No		
ECG	No		Yes	Yes
Full blood count	Yes	Yes	Yes	Yes
Haemostasis	No	No	No	No
Renal function			Yes	Yes
Random glucose				
Urine analysis*				

*Dipstick urine testing in asymptomatic individuals is not recommended (UK National Screening Committee)

What needs to be done prior to day surgery

Ambulatory Anesthesiology
Section Editor: **Peter S. A. Glass**

Elimination of Preoperative Testing in Ambulatory Surgery

Frances Chung, FRCPC
Hongbo Yuan, PhD
Ling Yin, MSc
Santhira Vairavanathan, MBBS
David T. Wong, MD

BACKGROUND: Preoperative testing has been criticized as having little impact on perioperative outcomes. We conducted a randomized, single-blind, prospective, controlled pilot study to determine whether indicated preoperative testing can be eliminated without increasing the perioperative incidence of adverse events in selected patients undergoing ambulatory surgery.
METHODS: One thousand sixty-one eligible patients were randomized either to have indicated preoperative testing or no preoperative testing. In the indicated testing group, patients received indicated preoperative testing: a complete blood count, electrolytes, blood glucose, creatinine, electrocardiogram, and chest radiograph according to the Ontario Preoperative Testing Grid as per current practice, whereas in the no testing group, no testing was ordered. The investigators, data collectors,

Anesth & Analg 2009; 108: 467-75

..the need for preop. testing

Table 2. Intraoperative and Postoperative Adverse Events Within 30 Days

	No testing (n = 499) n (%)	Testing (n = 527) n (%)	Relative risk (95% CI)[a]
Intraoperative event	7 (14.0)	7 (13.3)	1.0 (0.4–3.0)
Postoperative event[b]	16 (32.1)	21 (39.8)	0.8 (0.4–1.5)
Unanticipated admission	7 (14.0)	12 (22.8)	0.6 (0.2–1.6)
Others	9 (1.8)	9 (1.7)	1.0 (0.4–2.6)
Hospital revisits (≤7 d) event	11 (22.0)	27 (51.2)	0.4 (0.2–0.9)
Readmission	0 (0)	0 (0)	
Other visits	11 (22.0)	27 (51.2)	0.4 (0.2–0.9)
Hospital revisits (8–30 d)[c] event	11 (22.0)	16 (30.4)	0.7 (0.3–1.6)
Readmission	2 (4.0)	3 (5.7)	0.7 (0.1–4.2)
Other visits	10 (20.0)	14 (26.6)	0.8 (0.3–1.7)

Table 3. Diagnoses Associated with Intraoperative and Postoperative Adverse Events

	Intraoperative event		Postoperative event[a]	
	No testing (499)	Testing (527)	No testing (499)	Testing (527)
Cardiovascular				
Dysrhythmia	1	2	1	0
Hypertension	1	0	1	2
Hypotension	0	0	0	1
Respiratory/Airway				
Hypoxemia	0	1	0	1
Laryngospasm	2	0	0	0
Bronchospasm	1	0	0	0
Difficult Intubation/Intubated on arrival	1	3	0	1
Others				
Inadequate pain control	0	0	3	5
Nausea/vomiting	0	0	4	3
Urinary retention	0	0	1	1
Dizziness	0	0	1	2
Drowsiness	0	0	0	1
Other[b]	1	1	7	8

[a] One adverse event was associated with more than one disease.

Table 4. Reasons for Hospital Revisit[a]

	7 d		30 d	
	No testing (499)	Testing (527)	No testing (499)	Testing (527)
Severe pain	3	17	2	6
Bleeding	1	3	0	2
Infection	2	9	6	2
Urine retention	1	2	0	0
Other related medical problem	5	1	5	8

[a] One patient may have more than one reason to visit hospital.

Disease and limited fucntional capaicty

Table 5. Rates of Intraoperative and Postoperative Adverse Events According to Baseline Medical Status

	Intraoperative adverse events		Postoperative adverse events	
Baseline medical status	No testing *n* (%)[b]	Testing *n* (%)[b]	No testing *n* (%)[b]	Testing *n* (%)[b]
ASA				
I	0	0	2/144 (13.9)	6/134 (44.8)
II	6/297 (20.2)	4/327 (12.2)	11/297 (37.0)	13/327 (39.8)
III	1/58 (17.2)	3/66 (45.4)	3/58 (51.7)	2/66 (30.3)
Preexisting disease[a]				
Hypertension	4/138 (29.0)	1/167 (6.0)	8/138 (58.0)	8/167 (47.9)
TIA-CVA	0	1/4 (250)	0	0
COPD/asthma	0	0	1/39 (25.6)	1/35 (28.6)
Obesity	1/27 (37.0)	0	1/27 (37.0)	3/45 (66.7)
Diabetes mellitus	3/82 (36.6)	1/79 (12.6)	6/82 (73.2.0)	0
Thyroid disease	1/38 (26.3)	2/43 (46.5)	3/38 (78.9)	3/43 (70.0)
Renal disease	0	1/5 (200)	0	0
Neurologic disease	0	2/21 (95.2)	1/24 (41.7)	1/21 (47.6)
Other disease	1/89 (11.2)	0	4/89 (44.8)	5/89 (56)
No disease	0	0	1/163 (6.1)	7/183 (38.2)

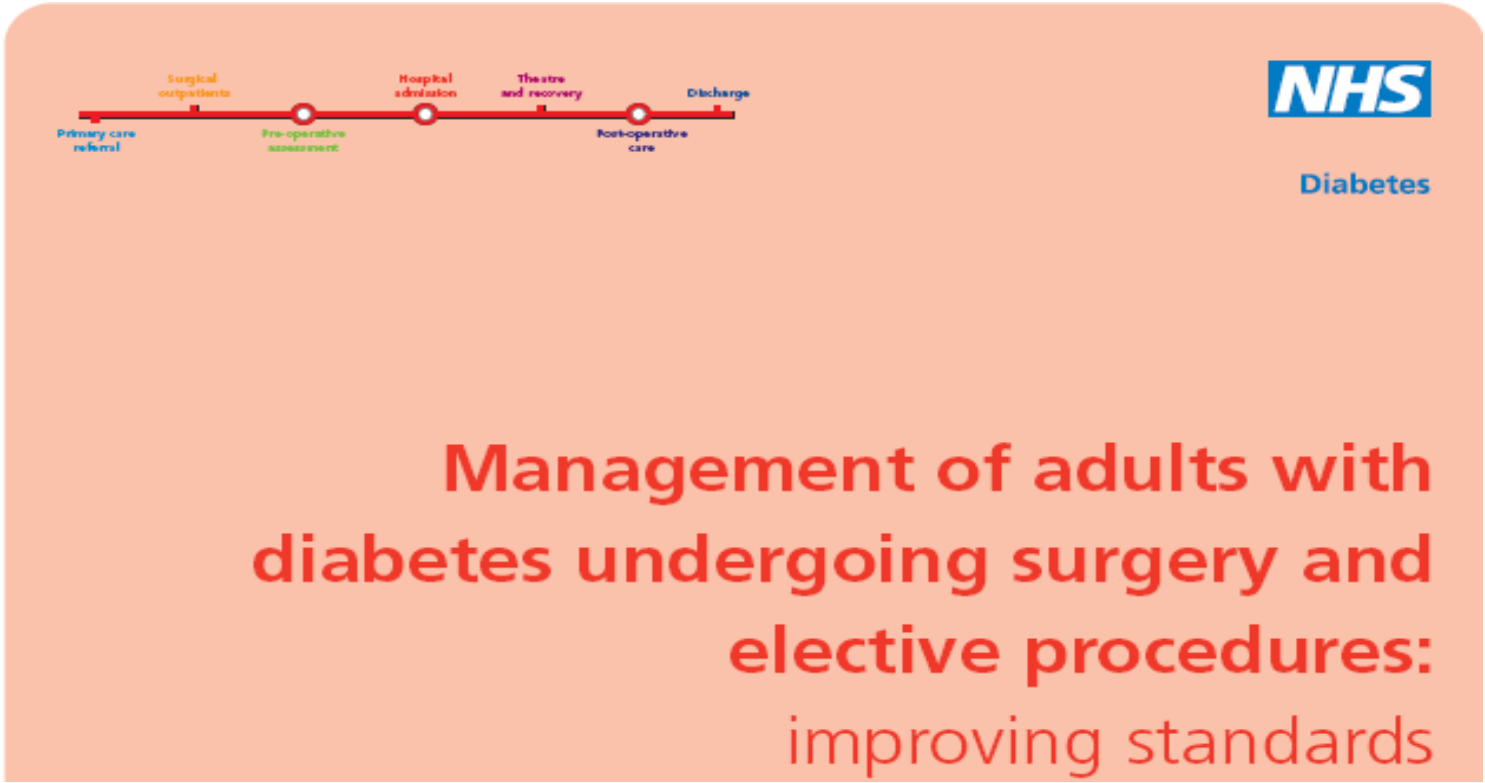
Body weight - BMI

- A relative risk factor
  - fat composition
    - Apple or pear
    - **Increased risk for snoring –**
      - ***Sleep related ventilation pathology***
        - ***Obstructive sleep apnea***
        - ***Central sleep apnea***
        - ***Hypoventilation***
        - ***..***
    - Compromise ventilation perfusion matching – increased shunt
    - Increased risk for a complicated intubation .
      - Neck circumference
  - Increased volume of drug distribution

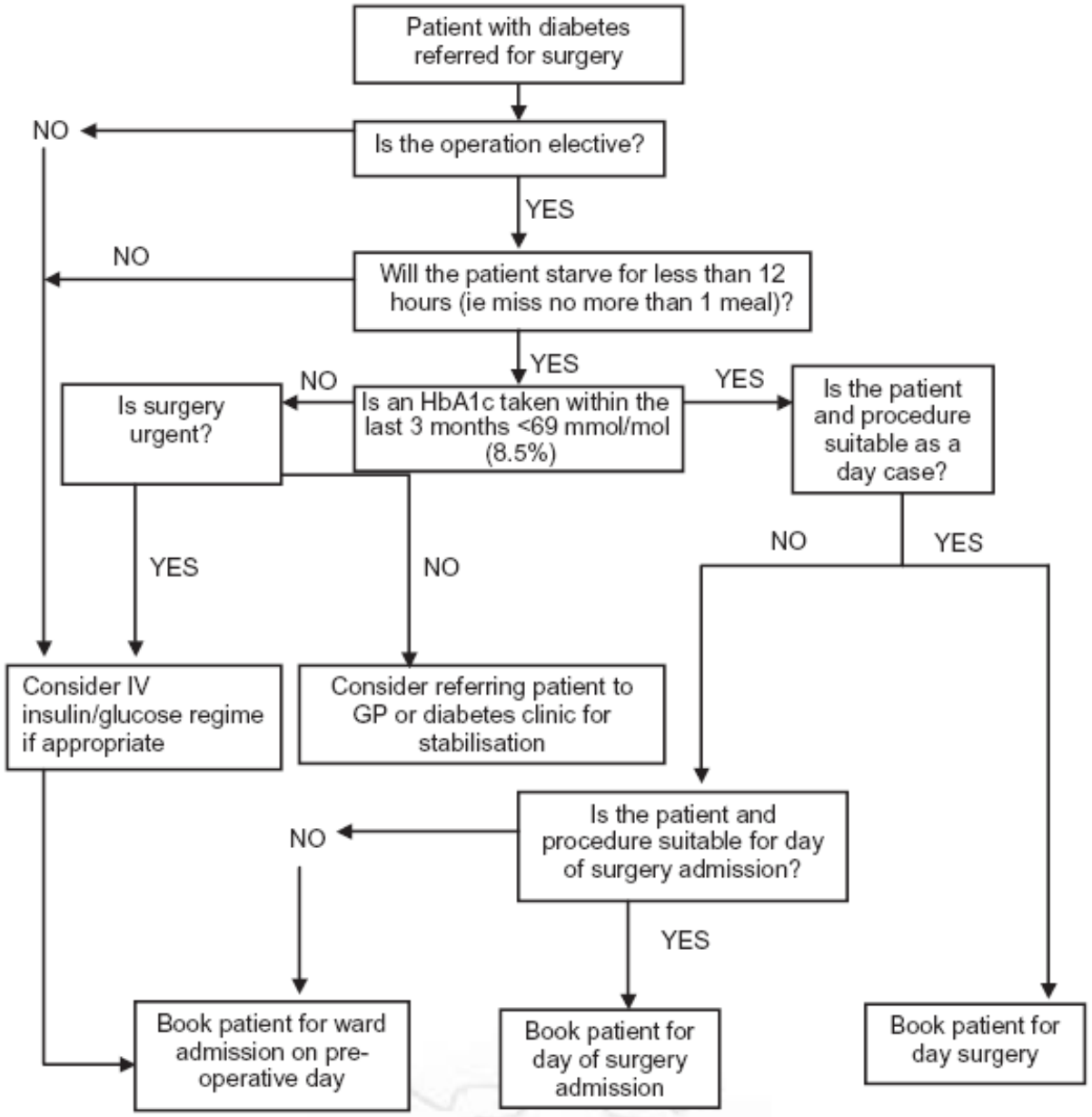
Medications

- General role keep every day medication
  - Diabetes
  - Platelet inhibitors
  - Anticoagulats
    - ACE-inhibitors if prescribed only for hypertension may be withdrawn in order to avoid hypotension

http://www.diabetes.nhs.uk/areas_of_care/emergency_and_inpatient/perioperative_management/



Suitability of patients with diabetes for day surgery



Guideline for peri-operative adjustment of insulin (short starvation period – no more than ONE missed meal)

Insulins	Day prior to admission	Day of surgery	
		Patient for AM surgery	Patient for PM surgery
Once daily (evening) (e.g. Lantus® or Levemir®. Insulatard®, Humulin I®, Insuman®)	No dose change*	Check blood glucose on admission	Check blood glucose on admission
Once daily (morning) (Lantus® or Levemir® Insulatard®, Humulin I®, Insuman®)	No dose change	No dose change*. Check blood glucose on admission	No dose change*. Check blood glucose on admission
Twice daily (e.g. Novomix 30®, Humulin M3® Humalog Mix 25®, Humalog Mix 50®, Insuman® Comb 25, Insuman® Comb 50 twice daily Levemir® or Lantus®)	No dose change	Halve the usual morning dose. Check blood glucose on admission Leave the evening meal dose unchanged	Halve the usual morning dose. Check blood glucose on admission Leave the evening meal dose unchanged
Twice daily - separate injections of short acting (e.g. animal neutral, Novorapid® Humulin S®) Apidra® **and intermediate acting** (e.g. animal isophane Insulatard® Humulinl® Insuman®)	No dose change	Calculate the total dose of both morning insulins and give half as intermediate acting only in the morning. Check blood glucose on admission Leave the evening meal dose unchanged	Calculate the total dose of both morning insulins and give half as intermediate acting only in the morning. Check blood glucose on admission Leave the evening meal dose unchanged
3, 4, or 5 injections daily	No dose change	**Basal bolus regimens:** omit the morning and lunchtime short acting insulins. Keep the basal unchanged.* **Premixed AM insulin:** halve the morning dose and omit lunchtime dose Check blood glucose on admission	Take usual morning insulin dose(s). Omit lunchtime dose. Check blood glucose on admission

Guideline for peri-operative monitoring of diabetes and management of hyperglycaemia and hypoglycaemia in patients undergoing surgery with a short starvation period (one missed meal)

- These guidelines are for the management of well-controlled patients (HbA_{1c} <69 mmol/mol or 8.5%) undergoing surgery with a short starvation period.

Administration

- Make up a 50 ml syringe with 50 units of soluble human insulin in 49.5mls of 0.9% sodium chloride solution. This makes the concentration of insulin 1 unit per ml.
- The initial crystalloid solution to be co-administered with the VRIII is 0.45% saline with 5% glucose and 0.15% KCl. This should be given via an infusion pump

- **Type 1 diabetes:** give subcutaneous rapid acting analogue insulin (i.e. Novorapid®, Humalog® or Apidra®). Assume that 1 unit will drop blood glucose by 3 mmol/L BUT wherever possible take advice from the patient about the amount of insulin normally required to correct a high blood glucose. Recheck the blood glucose 1 hour later to ensure it is falling. If surgery cannot be delayed commence VRIII.

http://www.daysurgeryuk.net/bads/joomla/files/Handbooks/DaySurgeryDiabetic.pdf

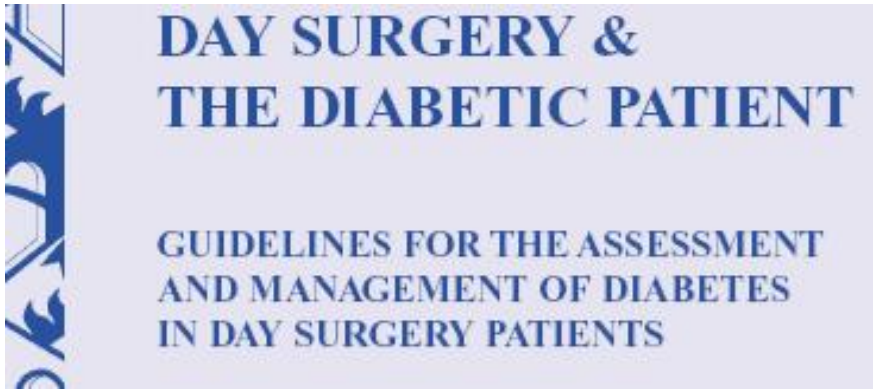


Table 2. **Pre-Operative Checklist For All Diabetic Patients**

All usual selection criteria for day surgery met
Intermediate surgery can be scheduled for a morning list
Patient has no history of
- Repeated hypoglycaemic attacks
- Recurrent admission to hospital with complications related to diabetes

Patient and carer are able to measure blood glucose at home
Patient and carer understand about hypoglycaemia and its treatment
HbA1c < 8%

Minor procedures

- *For the purposes of this booklet, a minor surgical procedure is defined as one where the patient is expected to resume oral intake within an hour or so of surgery.* We anticipate that many day surgery units will wish to limit their management of diabetic patients to those in this category.
- All of these patients can be managed by simply postponing their usual diabetic treatment (insulin or oral hypoglycaemic drugs) until they take a delayed meal after surgery.
    - Obviously it is important that these patients are treated first on the operating list and that blood glucose is monitored closely.

Glucose/potassium/insulin (GKI) infusion
1000mls 5% glucose + 20mmol KCl * + insulin as below:

Blood glucose 4 –11mmol/l → add 10 units human actrapid
Blood glucose > 11mmol/l → add 16 units human actrapid

Infuse at 100mls/hr using a multilumen IV set connector incorporating a one-way valve so that the cannula can also be used for anaesthetic drugs

Sweden

- **Inf glucose 50 mg/ml** 1000 ml, 100 ml/h iv. Without insulin.
- Provide ½ normal dose NPH-insulin *(Humulin NPH, Insulatard or Insuman Basal).*
- P-glukos >10* mmol/l consider additional **Novorapid** 2-5-10 E sc.

Aspirin

- Meta analysis show
  - **Aspirin continuation – 1.5 fold increased risk of bleeding**
  - **Aspirin withdrawal – 3 fold higher risk for cardiac events**
    - **Thus should only be discontinued if the bleeding risk outweighs the potential benefit**

PCI and dual antiplatelet treatment

General management ***ESC***

- Balloon angioplasty only
  - > 14 days
- Bare metal stent
  - > 3smonths
- Drug eluting stent
  - > 12 months

..basic

- Information and …..motivated..
  - ***”informed consent”***

    - Well-informed and prepared is a better than an anxious and un-understanding patient

Crit Care Nurs Q
Vol. 31, No. 1, pp. 52–58

Pre-Hospital Discharge Planning

Empowering Elderly Patients Through Choice

Mary L. Merriman, MSW

- *This article presents an alternative plan that begins with **outpatient education preceding admission** and follows the patient throughout the continuum of care including postdischarge.*

- Tidsskr Nor Laegeforen.
- 2010 Apr 8;130(7):742-6.
- **Ambulatory surgery and anaesthesia**
- [Article in Norwegian]
- Raeder J, Nordentoft J.
- Anestesiavdelingen, Oslo universitetssykehus, Ullevål, 0407 Oslo og Institutt for sykehusmedisin Det medisinske fakultet Universitetet i Oslo, Norway. johan.rader@medisin.uio.no

- RESULTS:
- With the advent of modern techniques, **anaesthesia is no longer a limiting factor for whether surgery can be performed on an ambulatory basis or not.**
  - The decision to hospitalize a patient after elective surgery is based on limitations in the patient's general health, daily functioning and psychosocial status or the type of surgical procedure planned.

- When assessing whether surgery can be elective or not it is valuable to consider the entire treatment chain and ask the following questions:
  - Can this patient who has undergone this procedure be expected to cope with transport and staying at home or in a hotel the same day as the operation, when escorted by an adult until the next day? - and is it safe?

- INTERPRETATION:
  - *To ensure good planning and performance, it is important that the anaesthetist has access to up-to-date information on planned surgical procedures, the patient's general health, use of medication, allergies and level of daily functioning.*

Almost any procedure is possible but….

- Br J Surg. 2010 Mar;97(3):410-4.
- **Factors influencing selection for a day-case or 23-h stay procedure in transanal endoscopic microsurgery.**
- Ford SJ, Wheeler JM, Borley NR.
- Department of General Surgery, Cheltenham General Hospital, Cheltenham, UK. samuelford@hotmail.co.uk

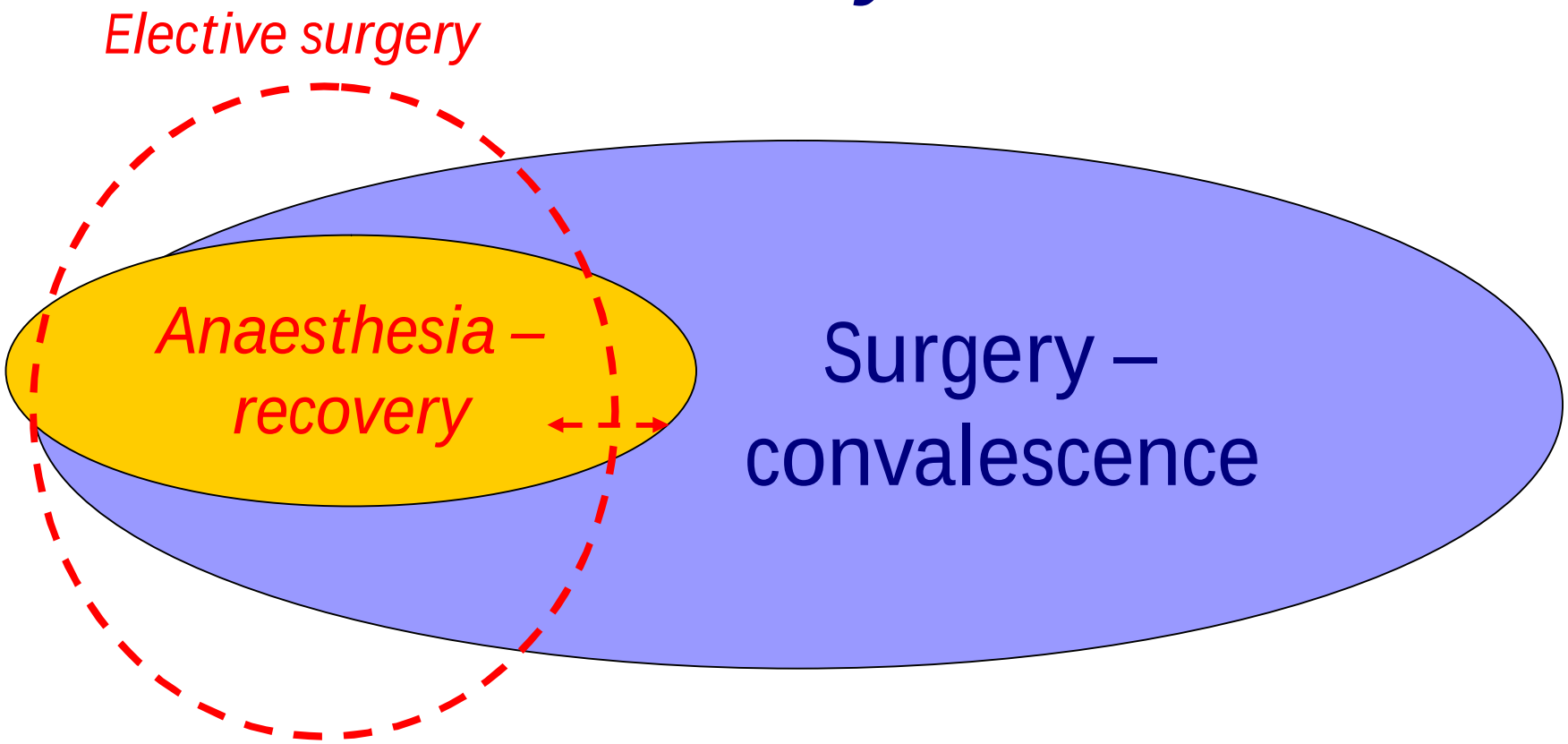
- **Abstract**
- BACKGROUND: Transanal endoscopic microsurgery (TEMS) is an alternative to radical resection of the rectum for benign lesions and early rectal cancer. This study aimed to identify whether day-case TEMS is safe and which factors dictate patient suitability and length of stay (LOS).
- METHODS: Details of patients undergoing TEMS resection were retrieved from a tertiary referral prospective database.

- RESULTS:
- Of 96 patients,
  - 46 (48 per cent) were day cases,
  - 24 (25 per cent) had a 23-h stay
  - 26 (27 per cent) were inpatients.
- The frequency of day-case surgery increased significantly over the study interval (P = 0.050).

- Distance of the lesion from the anorectal junction, malignant potential and travel distance had no bearing on LOS.
- Older age (P = 0.004) and duration of surgery (P = 0.002) correlated significantly with increased LOS.
- Lesions covering one quadrant involved a significantly shorter stay than those covering two or more quadrants (P = 0.002).
- Maximum diameter (mean 5.7 cm) was strongly related to LOS (P = 0.009).
- Day-case and 23-h stay patients had a significantly higher proportion of lower-risk lesions (P = 0.001).

- CONCLUSION:
- **High-volume day-case** TEMS appears safe, even when long travel distances are involved. With advances in practice and procedural safety, traditional risk factors may not be as important as currently thought.

Elective surgery fast tracking, accelerated recovery



Scandinavian Journal of Surgery 98: 155–159, 2009

ENHANCED RECOVERY AFTER COLORECTAL SURGERY. RESULTS FROM A PROSPECTIVE OBSERVATIONAL TWO-CENTRE STUDY

A. C. Mohn[1], S. V. Bernardshaw[2], S.-M. Ristesund[3], P. E. Hovde Hansen[1], O. Røkke[4,5]

[1] Department of Surgery, Haugesund Hospital, Haugesund, Norway
[2] Department of Surgery, Stavanger University Hospital, Stavanger, Norway
[3] Department of Gynaecology, Haukeland University Hospital, Bergen, Norway
[4] Department of Surgery, Akershus University Hospital, Oslo, Norway
[5] Faculty of Medicine, University of Oslo, Norway

Information and proper planing

We used the peri-operative principles recommended by Kehlet et al. (5). One week before the operation, the patients and their relative(s) received thorough information from a special study-nurse and surgeon about the recovery-design. The day of discharge was planned (4) with emphasis on safety (1, 8, 9) and collaboration with the local health-care system. The patients were allowed a normal diet with an oral nutritional supplement (ONS) of protein the day before the operation and up to six hours before surgery, and allowed to drink clear fluids until two hours before surgery.

A specialised nurse arranged the postoperative mobilisation. On the day of surgery, the patients were mobilised out of bed for two hours. On the first postoperative day, the patient was out of bed for eight hours. The EDA continued for 48 hours postoperatively, to give postoperative analgesia, to enhance mobilisation and as prophylaxis of ileus and to promote GI-motility. In addition, the patients received one gram of paracetamol four times daily and per oral NSAIDs. Opiate administration was restricted and additional opiate was given only when other efforts failed.

J Gastrointest Surg (2009) 13:2321–2329
DOI 10.1007/s11605-009-0927-2

REVIEW ARTICLE

Less complication following enhanced discharge

Enhanced Recovery after Surgery (ERAS) Programs for Patients Having Colorectal Surgery: A Meta-analysis of Randomized Trials

Cagla Eskicioglu · Shawn S. Forbes · Mary-Anne Aarts · Allan Okrainec · Robin S. McLeod

Study or Subgroup	ERAS Programs Events	Total	TPC Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Anderson 2003	0	14	1	11	35.8%	0.27 [0.01, 5.97]
Gatt 2005	1	19	0	20	10.5%	3.15 [0.14, 72.88]
Khoo 2007	0	35	2	35	53.7%	0.20 [0.01, 4.02]
Total (95% CI)		**68**		**66**	**100.0%**	**0.53 [0.12, 2.38]**
Total events	1		3			

Heterogeneity: $Chi^2 = 1.83$, df = 2 (P = 0.40); $I^2 = 0\%$
Test for overall effect: Z = 0.82 (P = 0.41)

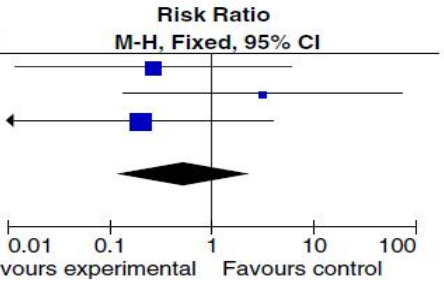


Figure 2 Pooled analysis of postoperative mortality, ERAS vs. traditional perioperative care (*TPC*).

Study or Subgroup	ERAS Programs Events	Total	TPC Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Anderson 2003	4	14	5	11	12.2%	0.63 [0.22, 1.80]
Delaney 2003	7	31	10	33	21.1%	0.75 [0.32, 1.71]
Gatt 2005	8	19	15	20	31.8%	0.56 [0.31, 1.01]
Khoo 2007	9	35	16	35	34.9%	0.56 [0.29, 1.10]
Total (95% CI)		**99**		**99**	**100.0%**	**0.61 [0.42, 0.88]**
Total events	28		46			

Heterogeneity: $Chi^2 = 0.36$, df = 3 (P = 0.95); $I^2 = 0\%$
Test for overall effect: Z = 2.63 (P = 0.009)

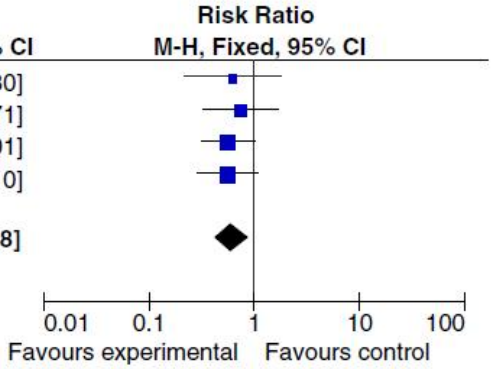


Figure 3 Pooled analysis of total complications (major and minor), ERAS vs. traditional perioperative care (*TPC*).

Information and motivation

Accelerated Rehabilitation

There are 2 factors that permit patients to participate in an accelerated rehabilitation program. The first, and perhaps most important, is the motivated patient. Even with some pain that most patients would consider unbearable, the motivated patient can power through. By extension, the second necessary factor for most patients is achieving adequate post-operative pain control. The focus of any rehabilitation protocol should be to control pain because this is the variable the surgeon can manipulate [11]. No amount of encouragement or education can convert unmotivated patients into motivated ones, especially if they are experiencing pain.

+ adequate pain relief

The Journal of Arthroplasty Vol. 22 No. 7 Suppl. 3 2007

Pain Management and Accelerated Rehabilitation for Total Hip and Total Knee Arthroplasty

Amar S. Ranawat, MD.*† and Chitranjan S. Ranawat, MD†‡

Table 1. Preoperative

Preemptive Analgesia Given Preoperatively
1. Celecoxib 400 mg orally
2. Acetaminophen 1000 mg orally
3. Tramadol 50 mg
4. Oxycodone 20 mg orally
5. Pantoprazole 40 mg orally
6. Warfarin 5 mg orally

Table 2. Intraoperative

Intraoperative Injection	
1. 0.5% Bupivacaine	200-400 mg
2. Morphine sulphate (0.4-1.0 cc)	4-10 mg
3. Epinephrine 1/1000 (0.3 cc)	300 μg
4. Methylprednisolone acetate	40 mg
5. Cefuroxime (10 cc)	750 mg
6. Normal saline	22 cc
No steroids in diabetic/immunocompromised patients	
Vancomycin if allergic to penicillin	
Clonidine transdermal patch applied in operating room—100 μg/24 h	
Injection sites for intraoperative periarticular injection	

Table 3. Postoperative

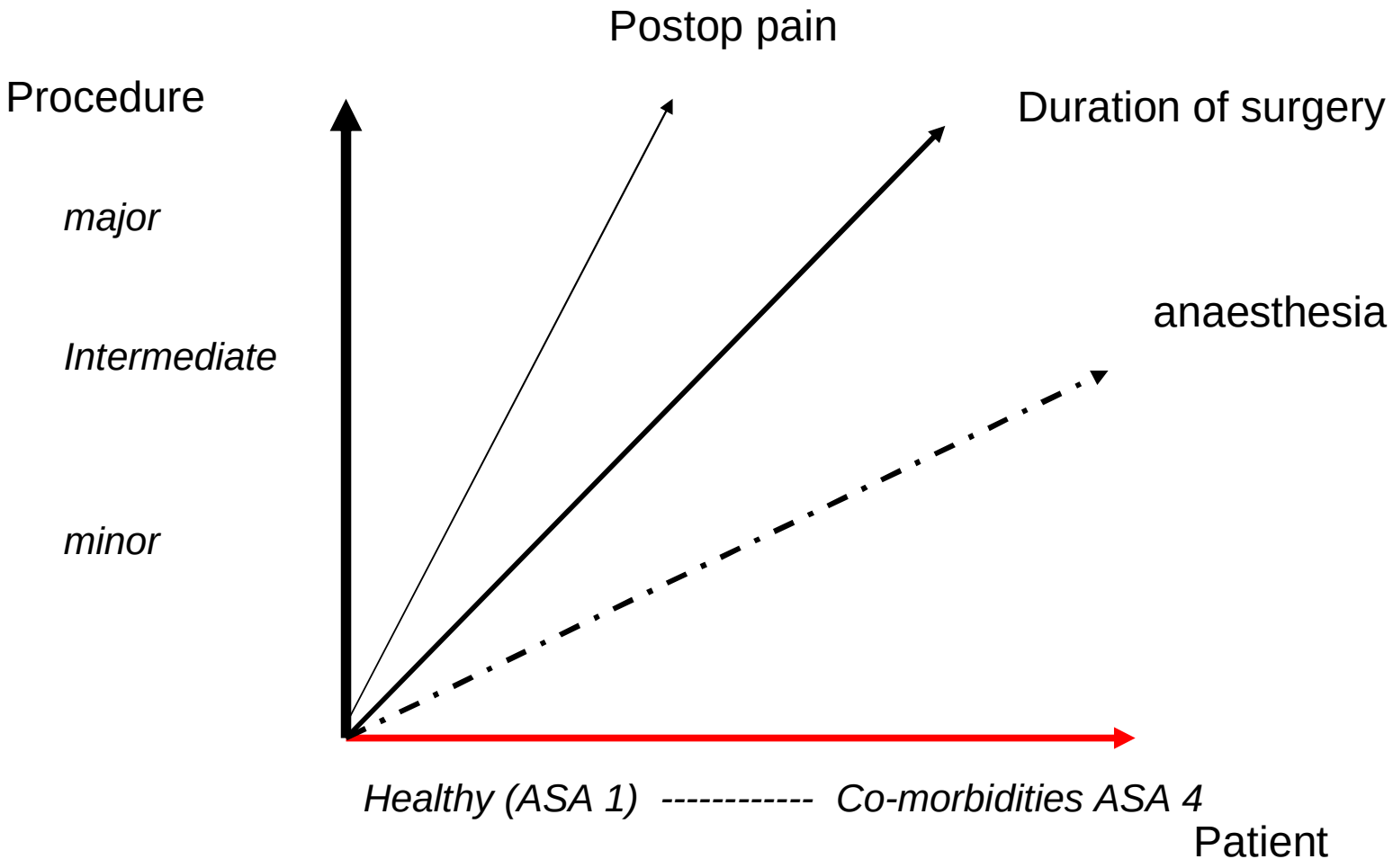
Postoperative Analgesia/Medications
Recovery room
1. Ketorolac IV every 6 h (15 mg if age >65 y, 30 mg if <65 y, hold if with renal impairment)
2. If ketorolac ineffective, morphine 2-4 mg IV every 15 min
3. Metoclopramide 10 mg IV PRN
Orthopedic floor
1. Ketorolac IM every 6 h PRN (15 mg if age >65 y, 30 mg if <65 y, hold if with renal impairment)
2. If ketorolac ineffective, morphine 2-4 mg IM every 2-4 h
3. Celecoxib 200 mg orally daily for 10 d
4. Oxycodone SR 10/20 mg orally every 12 h for 48 h
5. Oxycodone 5 mg orally every 6 h PRN
6. Acetaminophen 1000 mg orally every 6 h
7. Pantoprazole 40 mg orally daily

PRN, as needed; SR, sustained release.

Day Surgery in the Elderly

- **Outpatient total hip arthroplasty.**
- Dorr LD, Thomas DJ, Zhu J, Dastane M, Chao L, Long WT.
- J Arthroplasty. 2010 Jun;25(4):501-6.
- The Arthritis Institute at Good Samaritan Hospital, Los Angeles, CA 90017, USA.
- **Abstract**
- Patients younger than 65 years were studied to determine what percentage of patients would enroll in a study of outpatient total hip arthroplasty, its safety, and benefits of the program.
- Of 192 eligible patients, 69 (36%) enrolled, and 53 (77%) of these went home the same day of surgery.
- Of 53, 44 maintained a diary for the first 3, weeks and 52 completed a satisfaction questionnaire at 6 weeks. Patients were followed for 6 months for occurrence of complications.
- **There were no medical readmissions**.
- Of 52 patients who completed a 6 week questionnaire, 50 (96%) were satisfied with the decision to have outpatient total hip arthroplasty. There were no objective physical benefits identified.
- *This study reports the distribution of acceptance and completion of same day discharge for patients with total hip arthroplasty in a metropolitan population. It confirms safety in selected patients.*

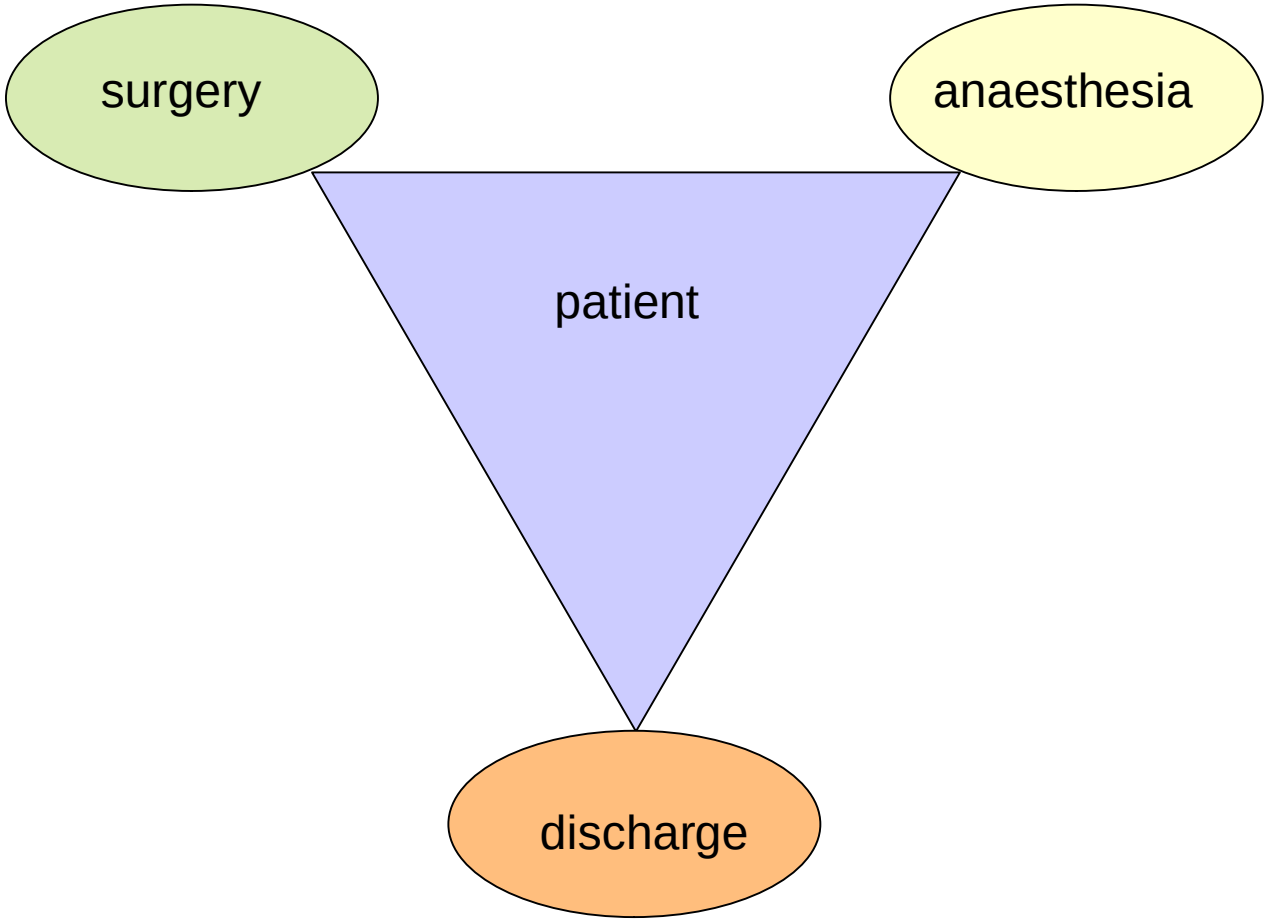
Day case assessment guide



Procedure-specific risk

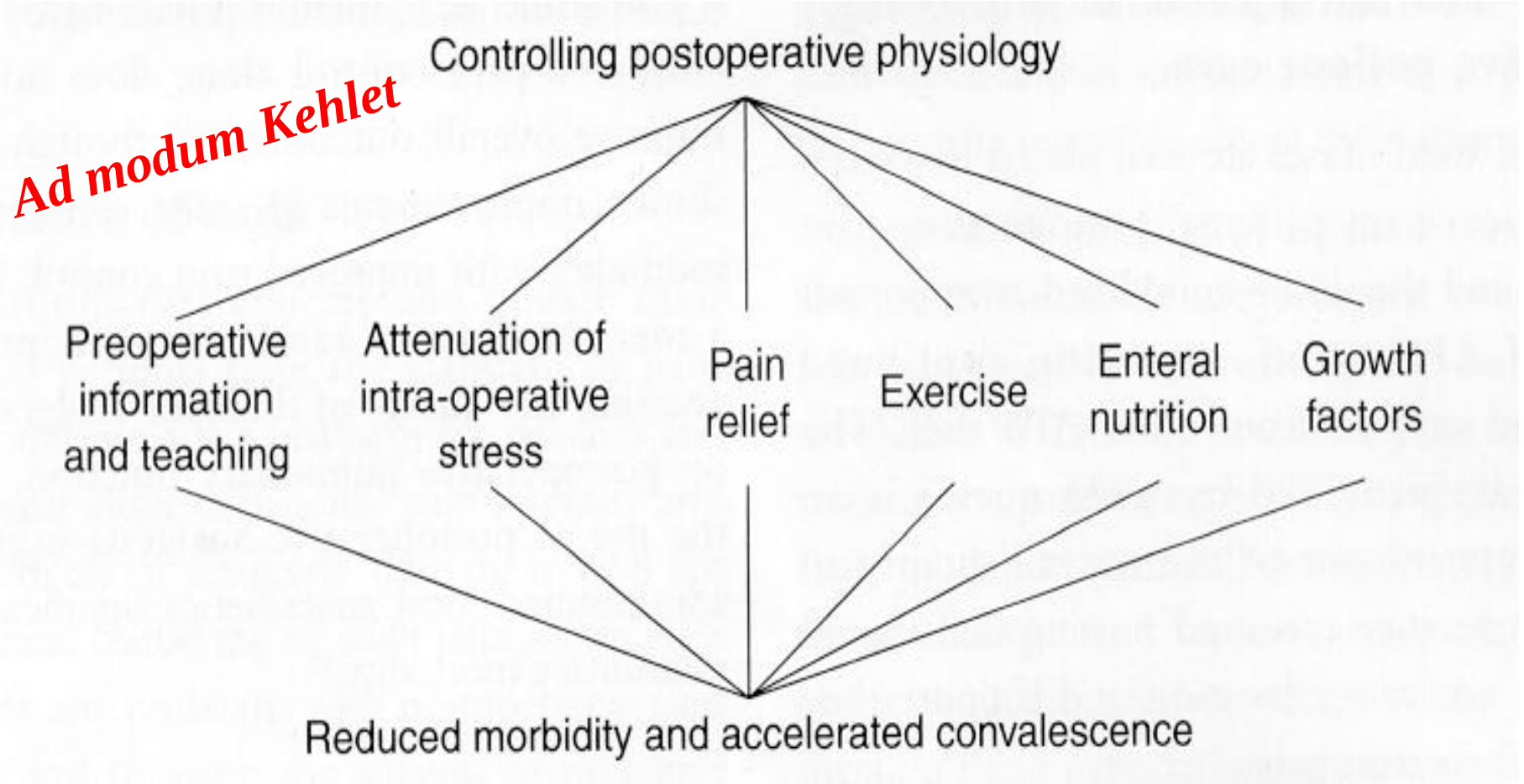
- **High-risk surgery** (the highest-risk category and also the most extensively studied), which has been associated with cardiac morbidity rates of greater than 5% in many reports.
  - Examples include aortic and other major vascular surgery, as well as peripheral vascular surgery.
- **Intermediate-risk surgery**, for which reported cardiac morbidity rates range from 1% to 5%.
  - Examples include intraperitoneal and intrathoracic procedures, carotid endarterectomy, head and neck surgery, orthopedic surgery, and prostate surgery.
- **Low-risk surgery**, for which reported cardiac morbidity rates are below 1%.
  - Examples include endoscopic and superficial procedures, cataract surgery, breast surgery, and ambulatory surgery.

Patient in focus

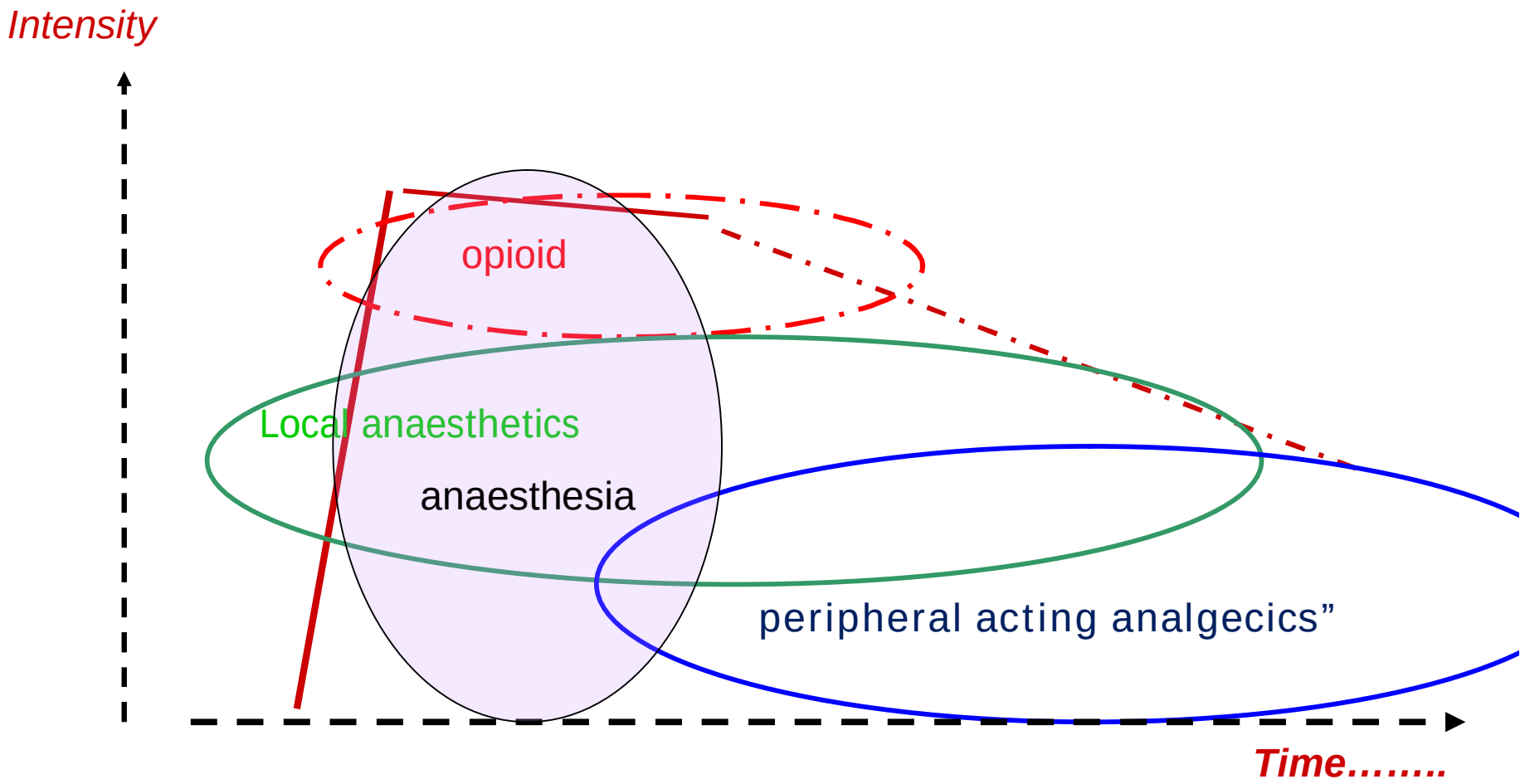


Anaesthetic service

The perioperative multi-modal approach



Multi-modal approach in conjuction to day surgery



Anti-emetic strategy

- Female
- History of PONV
  - motionsickness
- Non-smoking
- Need for postoperative opioid

- Steroid
- Droperidol
- Metaclopramide
- 5-HT-3-blocker
  - Considere the need for a rescue anti-emetic

Preoperative assessment

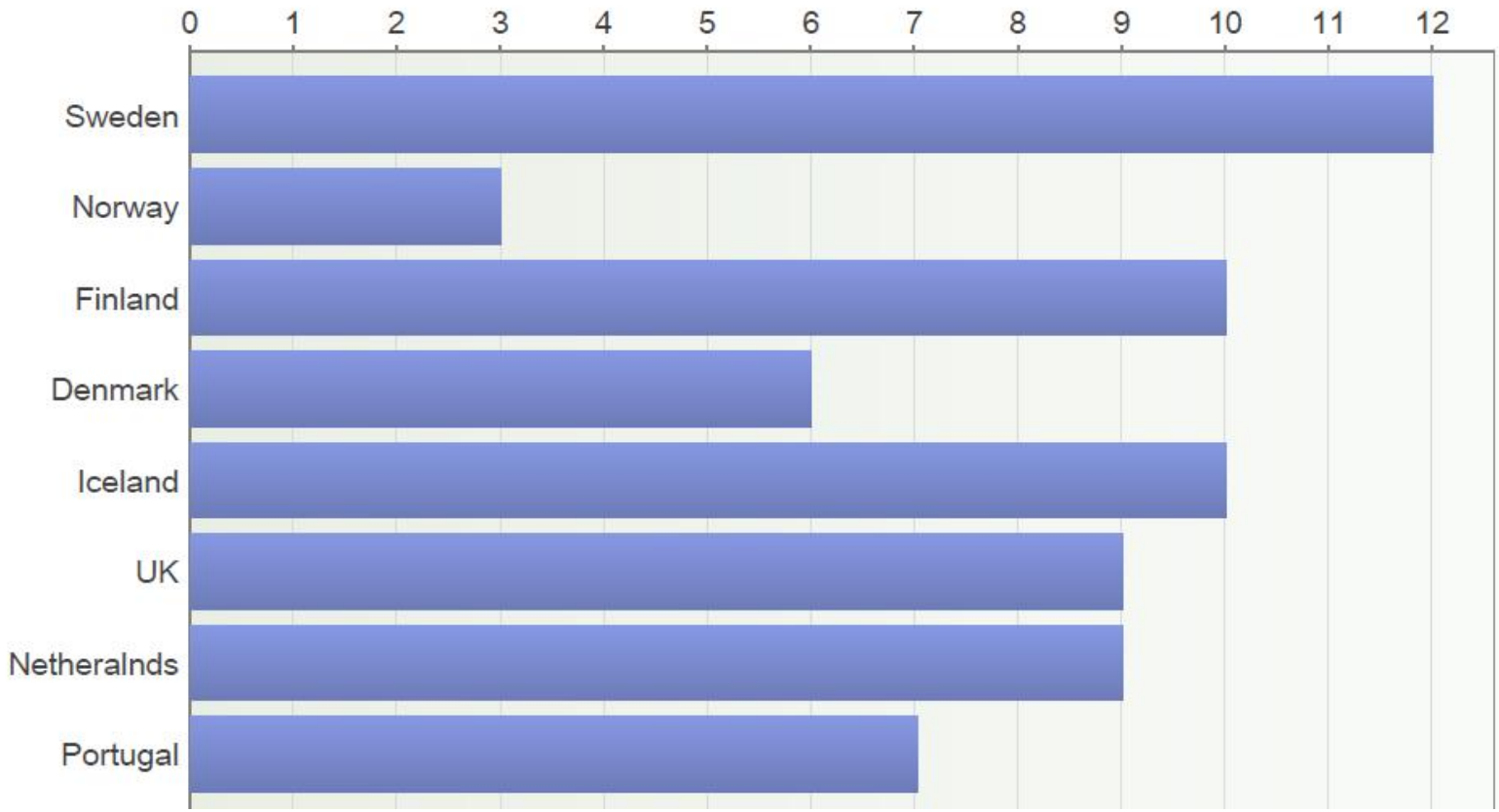
- Exchange of information
  - Patient to healthcare
  - Healthcare to patients
- Optimisation of medical conditions
- Planning for optimal care
  - *Minimising risk*

"take home message"

- Patient related risk
  - The risk for any adverse event related to any exacerbation of patient known medical history
- Surgical related risks
  - Complexity and duration of surgery
    - Bleed
    - Wound
    - Infectious
- Risk of (severe) PONV
- Risk for severe pain
- Thrombo-embolic risk
- ..the composite risk and subsequent need for prolonged hospital observation and surveillance

36. This answer comes from

Antal svarande: 66

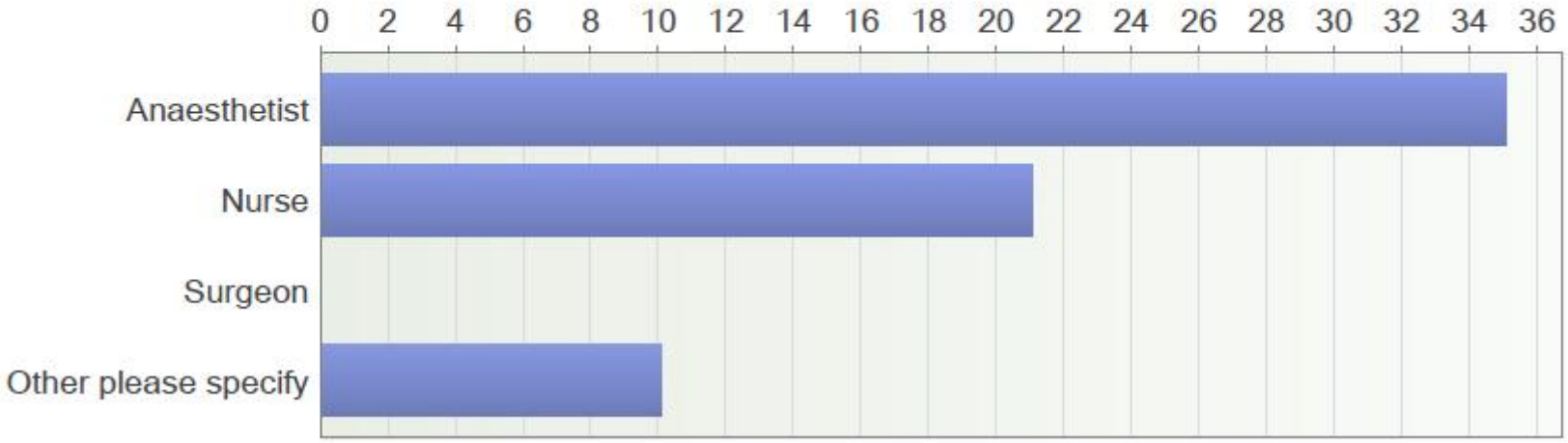


2. Preoperative assessment is commonly done for day case patients

Antal svarande: 65

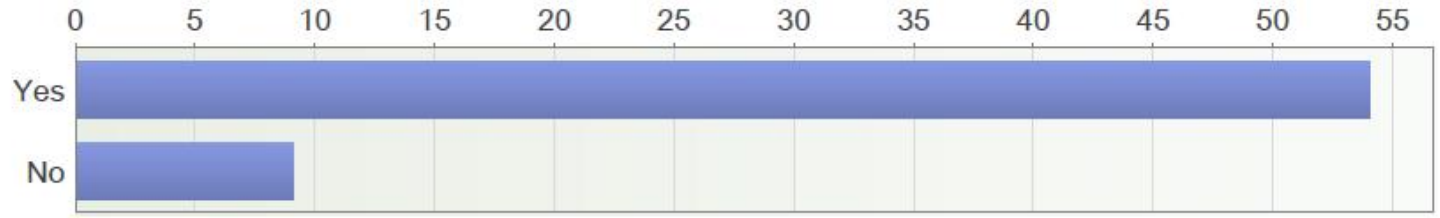
3. Preoperative assessment is done by

Antal svarande: 66



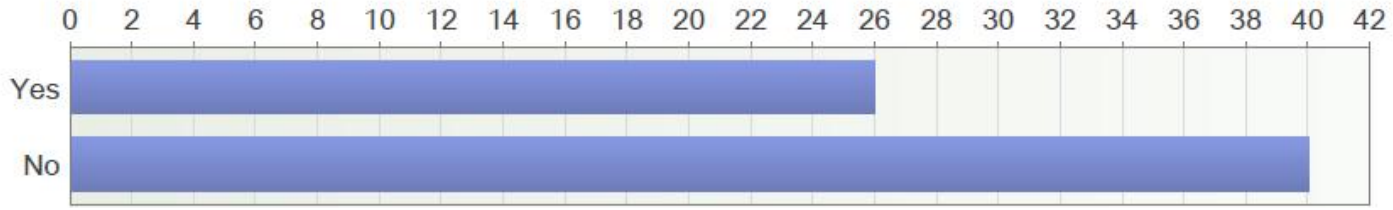
4. Do you use a structured leaflet for patient's self assessment?

Antal svarande: 63



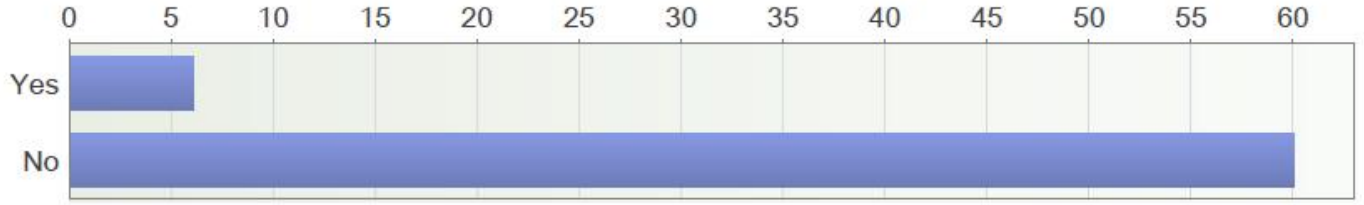
5. Do you have an explicit/defined BMI limit for day case patient?

Antal svarande: 66



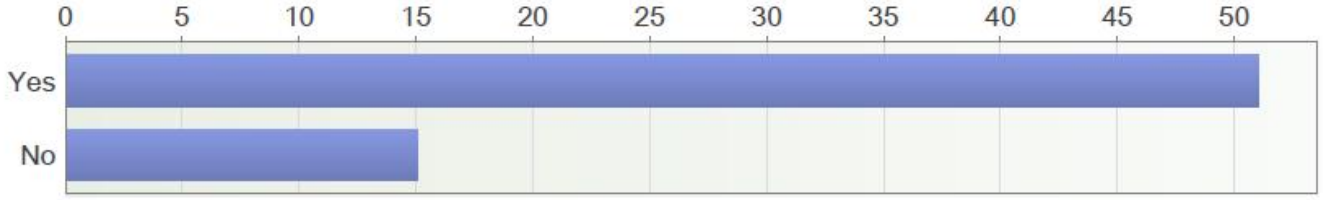
7. Do you have an explicit/defined upper age limit for day case patient?

Antal svarande: 66



9. Do you have an explicit/defined lower age limit for day case patient?

Antal svarande: 66



Preoperative assessment

- Exchange of information
  - Patient to healthcare
  - Healthcare to patients
- Optimisation of medical conditions
- Planning for optimal care

Suitable or not suitable?

Patient selection

Preoperative assessment of patients scheduled for day surgery

Enhanced/accelerated recovery - **Day surgery**

Patient selection

- ✓ No absolute borders
- ✓ Optimization
- ✓ Secure on an individual base adequate benefit risk balance;
- ✓***...would safety and/or quality of care <u>improve significantly</u> if the patients was done as an inpatients?***

… thank you for your attention