How to organise a successful delivery of preoperative assessment pathway

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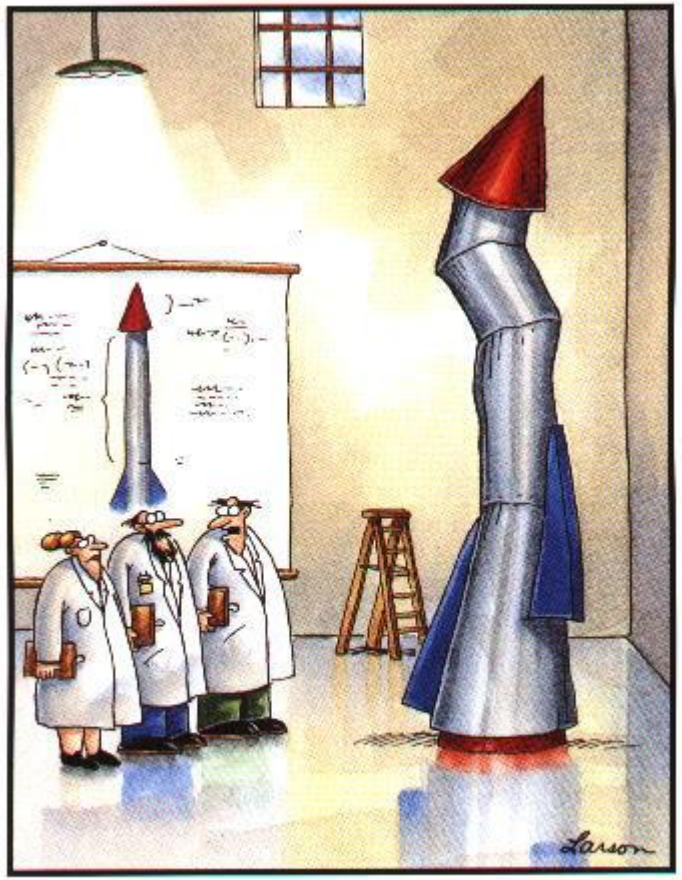
Pressures of a Target Driven Health Care System

- Resources
- Length of Stay
- Quality of Care
- Readmission



"It's time we face reality, my friends. ...
We're not exactly rocket scientists."

Preoperative Anaesthetic assessment

- Is an art
- Is integral to practice
- Has a growing literature to support it
- Includes risk stratification
- Is the time to discuss consent

Preoperative Assessment and Planning

NHS Institute for Innovation and Improvement

www.institute.nhs.uk/…quality…improvement…/Itemid,5015.html

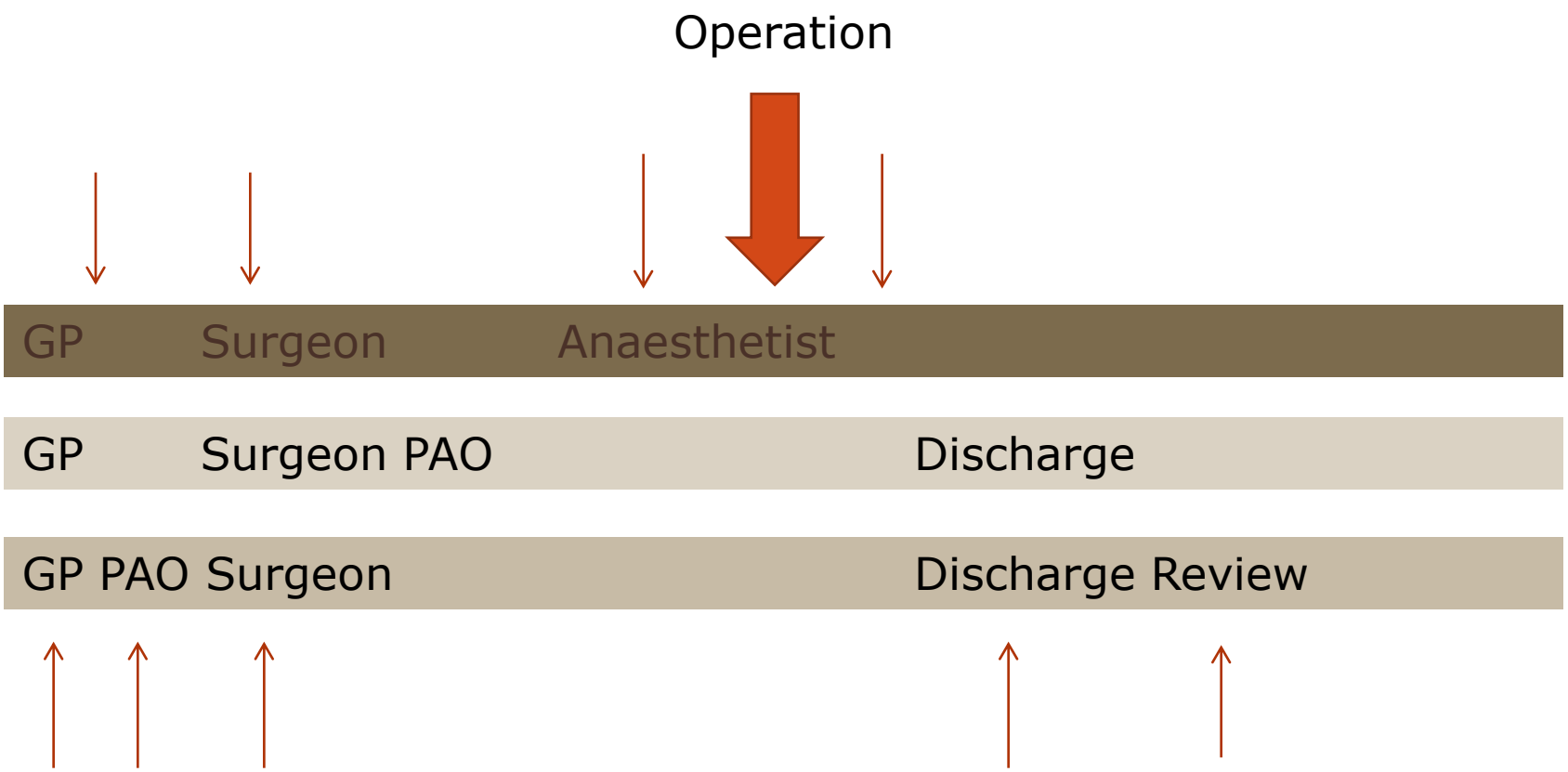
Preoperative Tests

clinical guideline 3-preoperative tests www.nice.org.uk/G003

Benchmarking

British Association of Day surgery www.bads.co.uk

Process Planning



IT IS ALL ABOUT VARIATION

"If all variation were bad, solutions would be easy. The difficulty is in reducing the bad variation, which reflects the limits of professional knowledge and failures in its application, while preserving the good variation that makes care patient centred. When we fail, we provide services to patients who don't need or wouldn't choose them while we withhold the same services from people who do or would, generally making far more costly errors of overuse than of underuse."

Mulley, AJ. Improving productivity in the NHS. BMJ 2010. 341:c3965 doi: 10.1136/bmj.c3965 (Published 27 July 2010)

Goals of preoperative assessment

- True informed consent – discussion of potential **outcomes**
- Start treatments to improve **outcomes**
- Allocate appropriate resources to patients at risk of adverse **outcomes**

Preassessment Planning
The Who, What, Why and When

- Do consultants have to be involved in the entire process?
- Do nurses lead a reliable service?
- Does staff need to be trained and dedicated?
- Does a multidisciplinary pathway improve care?

Day Surgery Leads the Way!

- Day surgery patients ASA 1,2 and ASA 3.
- Nurse lead health pre-screening
- Telephone and face to face.

Nurse led pre-assessment for inpatients

- More complex Screening Questionnaire
- Nurses trained in History taking and examination
- Investigations ordered according to NICE guidelines
- Strict Criteria for referal to Physician Anaesthetist

Cases in which preoperative assessment by house officers or nurses possibly affected management in all centres BMJ 2002;325:1323- doi:10.1136/bmj.325.7376.1323

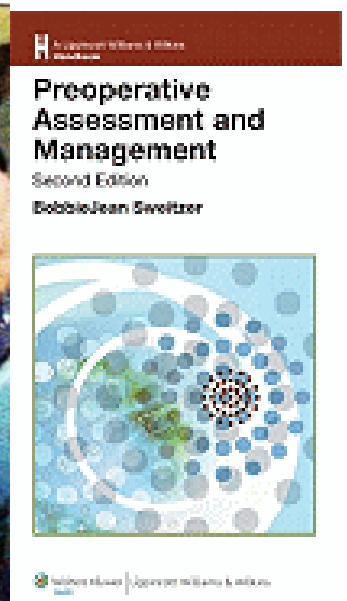
	No (%) assessed by house officers (n=926)	No (%) assessed by nurses (n=948)	Clinically important % difference*	Observed % difference (95 CI%)
History taking, physical examination, or test ordered	138 (14.9)	121 (12.8)	3.73	−2.1 (−5.3 to 1.09)
Underassessment:				
History taking	53 (5.7)	64 (6.7)	1.4	1.0 (−1.2 to 3.2)
Physical examination	46‡ (5.0)	40 (4.2)	1.2	−0.8 (−2.6 to 1.1)
Tests ordered	71 (7.7)	65 (6.9)	1.9	−0.8 (−3.2 to 1.5)
Overassessment:				
Test ordered	218 (23.5)	129 (13.6)	5.9	−9.9 (−13.4 to −6.4)

Role of the Consultant Anaesthetist

- See all high risk patients
- Review all ECGs
- Review abnormal blood results
- See all patients with predicted airway problems
- See and plan analgesia for chronic pain patients
- See patients who request to discuss anaesthesia
- See all patients having major surgery to discuss epidurals etc.

What

- Agreed protocols
- Guidelines



Managing Co-morbidities

- Establishing relationships with General Practitioners
- Protocols to manage
  - Diabetes
  - Warfarin
  - Aspirin and Anti-platelet drugs
  - Steroids
  - Coronary stents

Diseases Known and Unknown

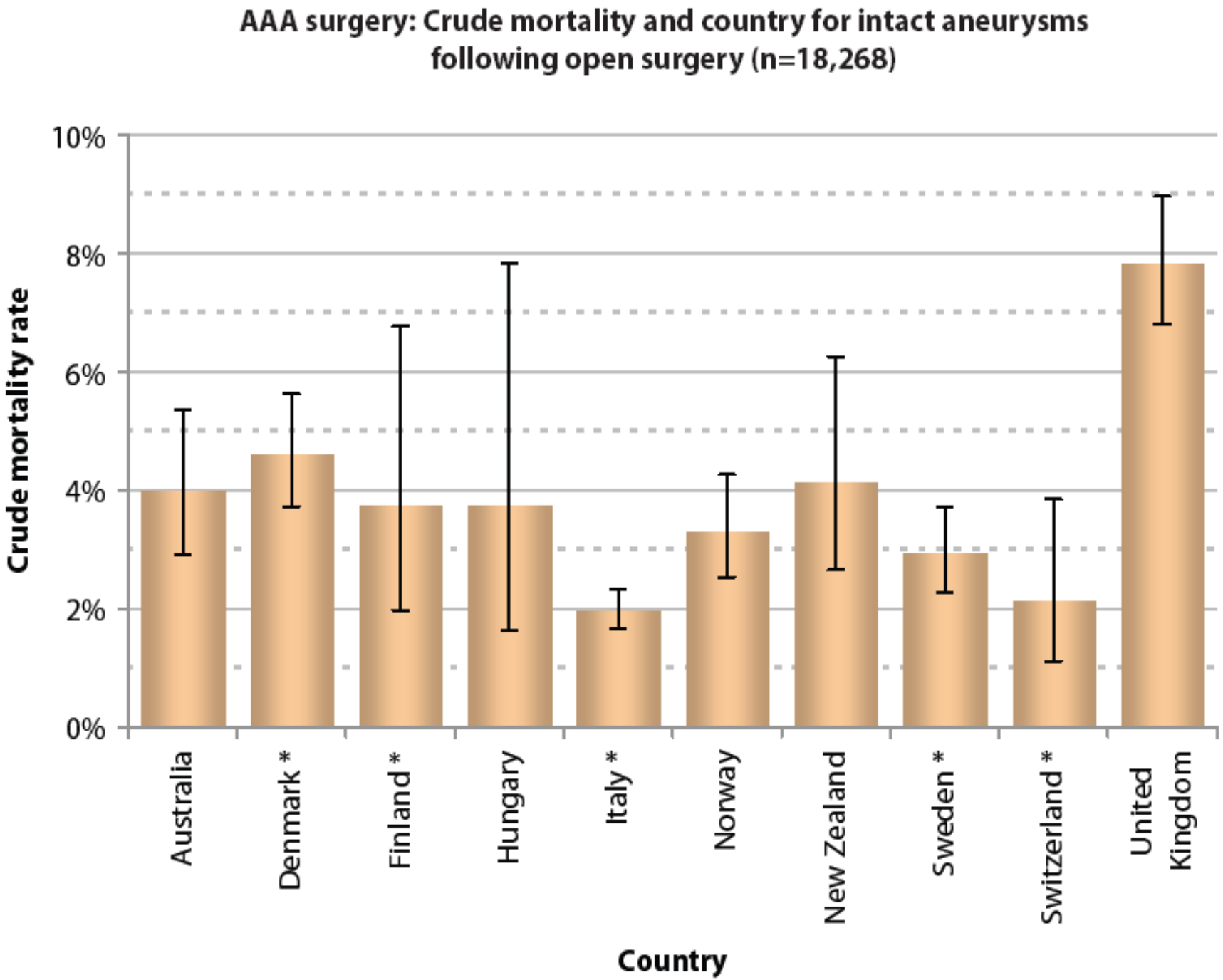
- Co-morbidities may present for the first time at Pre-anaesthestia clinic
- 2% of patients will be diagnosed with hypertension
- 1 % will present with Cardio vascular disease requiring referral to a cardiologist

Assessing Risk

- ASA
- Mortality
- ITU admission or prolonged stay
- Complications of Epidural or Spinal anaesthesia and analgesia

Prof Mike Grocott demanding more robust methodologies to assess perioperative risk BJA 2011 Identify the high risk patient

In UK 17000 high risk non-cardiac procedures each year 100000 patients develop complications with more than 25000 deaths


AAA surgery: Crude mortality and country for intact aneurysms following open surgery (n=18,268)
Crude mortality rate
10%
8%
6%
4%
2%
0%
Australia
Denmark *
Finland *
Hungary
Italy *
Norway
New Zealand
Sweden *
Switzerland *
United Kingdom
Country

NCEPOD 2005
Staffing at the preassessment clinic

Table 1. Members of the clinical team who assessed the patient at the preoperative assessment clinic *n=339. Answers may be multiple.*

Clinician	**Total**
Consultant anaesthetist	129
SpR anaesthetist year 3+	3
SpR anaesthetist year 1/2	1
SHO anaesthetist	2
Consultant surgeon	90
SpR surgeon 3+	18
SpR surgeon 1/2	2
SHO surgeon	24
PRHO surgeon	181
Nurse practitioner	142

Only 79% AAA got preassessed

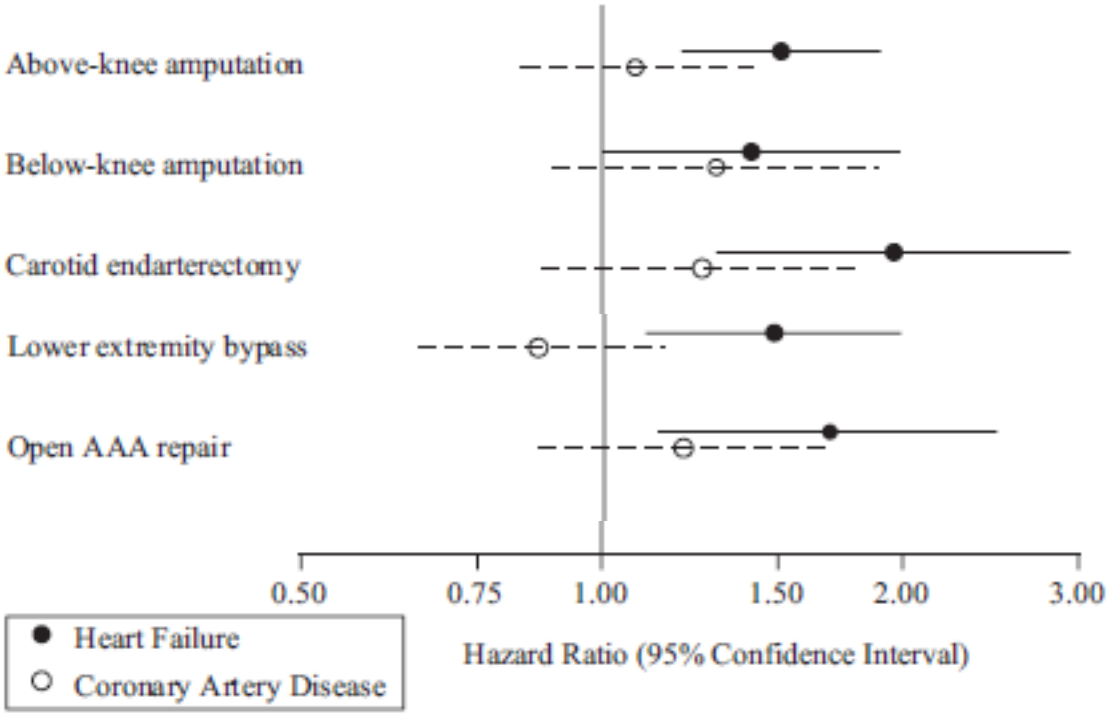
Identify surgical risk

ACC / AHA 2009 Perioperative Guidelines

Cardiac risk stratification (combined incidence of cardiac death and non-fatal myocardial infarction within 30 days of surgery) according to surgical risk (ESC)

- Low risk (<1%) Breast, Dental,Endocrine, Eye,Gynaecology, Reconstructive, Orthopaedic, Urologic
- Intermediate risk (1-5%)Intraperitoneal/Intrathoracic, Vascular (PVD, Carotid, EVAR), head and neck,neuro major, lung kidney liver transplantation, urological
- High Risk >5%: Open aortic, major peripheral Vascular

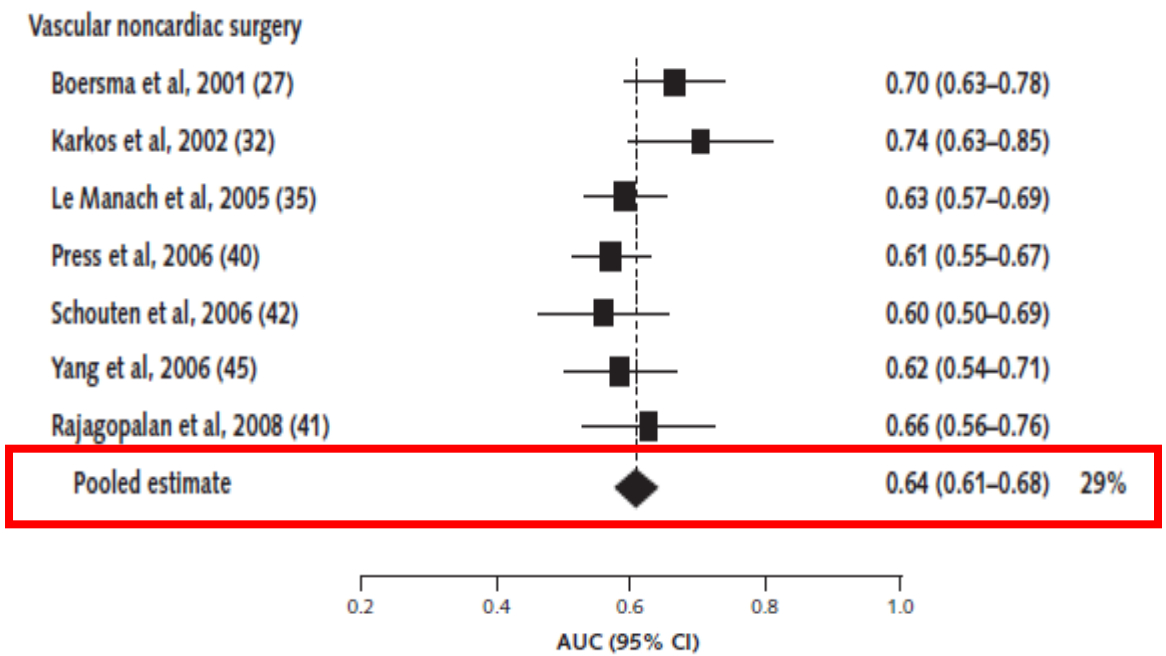
Cardiac insufficiency = worse postoperative outcomes than CAD



Operative Mortality: HF or CAD vs. neither.
Hammill et. al (2008)

Risk scores identify higher risk populations, not individuals

AUC for RCRI predicting perioperative cardiac events:



Ford, Beattie, Wijeysuyndera (2010)

Annals of Internal Medicine

The role of CPEX

- EStreP Program
- Major Vascular Surgery

CPEX

- Anaerobic threshold of 11mls/kg/min indicates high risk of prolonged ITU stay
- Early work encouraging
- Large scale trials underway
- Not yet a sufficiently accurate predictor

Why

- Patients are fully informed
- Patients are well prepared for surgery and postoperative recovery
- Increasing clinical and process quality
- Reducing inefficiency and wasted capacity

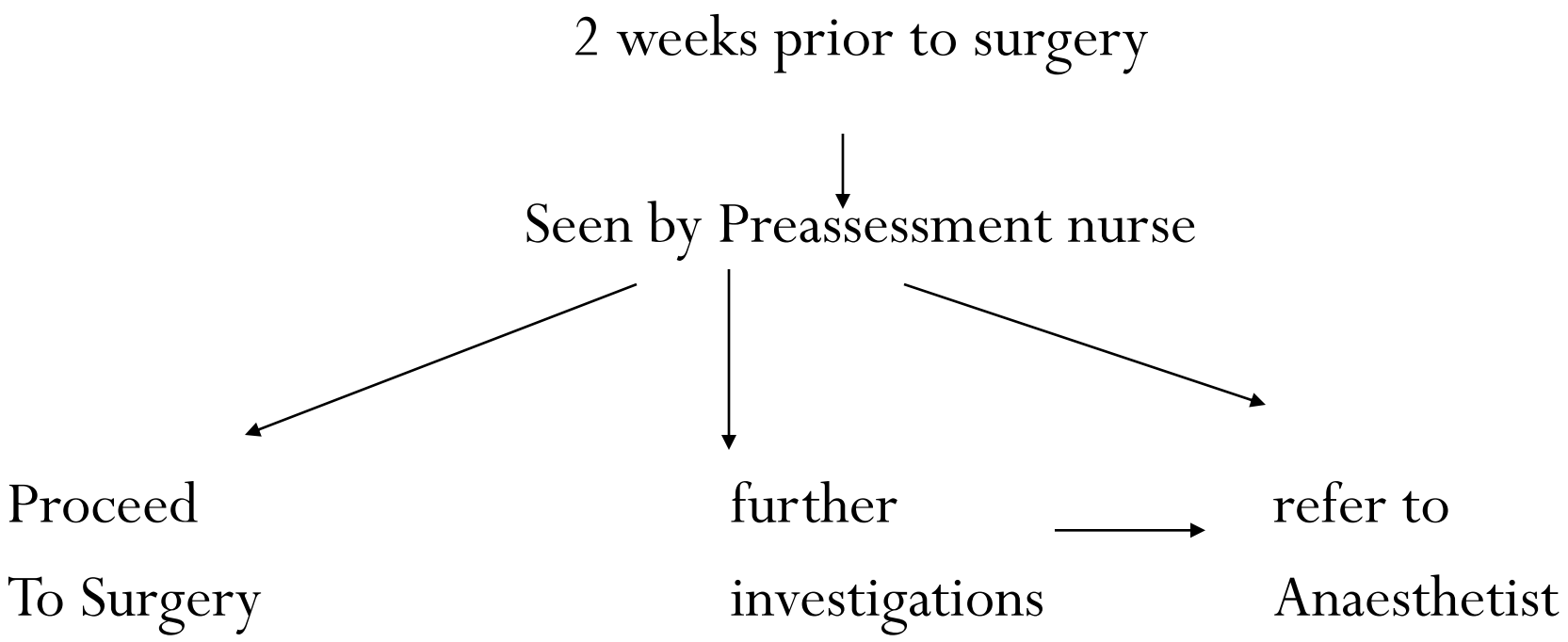
Not just assessment of fitness

- Information on surgery and anaesthesia
- Screening for MRSA and prophylactic suppression regime
- Patient request to see anaesthetist
- Management of Latex Allergy
- Booking of HDU/ITU beds

When

- POA and Planning as close to the decision to treat as possible
- Preoperative assessment can be carried out by telephone
- Six weeks preoperative ideal (postponement rate reduced from 40% to 5%

Organisation of Preassessment Clinics at UCLH



Start treatment to improve outcome

One stop clinic

- Eliminates need for further hospital visit
- Ensures maximum time for investigation
- Provides a pool of patients ready to proceed to surgery
- Unpredictable demand
- Location

UCLH Pre-anaesthetic Clinic

- 12 Whole time equivalent Nurses
- Open 08:30 to 16:15 Monday to Friday
- Anaesthetic Consultant present for all sessions

UCLH Pre Anaesthetic Clinic

- 200 patients per week
- Orthopaedic, General Surgery, Vascular surgery, some Urology
- All day surgery patients
- NO Head and Neck, Gynae or Bariatric surgery

Does it de-skill the surgeons?

- Some concerns
- Incorporate Junior Surgeons into the clinic?
- Trend to transfer these skills away from surgeons.

Does it work?

- 2009-2010
- No patients who had been to clinic cancelled on the day of surgery because they were not fit

But

Unfit not the only cause of cancellation!

Conclusion

- Robust outcome data is needed to inform the preassessment process
- Complex surgery is high risk
- Optimal medical management is vital
- Individualised risk assessment leads to a high quality consent dialogue

Workshop: National Recommendation(UK) and UCLH Pathway for Major Vascular Surgery

Framework for improving the results of elective AAA repair

Aim: **To halve the elective mortality rate for AAA surgery in the UK (to 3.5%) by 2013**

After consultation with the membership in March 2009, the Council of the Vascular Society of Great Britain and Ireland endorses the following framework for quality improvement in elective AAA surgery. Notes at the end of the guidelines will aid surgeons who may need to introduce changes to their vascular practice. A fuller version of the notes is available on the VSGBI website - www.vascularsociety.org.uk. The details of the framework are due for review in 2011.

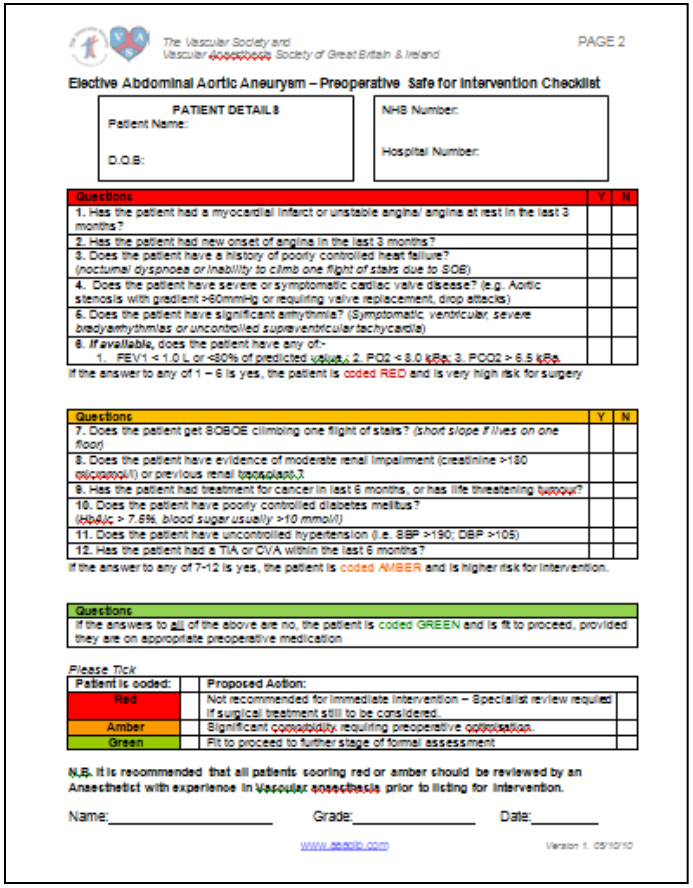
The Vascular Society of Great Britain & Ireland

How will we improve?

- Standardisation of process
  - Variation in clinical processes (for which there is evidence based best practice) can result in error and harm
  - Consistent use of risk assessment
  - MDT decision making
  - Clinical pathways
    - Satish 1997- non urgent AAA
    - Cost savings of 40.6%
    - LOS reduction of 3.5 days, ITU stay reduced
    - Fluid overload reduced 73% vs 24%

Pre-operative care bundle

- Standard preop assessment & risk scoring
- CT angiogram
- Pathways for correction of medical risks
- Seen in pre-assessment by VA
- MDT discussion of case
- Patient given choice of OR or EVAR if suitable
- VTE risk assessment



The Vascular Society and Vascular ~~Anaesthesia~~ Society of Great Britain & Ireland

PAGE 2

Elective Abdominal Aortic Aneurysm – Preoperative Safe for Intervention Checklist

PATIENT DETAILS	
Patient Name:	NHS Number:
D.O.B:	Hospital Number:

Questions	Y	N
1. Has the patient had a myocardial infarct or unstable anginal angina at rest in the last 3 months?		
2. Has the patient had new onset of angina in the last 3 months?		
3. Does the patient have a history of poorly controlled heart failure? *(nocturnal dyspnoea or inability to climb one flight of stairs due to SOB)*		
4. Does the patient have severe or symptomatic cardiac valve disease? (e.g. Aortic stenosis with gradient >60mmHg or requiring valve replacement, drop attacks)		
5. Does the patient have significant arrhythmia? (*Symptomatic ventricular, severe bradyarrhythmias or uncontrolled supraventricular tachycardia*)		
6. *If available*, does the patient have any of:- 1. FEV1 < 1.0 L or <80% of predicted value, 2. PO2 < 8.0 kPa, 3. PCO2 > 6.5 kPa		

If the answer to any of 1 – 6 is yes, the patient is coded RED and is very high risk for surgery

Questions	Y	N
7. Does the patient get SOBOE climbing one flight of stairs? (*Short slope if lives on one floor*)		
8. Does the patient have evidence of moderate renal impairment (creatinine >180 ~~micromol~~/l) or previous renal ~~transplant~~?		
9. Has the patient had treatment for cancer in last 6 months, or has life threatening ~~tumour~~?		
10. Does the patient have poorly controlled diabetes mellitus? (*HbA1c > 7.5%, blood sugar usually >10 mmol/l*)		
11. Does the patient have uncontrolled hypertension (i.e. SBP >190; DBP >105)		
12. Has the patient had a TIA or CVA within the last 6 months?		

If the answer to any of 7-12 is yes, the patient is coded AMBER and is higher risk for intervention.

Questions
If the answers to all of the above are no, the patient is coded GREEN and is fit to proceed, provided they are on appropriate preoperative medication

Please Tick

Patient is coded:	Proposed Action:	
Red	Not recommended for immediate intervention – Specialist review required if surgical treatment still to be considered.	
Amber	Significant ~~comorbidity~~ requiring preoperative ~~optimisation~~.	
Green	Fit to proceed to further stage of formal assessment	

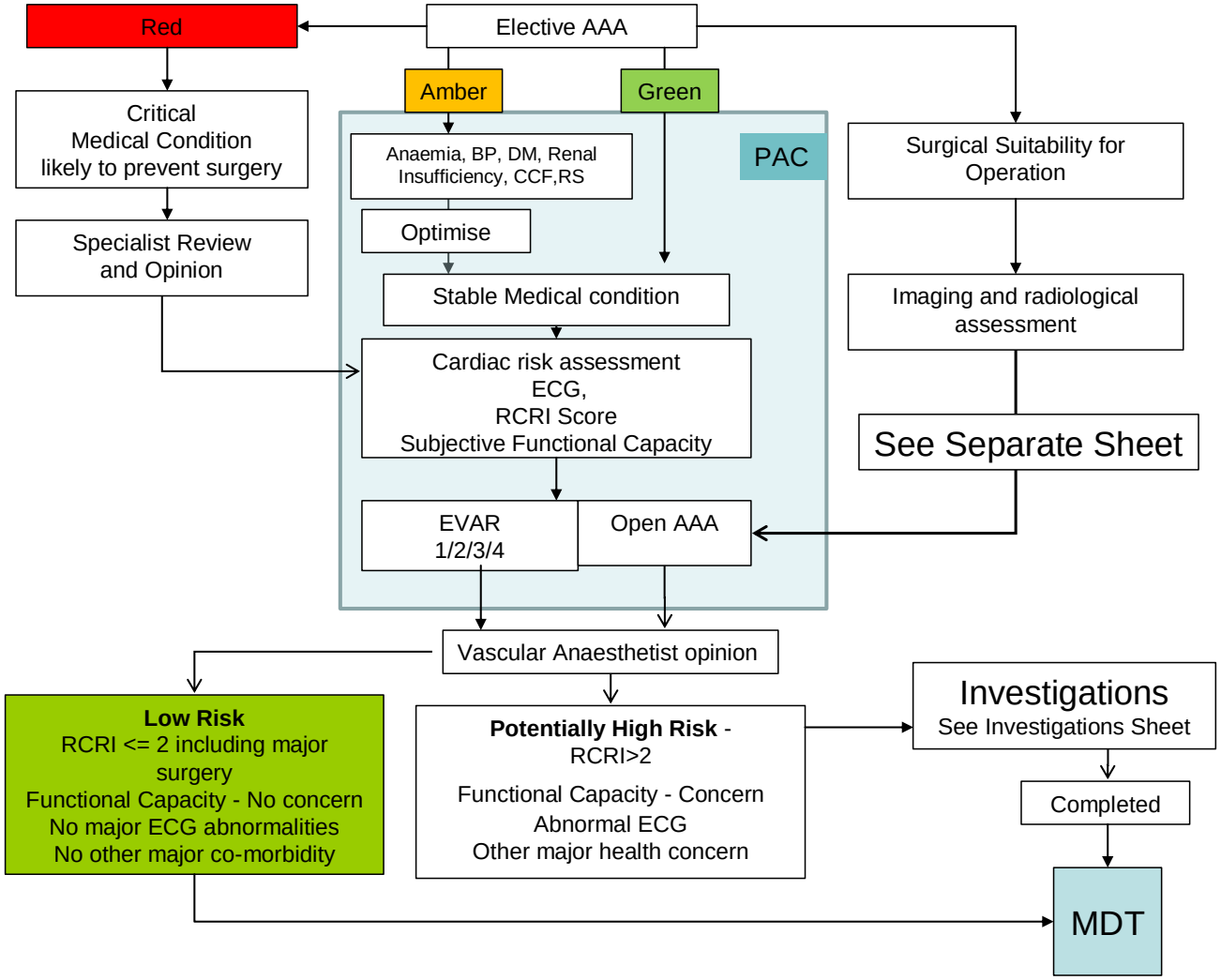
N.B. It is recommended that all patients scoring red or amber should be reviewed by an Anaesthetist with experience in ~~Vascular anaesthesia~~ prior to listing for intervention.

Name:_____ Grade:_____ Date:_____

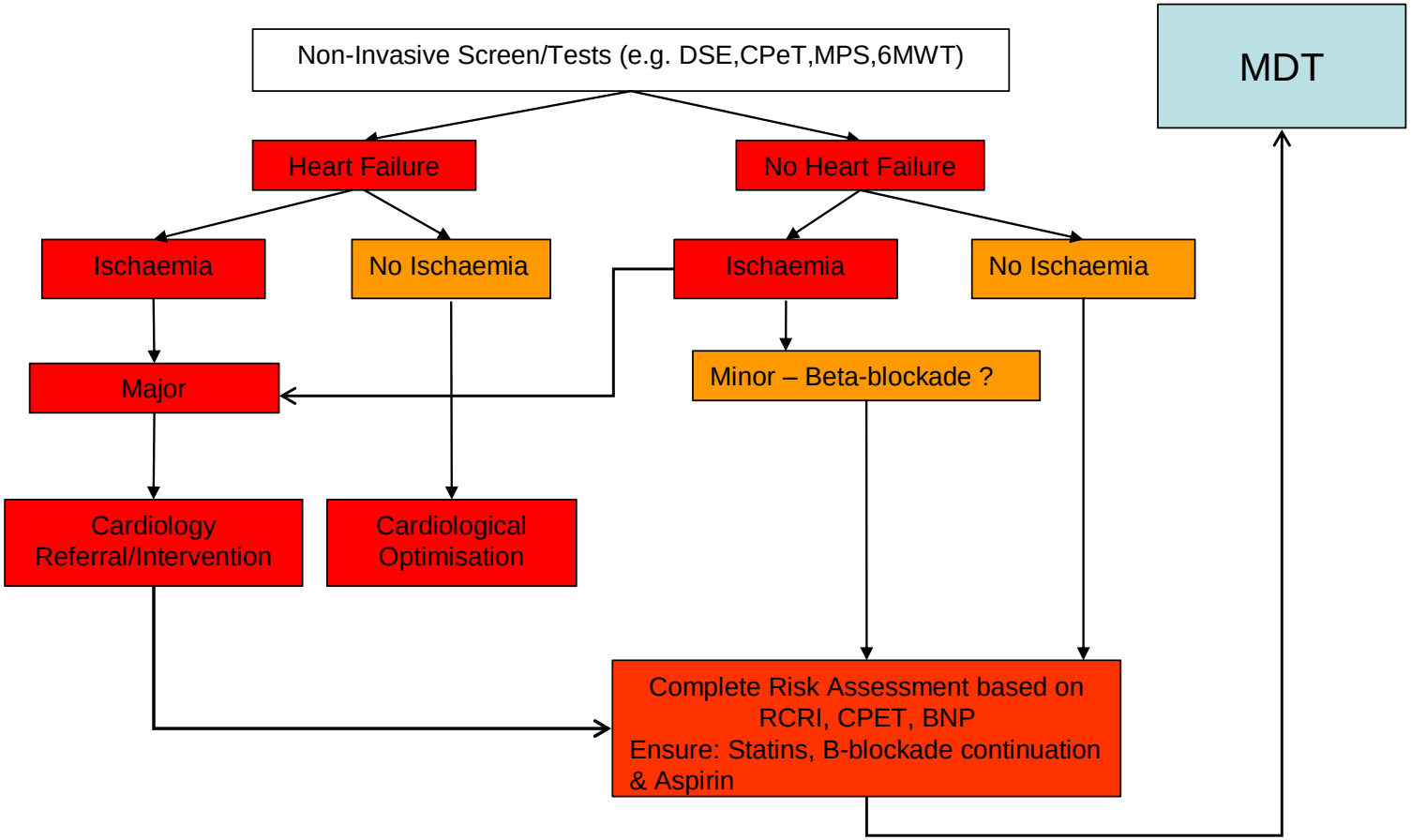
www.apaslo.com

Version 1. 05/10/10

Abdominal Aortic Aneurysm Quality Improvement Programme



Investigations Sheet



Example

Assessment Pathway

UCLH

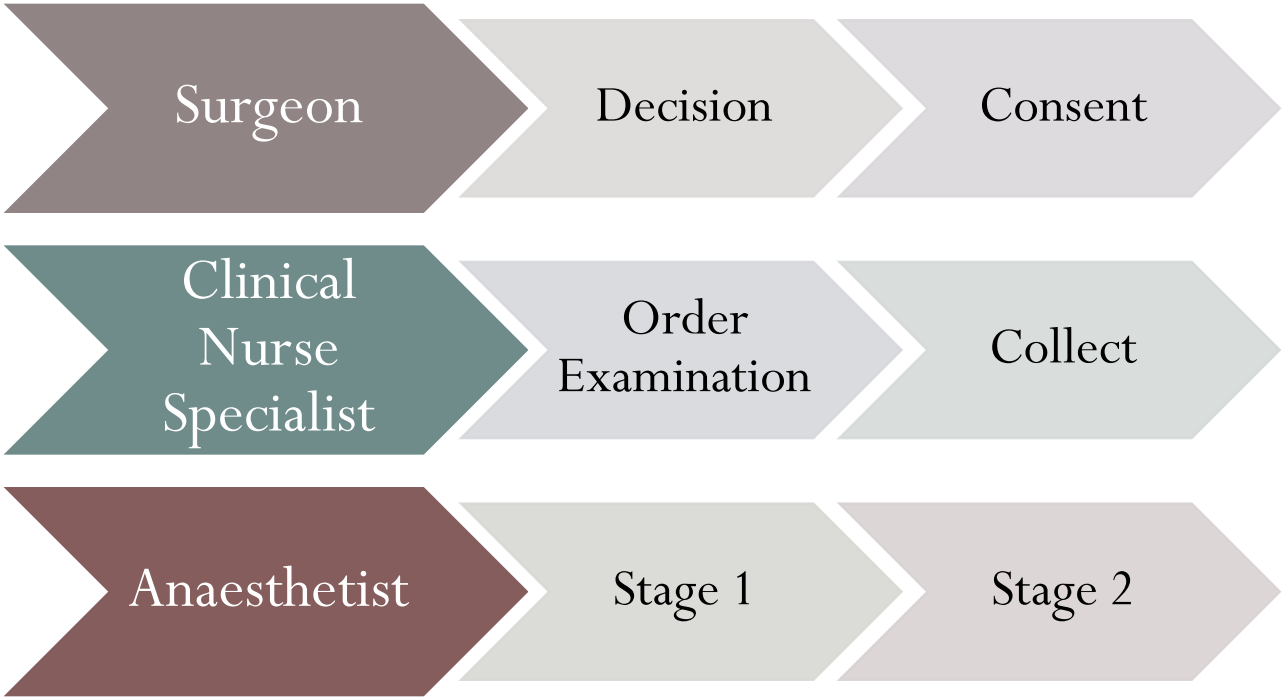
Multidisciplinary Endovascular Team (MET)

UCLH.MET

EVAR PATIENT PATHWAY

1. Receipt of CT on disc. Initial review to determine adequacy of study. Repeat if not. (CNS)
2. Filemaker Pro database. Create individual patient file on vascular shared drive (CNS)
3. CT onto PACS and TeraRecon (CNS)
4. MDT (1) Technical feasibility and options. Grade complexity **(PROTOCOL 1)** (Krassi)
5. Preliminary procedure and graft planning.
6. Referral letter on CDR. Confirm funding authorisation.
7. Specialist nurse telephone interview. Complete VS & VAS 'Safe for Intervention' checklist. Order CPX and other investigations.
8. Clinic 1: Confirm VS & VAS checklist (Specialist nurse). Overview of clinical status and first discussion of options. Conditional consent. No commitment. Fitness for surgery proforma (specialist nurse) **PROTOCOL 2** (Vasc Soc). If Green/ amber FAST TRACK - GO TO ORDER GRAFT (12 plus 9 and 9). If red follow protocol.
9. Initial assessment
   RED: Complexity not relevant. Not recommended for immediate intervention. Specialist review required.
   AMBER: Low complexity – proceed
   AMBER : High complexity – Not recommended for immediate intervention. Specialist review required.
   GREEN: Complexity not relevant – proceed.
10. Preoperative investigations. **PROTOCOL 3 (Dee)** (list of investigations required simple and complex)
11. Anaesthetic pre-assessment based upon technical complexity, physiological score, preoperative test results. **PROTOCOL 4 (Savvas)**
12. MDT (2) Decision re advice based upon technical option review and anaesthetic risk assessment.
13. Order endograft.
14. Clinic 2 (Optional): The advice and decision of patient. Consent by consultant
15. Pre-assessment? (MRSA, Latex etc)
16. Complex, RED and AMBER cases admit day before. Pre-operative preparation. **PROTOCOL 5(Dom)**
17. Non-complex GREN and AMBER patients to be admitted on day of operation. **LEAFLET (PROTOCOL 6).** (SpR)
18. Consent reconfirmed.
19. Operating team responsible for whole of case and immediate aftercare. **PROTOCOL 7 (PLH)**
20. Hand-over and 1st 24 hours in ITU. **PROTOCOL 8 (Obi and Patrick)**
21. Spinal cord protection. **PROTOCOL 9 (Patrick)**
22. Post-op imaging and surveillance. **PROTOCOL 10 (Obi and Dom)**

Complex EVAR



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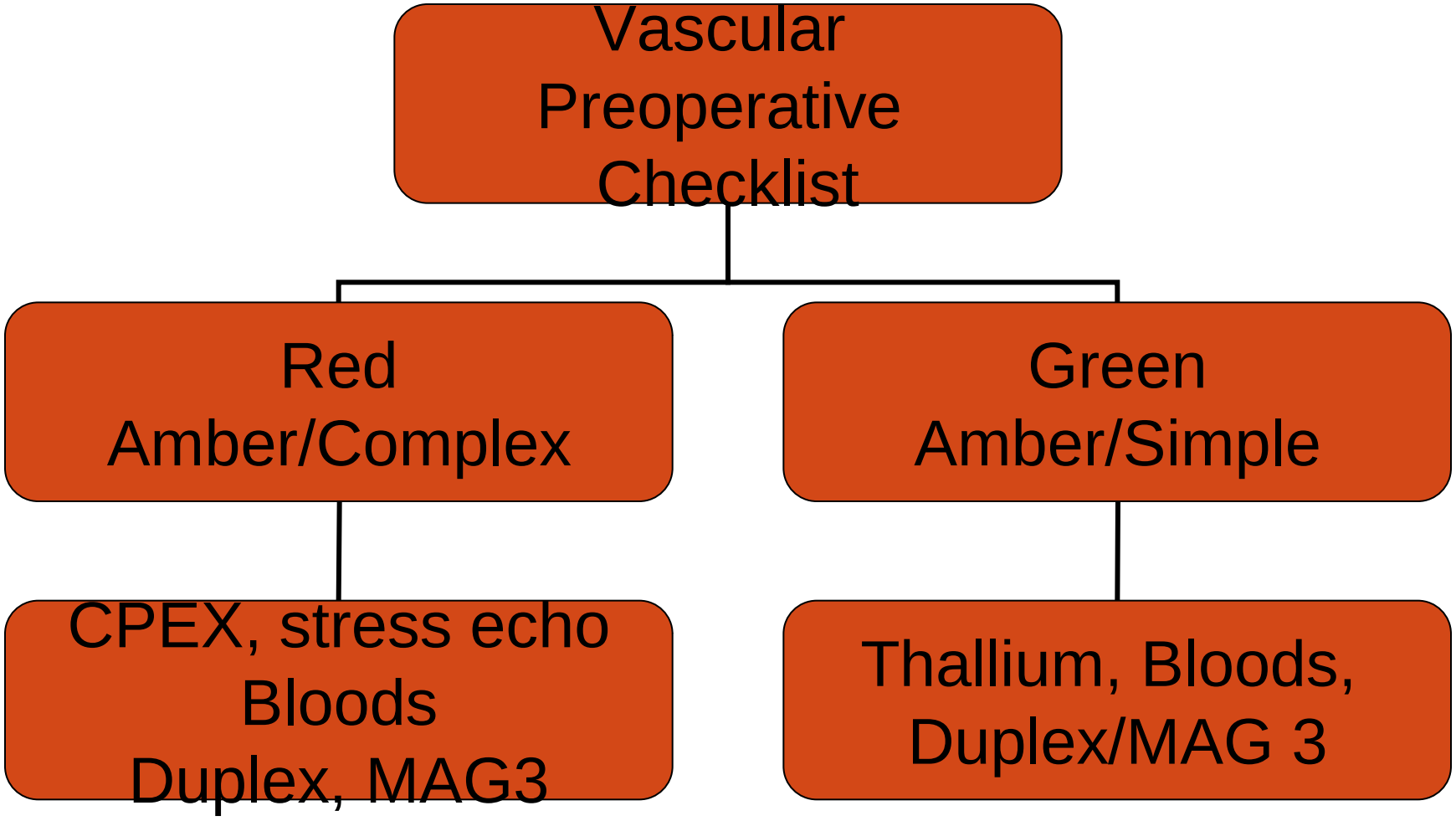
Name:_____ Grade:_____ Date:_____

Ivancec classification 2010

Protocol on the degree of complexity of EVARs:

Complexity, being dependant on multiple factors, cannot be limited only to anatomical locations such as only infrarenal stentgrafting, or only thoracic stentgrafting distal to the subclavian artery. For this reason complexity is divided into three levels.

1. Green - a straight forward procedure to be performed within 1-2 hours
2. Amber – a more complex procedure which may require 2-4 hours
3. Red - a procedure that may require 5-6 hours, or longer


Vascular Preoperative Checklist
Red Amber/Complex
Green Amber/Simple
CPEX, stress echo Bloods Duplex, MAG3
Thallium, Bloods, Duplex/MAG 3

Complex EVAR

Visit 1

- MET consultant
- Bloods/ CPEX

Visit 2

- CPEX, stress echo, MAG3 scan
- Anaesthetic consultant preassessment

Visit 3

- All results available
- X match available
- Operation: Start Fluids, NAC