The Worcestershire Acute Hospital NHS Trust Adult Surgical Admission Criteria for Kidderminster Treatment Centre and Birch Day Unit, Alexandra Hospital

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Key Amendments

Date	Amendment	Approved by
April 2021	New document approved	Anaesthetic Theatres and Sterile Services Directorate Meeting
December 2023	Extended document by 6 months whilst under review. Updated owner details.	Dr Harsha Mistry
12th November 2024	Document extended for 12 months whilst awaiting National Guidelines to inform if changes are required	Dr Harsha Mistry

Introduction

This policy outlines the adult surgical admission criteria for Kidderminster Treatment Centre (KTC) and the Birch Unit at the Alexandra Hospital. The surgical admission criteria are used to determine patients that are suitable for elective, scheduled and expedited surgery at KTC and Birch, to ensure safe and effective care.

In recent years a wider range of patients have been considered suitable for day case surgery. The complexity of operations suitable for day case surgery has also increased. AAGBI guidance recommends that 'fitness for a procedure should relate to the patients' health as determined at pre-operative preparation and not limited by arbitrary limits such as ASA status, age or body mass index'. Patient suitability for day case surgery involves a complex interplay of surgical, anaesthetic, patient health and social factors. If a patient is not expected to meet same day discharge requirements then arrangements for a postoperative overnight stay should be made.

The theatre suite at Kidderminster Treatment Centre has an attached surgical ward with limited medical cover provided by a Resident Medical Officer.. The following criteria are intended as a guide. Patients will be risk assessed individually, and there may be occasions when patients who do not fully meet the criteria are appropriate to undergo procedures at KTC. In the event that a patient does not fit these criteria but is deemed suitable for surgery at KTC it is important that they are discussed with a pre-op anaesthetist and, ideally, the anaesthetist and surgeon who will be covering the list. The theatre team and KTC Ward 1 should also receive forewarning that a complex patient is planned (i.e. by emailing the area manager/band 7). This gives assurance that the patient is receiving appropriate care that has been discussed and agreed by consultants who will be caring for that patient and that their best interests are being considered.

The Birch Unit at the Alexandra Hospital is contained within the main hospital. Birch can admit patients for surgery and receive them back postoperatively. It is not opened overnight so it is important that patients are suitable for early ambulation and same day discharge to minimise unanticipated hospital admissions..

Scope of the policy

The policy documents the surgical admission criteria for KTC and Birch Day Unit and does not document the perioperative clinical management of the patient presenting for surgery. Any clinical concerns relating to the patient's fitness to proceed to surgery must be escalated to the Anaesthetist and/or Consultant Surgeon, as appropriate.

Definitions

The Royal College of Anaesthetists (2014) defines a remote site as any location at which the anaesthetist is required to provide general/regional anaesthesia, or sedation away from the main theatre suite and/or anaesthetic department and in which it cannot be guaranteed that the help of another anaesthetist will be available. This may either be within or away from the base hospital. KTC is a remote site and therefore surgical admission criteria are required.

Functional Status

The preoperative assessment should be a holistic overview of a patient's health status. This includes assessing functional status or exercise tolerance which is a major determinant of perioperative risk. Patients should have a detailed history taken about their functional status and this should be documented. Details on limiting symptoms should be recorded. The Metabollic Equivalent (MET) classification is used as an assessment of functional status. Patients who are able to achieve activities consistent with 4 METS are generally suitable to proceed with day case type surgery. 4 METs is the energy requirement associated with light housework e.g. hoovering, independent living and climbing a flight of stairs. If there is uncertainty about the patients functional status tools such as the Duke Activity Status questionnaire can be useful. Further guidance is given in the table below:

Estimated energy	Activity
1 MET	Self-care
	Eating dressing or using the toilet
	Walking around indoors
	Walking one to two blocks at 2-3 mph
4 METS	Light housework
	Climbing a flight of stairs
	Walking on level ground at 4mph
	Running a short distance
	Heavy housework
	Moderate recreational activities (e.g. golf, dancing, doubles tennis, throwing a baseball or football)
Greater than 10 METS	Strenuous sports (swimming, football, singles tennis)

Operation severity (minor intermediate major)

As an approximate guide the following table gives guidance on what constitutes a minor, intermediate or major operation.

Surgery grade	**Examples**
Minor	• Excising skin lesion • Wide local excision • Cystoscopy • Hysteroscopy • Foot surgery • Nasal septoplasty • Knee arthroscopy • Vasectomy • Dupuytrens release
Intermediate	• Primary repair of inguinal hernia (open/laparoscopic) • Mastectomy • Tonsillectomy or adenotonsillectomy • Shoulder arthroscopy • Laparoscopic cholecystectomy • Laparoscopic Fundoplication • Parathyroidectomy • Mesh Rectopexy • Anterior/Posterior Vaginal Repair • Functional Endoscopic Sinus Surgery • Transurethral Resection of Prostate
Major or complex	• Total abdominal/laparoscopic hysterectomy • Laparoscopic gastric bypass / Sleeve gastrectomy • Radical prostatectomy • Cystectomy • Thyroidectomy • Total joint replacement • Colonic resection • Radical neck dissection • Maxillofacial resection with flap • Abdominal aortic surgery (open/endovascular) • Reversal of stoma

List of operations associated with minimal or zero IV postoperative morphine requirement

Excising skin lesion Wide local excision Cystoscopy Hysteroscopy Minor foot surgery Nasal septoplasty

Knee arthroscopy Primary repair of unilateral inguinal hernia? Vasectomy Dupuytrens release Anterior / Posterior vaginal repair? Functional endoscopic sinus surgery?

Abbreviations

IHD Ischaemic Heart Disease
OSA Obstructive Sleep Apnoea
DM Diabetes Mellitus
POA Pre-operative Assessment

Responsibility and duties

The Department of Anaesthesia will ensure the effective implementation of the surgical admission criteria throughout the Worcestershire Royal Hospitals NHS Trust (WAHT).
WAHT employees have a responsibility to adhere to the admission criteria documented in this policy

Surgical admission criteria for Birch Unit, Alexandra Hospital

The following admission criteria will be used to determine patients that are suitable for elective and expedited day case surgery at the Alexandra Hospital, Birch Unit):

	Suitable for Birch	**Unsuitable for Birch**	**Rationale**
BMI	BMI below 45 having minor/intermediate surgery BMI below 50 if patient: • Is having minor surgery with minimal or zero postoperative IV morphine requirement • Has no significant co-morbidity (i.e. diabetic on insulin / angina / COPD) • Has a good functional status (i.e. can achieve 4 METS or above) • Has a STOP BANG of 5 or below	BMI over 50 BMI 45 to 50 • Having surgery associated with postoperative morphine requirement • Significant co-morbidity present (i.e. diabetic on insulin / angina / COPD) • Poor functional status • Have a STOP BANG 6 or above • SpO2 on air are consistently 93% or below • Concerns about high risk of pressures areas developing and specialist bariatric equipment not available.	Fitness for day case surgery should not be limited by assessment of BMI in isolation. Therefore if a patient is otherwise fit and having minor surgery they are suitable for day case surgery at Birch. The final decision about suitability for Birch rests with clinical staff on the day of surgery. Body weight distribution must be considered and if at risk of pressure areas then patient may need bariatric trolley or ward bed to be placed in Birch. There may be increased risks associated with longer laparoscopic operations and these should be timed for early on a list. Any immediate postoperative complications have usually resolved by the time a day case patient would be discharged. Consultant surgeon and anaesthetists

			should be present for all cases with BMI over 40.
ASA Grade	ASA 1 and ASA 2 ASA 3 patient with good functional status	ASA 4 patients ASA 3 patients with significant functional limitations which would limit suitability for day case surgery	Fitness for a procedure should relate to a patients functional status and not be limited by ASA status alone. However it is unlikely that patients with ASA 4 disease (systemic disease that is a constant threat to life) would be appropriate for surgery within a day case setting.
Alcohol	Alcohol intake of less than 70 units per week without any LFT derangement. Alcohol intake of between 70-100 units may occasionally be acceptable providing LFTs are normal and patient does not have signs of dependence.	Alcohol intake above 70 units with deranged ALT/clotting, any patient with cirrhosis, any patient who cannot stop drinking without anxiety and any patient who has a history of alcoholic related fits and is currently drinking.	Patients drinking over 70 units are at risk of perioperative complications or alcohol withdrawal which means they are not always suitable for day case surgery.
Age	Patient aged 19 or over Patients aged 16-18 who have chosen to receive care on an adult pathway within an adult hospital.	Patient aged 15 or under Patients aged 16-18 who have chosen to receive care on a paediatric pathway.	This guideline recognises there is a need for flexibility to allow 16-18 years old to choose whether to be treated in paediatric or adult services. Where they choose to be treated on an adult pathway this should be clearly documented. The Birch admission area, anaesthetist and theatre team should be informed prior to the day of surgery.

Cardiovascular			
Hypertension	Blood pressure controlled in community (i.e. below 160/100 on GP or home reading within 12 months) BP in POA clinic is below 180 / 110	If BP in community is over 160/100 with evidence of end organ damage (i.e.renal impairment / LVH by voltage criteria) Pre-op BP is above 180/110 at POA clinic These patients will require careful consideration on a risk benefit basis. If surgery is urgent and minor and there is evidence of 'white coat hypertension' then it may be appropriate to continue.	There is no clear evidence that patients with BP below 180/110 without end organ damage have increased perioperative cardiovascular risk. Assessment of a patient's cardiovascular risk should consider other risk factors. In some cases, i.e. a patient without other co-morbidity having a minor but urgent procedure, it will be appropriate to continue with careful planning
Valvular disease	Good LV function associated with • Mild to moderate Aortic Stenosis • Mild Mitral Stenosis • Mild to moderate mitral regurgitation If unsure please discuss with Consultant Anaesthetist	Moderate to severe aortic stenosis (i.e. valve area below 1.2cm^2 or mean gradient above 25mmHg) Moderate to severe mitral stenosis (i.e. valve area below 1.5cm^2) Severe mitral regurgitation (i.e. associated with heart failure symptoms, fast AF or pulmonary hypertension)	Asymptomatic patients often tolerate non cardiac surgery well. However the risk of complications increases with valve disease severity. Patients with moderate to severe lesions should be managed in a centre with 24 hour access to cardiology on site cover.
Pulmonary Hypertension	No symptoms of pulmonary arterial hypertension with exercise or at rest	Clinical or echocardiographic signs of right heart failure and any decline in functional status e.g. 6MWD <440m or VO^{2}max <15ml/min/kg	Surgery is expected to have increased risks in patients with pulmonary hypertension
Pacemaker	• Simple pacemaker • Cardiac Resynchronisation Therapy (having minor surgery)	• Cardiac Resynchronisation Therapy (having moderate or major surgery)	Pacemakers can be admitted to Birch as there is currently cardiac devices support available

	• Implanted defibrillator (having minor surgery)	• Implanted defibrillator having moderate or major surgery	from the cardiology department. If unsure please discuss with anaesthetist and cardiopulmonary dept (ext 44311 at Redditch) If there is a resynchronisation or defibrillation device these patients should be admitted for minor surgery only. For moderate-major surgery they will usually require an overnight stay for observation.
MI	>6 months ago with minimal angina and good functional status i.e. CCS 1 or 2	MI within 6 months On-going restrictive angina since MI (CCS 3-4) MI with occluded vessel being medically managed	Surgery can be a risk factor for myocardial ischaemia and recurrent MI. In the presence of a reduced functional status due to angina an overnight stay is prudent for observation.
Coronary angioplasty/stenting/CABG	Minimal symptoms of angina since procedure and good exercise tolerance >4 METS		Non urgent surgery best postponed until antiplatelet therapy can be safely stopped following stenting
Angina	Angina only during strenuous prolonged activity, such as digging the garden discuss with Consultant Anaesthetist. It may be appropriate to do a patient with angina grade 3 as day case through Birch if agreed with the pre-operative anaesthetist. This depends on the	Any other Angina (CCS 3-4*) Angina at rest Angina associated with poor functional status	

	procedure being performed and other patient factors.		
Heart failure	No symptoms or limitation of ordinary activity It may be appropriate to do a patient with NYHA grade 3 as day case through Birch if agreed with the pre-operative anaesthetist. This depends on the procedure being performed and other patient factors.	Symptomatic heart failure (NYHA class 3-4*) usually requires a discussion with the pre-op anaesthestist.	Patients with heart failure having urgent minor surgery may be appropriate for day case surgery.
Cardiomyopathy	Patients with a cardiomyopathy who have a good exercise tolerance, no obstructive disease and are stable are usually suitable for day case surgery. They can be discussed with the consultant anaesthetist if unsure.	Cardiomyopathy may be asymptomatic but this is not predictive of risk. These patients are at increased risk and may be affected by arrhythmias.	If surgery is minor and patient reports no decline in functional status i.e. 6MWT >440m and VO_2max <15ml/min/kg discuss with consultant anaesthetist
Dysrhythmia	1st degree heart block (rate >50bpm) Rate controlled atrial fibrillation <100bpm Asymptomatic bradycardias Asymptomatic bi-fasicular or tri-fasiculat heart blocks Ventricular bigeminy/trigeminy	Any other dysrhythmia	Poorly controlled AF can become faster postoperatively preventing day case surgery. Asymptomatic tri-fasicular heart block should be discussed preoperatively with cardiology with a view to pacing (either pre or post operatively)
Peripheral vascular disease	Good exercise tolerance >4 METS	Poor exercise tolerance and restricted functional ability	
Aortic aneurysm	AAA under surveillance only AAA stable	Awaiting AAA repair	An AAA of 5.5 cms has a rupture rate of only 2-3% per annum although

		Intra-abdominal surgery with AAA of over 5cm	there is anecdotal evidence that the risk of rupture increases after major surgery.
Respiratory			
Asthma	Stable well controlled asthma Good functional ability	Chest infection within 6 weeks (i.e. from date of antibiotic course completion) should be discussed with preoperative anaesthetist. ITU admission due to asthma attack within last 12months Oral steroid course completed for asthma within 6 weeks Normal activities extremely limited by asthma	Patients with stable and well controlled asthma are often better managed as day case due to minimal disruption to their daily routine. If there is a history of brittle asthma with exacerbations from anaesthesia these patients may benefit from a night of postoperative observation.
COPD	Stable well controlled COPD Good functional status	SOB rest or on minimal exertion Oxygen therapy at home Cor pulmonale Oral steroids within 6 weeks	Spirometry does not necessarily correlate with postoperative outcome[4], but may be helpful for those patients who have no previous spirometry done or who are on suboptimal/no treatment

Obstructive sleep apnoea	Procedure under Local or regional Anaesthetic Minor / moderate procedure on patient established on CPAP for longer than 6 weeks Procedure should be on morning or early afternoon list	Procedure is moderate/major with need for significant IV morphine or postoperative opioids Poor compliance with CPAP (AHI over 30 at latest review) Resting SpO_2 on air are under 94% Presence of non-optimised comorbidities (i.e. hypertension, arrhythmias, heart failure) Operation which might prevent the use of CPAP mask post op e.g. nasal septoplasty, necessitates overnight stay	Operating in the morning enables clearance of sedative drugs medical led discharge. SAMBA guidance from 2012[5] recommends that patients with known OSA can be considered for day case surgery if they have and are able to use CPAP after surgery and have any co-morbidities optimised. Low saturations may indicate higher risk of nocturnal hypoxia.
Chronic Respiratory Conditions	Well controlled, stable Cystic Fibrosis Pulmonary fibrosis with stable symptoms and reasonable functional ability	Cystic Fibrosis with moderate/severe disease or multisystem involvement. Symptomatic bronchiectasis with chest infection within 6 weeks of surgery Pulmonary fibrosis causing extreme limitation of everyday activities	Day surgery may be feasible in patients with stable disease and good baseline functional status. These patients must be discussed with the POA consultant and multidisciplinary team. Patients with advanced Cystic Fibrosis are usually better managed in a regional centre
<u>Neurological</u>			
Epilepsy	Grand Mal Seizure more than 6 weeks before planned surgery Partial seizures	Grand mal Seizure within 6 weeks of planned surgery History of status epilepticus	Patients with epilepsy are at increased risk for postoperative complications (i.e. seizure) and

	Nocturnal seizures		therefore it is important to ensure that seizure control is optimised before surgery
TIA/CVA	More than 6 months ago	TIA /CVA within the last 6/12	
Parkinson's Disease	Good functional status	Poor functional status Requires significant assistance with activities of daily living Impaired swallow Cognitive impairment	Impaired swallow may put Parkinson's patients at risk of postoperative respiratory complications. Cognitive impairment predisposes to postoperative delirium.
Multiple Sclerosis	Good functional status Minimal weakness	Patients with severe restrictions due to MS	Patients with MS who have weakness may have an unpredictable response to neuromuscular blocking agents.
<u>Metabolic</u>			
Diabetes	HbA1c under 80 in three months before surgery IDDM minor or intermediate procedure only Only likely to miss one meal	Likely to miss more than one meal Demonstrably poor blood sugar control on day of surgery, i.e. blood sugar under 4 or over 15mmol/L (these patients are likely to require CVRII which precludes day case surgery)	Blood sugars should ideally be maintained at between 6-12 mmol/L on the day of surgery meaning that demonstration of good control (as per HbA1C) is important. Occasionally minor urgent procedures may be undertaken in patients with higher HbA1C but this is a decision to be taken on a case by case basis.
Liver disease		Abnormal coagulation Known cirrhosis	

Renal disease	Stable renal failure eGFR 30mls/minute or above Patients on dialysis having minor/intermediate surgery with predicted same day discharge. They need a clear plan for pre and post procedure dialysis.	CKD Stage 4-5 (i.e. eGFR below 30) CKD associated with hyperkalaemia	Patients who are on dialysis may be suitable for day surgery if they are compliant with their dialysis programme and have a clear plan for pre and post procedure dialysis.
Thyroid disease	Abnormal TSH and normal T4 Asymptomatic	Discuss other abnormalities with Consultant Anaesthetist	
Musculoskeletal			
RA	Pain free movement of cervical spine (extension & flexion) Good functional ability	Severely restricted functional ability	The presence of atlanto-axial subluxation may mandate an awake intubation to reduce risk of cervical myelopathy.
Haematological			
Anaemia	Asymptomatic anaemia in patient having minor /intermediate surgery	Hb <80g/L If surgery is routine and non-urgent (i.e. non cancer case) patient should be referred to the GP for investigation. Please discuss with the pre-operative anaesthetist.	Anaemia is associated with adverse outcomes after surgery. In addition anaemia may be a marker for underlying disease, therefore anaemic patients should be referred on for further investigation. Where the surgery is related to the cause of the anaemia it is often appropriate to proceed as a method of 'treating' the anaemia.

New York Heart Failure Index*	***Canadian Cardiovascular Society grading of angina****
Class 1 Cardiac Disease with no symptoms and no limitation in ordinary physical activity i.e. no SOB on climbing stairs	**Class 1** - Angina only during strenuous or prolonged activity.
Class 2 Mild symptoms (mild SOB and/or angina) and slight limitation during ordinary activity	**Class 2** – Slight limitation with angina only during vigorous physical activity.
Class 3 Marked limitation in activity due to symptoms, even during less than ordinary activity (i.e. walking short distances <50m). Comfortable only at rest	**Class 3** Symptoms with everyday living activities, i.e. moderate limitation.
Class 4 Severe limitations. Experiences symptoms even while at rest. Mostly bedbound patients.	**Class 4** Inability to perform any activity without angina or angina at rest i.e. severe limitation

1 MET	Breathing?	4 METs	Climb 2 flights of stairs?
	Eat, dress and use toilet?		Walk up a hill?
	Walk around the house?		Run short distance?
	Walk on the flat slowly?		Heavy work around the house?
4 METs	Light housework?		Golf, bowling, doubles tennis?
		>10 METs	Swimming, singles tennis, skiing?

Table 1. Modified from ACC/AHA 2007 Perioperative Guideline

Surgical admission criteria for Kidderminster Treatment Centre

The following surgical admission criteria will be used to determine patients that are suitable for elective and expedited surgery at the Kidderminster Treatment Centre (KTC):

	Suitable for KTC	**Unsuitable for KTC**	**Rationale**
BMI	All patients with BMI 40 if other KTC criteria are met BMI raised 40-45 • Having minor/intermediate surgery • Minimal co-morbidity with good functional status BMI raised 40-50 • Having minor surgery with minimal or zero IV morphine postoperative requirement • No significant co-morbidity (i.e. diabetic on insulin / angina / COPD) • Good functional status (i.e. can achieve 4 METS or above) • Have a STOP BANG of 5 or below	BMI over 50 having any surgery BMI over 45 • Having intermediate or major operation (see table above) with likely need for IV morphine BMI over 40 • Significant co-morbidity present (i.e. diabetic on insulin / angina / COPD / OSA) • Poor functional status • Have a STOP BANG 6 or above • SpO2 on air are consistently 93% or below	Fitness for day case surgery should not be limited by assessment of BMI. Therefore if a patient is otherwise fit and having minor surgery they are suitable for day case surgery at KTC. There may be increased risks associated with longer laparoscopic operations. Any immediate postoperative complications have usually resolved by the time a day case patient would be discharged. Consultant anaesthetist and surgeon should be present for cases when BMI is over 40.
ASA Grade	• ASA 1 and ASA 2 • Select ASA 3 patients. ASA 3 are suitable for KTC if their co-morbidity is stable and optimised. Examples of ASA 3 cases suitable for KTC include: previous CABG/coronary stent, CVA/TIA >3 months ago, hazardous alcohol intake with minimal systemic effect. Patient should have good functional status and meet other criteria for day case surgery.	ASA 3 patients with significant functional limitations or who are not optimised but require urgency surgery. ASA 4 Paediatric ASA 3 patients	In 2014 the ASA classification was updated. Certain patients previously considered ASA 2 are now ASA 3. Fitness for day case should not be limited by ASA classification alone. Certain ASA 3 patients will be safe to have day case operations at KTC and are likely to benefit from day case surgery.
Alcohol	Alcohol intake of less than 70 units per week without any LFT derangement. Patient should be able to reduce their alcohol intake without signs of acute withdrawal. They must be	Alcohol intake of up to 70 units with deranged ALT/clotting or pancytopaenia (i.e. low platelets or low Hb). Any patient with cirrhosis and varices or undergoing abdominal	Patients drinking less than 70 units are very unlikely to have a withdrawal reaction Patients drinking over 70 units are more likely to have perioperative complications such as cardiovascular

	advised of the recommended safe limit (i.e. 14 units per week),	surgery or deranged LFT or ongoing hazardous alcohol use. Any patient drinking more than 70 units per week Any patient who cannot stop drinking without anxiety/withdrawal Any patient who has a history of alcoholic related fits and is currently drinking.	complications and cognitive dysfunction. In all cases of hazardous alcohol intake the patient should be counselled to reduce their alcohol intake (ideally to 14u/week) for several weeks before surgery.
From birth to 23 months	May not be admitted to KTC		
From the child's 2nd birthday (24 months) up to and including 15 years	Must be cared for on a dedicated paediatric session	ASA 3 paediatric patients Severe sleep apnoea	Paediatric ENT patients who should be considered for referral to a tertiary centre include: Age under 2 years Weight less than 12 kgs Other high risk features Extremes of BMI **Paediatric patients who weigh between 12-15 kgs should be on a list where there is availability of another anaesthetist who can be present at induction**
From the 16th birthday to and including 17 years		Must be offered the choice of care on a paediatric session or on an adult list	
From the 18th birthday	Adult environment appropriate		
Cardiovascular			
Hypertension	BP well controlled in community (i.e. below 160/100 on GP or home reading within 12 months) BP in POA Clinic is below 180/110	BP over 160/100 in community with evidence of end organ damage (i.e. renal impairment / LVH by voltage criteria) BP over 180/110 in POA clinic	There is no clear evidence that patients with BP below 180/110 without end organ damage have increased perioperative cardiovascular risk. Assessment of a patient's cardiovascular risk should consider other risk factors. In some cases, i.e. a patient without other co-morbidity

			having a minor but urgent procedure, it will be appropriate to continue with careful planning.
Valvular disease	Good LV function associated with • Mild Aortic Stenosis • Mild Mitral Stenosis • Mild to moderate mitral regurgitation If unsure please discuss with Consultant Anaesthetist	Moderate to severe aortic stenosis (i.e. valve area below 1.2cm^2 or mean gradient above 25mmHg) Moderate to severe mitral stenosis (i.e. valve area below 1.5cm^2) Severe mitral regurgitation (i.e. associated with heart failure symptoms, fast AF or pulmonary hypertension)	Asymptomatic patients often tolerate non cardiac surgery well. However there is a scope for complications and the risk of complications increases with valve disease severity. Moderate to severe lesions mandate surgery in a centre with access to cardiology and HDU.
Pacemaker		Implanted defibrillator Cardiac Resynchronisation Therapy Pacemaker (CRTP) Pacemaker	Patients with pacemakers are not generally suitable for KTC in case of device failure and no dedicated electrophysiology team at KTC. The presence of CRT is frequently associated with significant heart failure.
MI	>6 months and minimal angina with good functional status (i.e. CCS 1 or 2)	MI within 6 months On-going restrictive angina since MI (CCS 3-4) MI with occluded vessel being medically managed	
Angina	Angina only during strenuous prolonged activity, such as digging the garden (i.e. CCS 1 or 2) or angina with only slight limitation on day to day activity	Any other Angina (CCS 3-4*) Angina at rest (i.e. history of unstable angina) Angina associated with poor functional status	
Heart failure	No symptoms or limitation of ordinary activity (NYHA 1-2). Certain NYHA 3 patients (i.e. stable symptoms but with marked limitation due to breathlessness) may be suitable for minor procedures only if agreed by POA anaesthetist and team.	Symptomatic heart failure which is not optimised (NYHA class 3-4*).	Patients may have marked limitation due to heart failure, but if there condition is stable and they are under regular heart failure review then they are likely to be optimised. Minor op day case surgery at KTC is likely to be beneficial (due to efficacy) and should be supported where possible.
Cardiomyopathy		Cardiomyopathy may be asymptomatic but this is not predictive of risk.	

		These patients are at increased risk and may be affected by arrhythmia. Because of limited cardiology and HDU support, surgery for patients with cardiomyopathy cannot be recommended at KTC.	
Transplant	Renal transplant > 12months ago with stable function	Cardiac or liver transplant patients Renal transplant within 12 months	
Coronary angioplasty / stenting / CABG	No symptoms of angina (i.e. CCS 1-2) since procedure and good exercise tolerance >4 mets	On-going limiting angina (i.e. CCS 3-4)	
Dysrhythmia	Ventricular bigeminy/trigeminy 1st degree heart block Rate controlled atrial fibrillation Asymptomatic bradycardia Left bundle branch block in patients with good functional status (i.e. able to climb more than 2 flights of stairs without pause) Right bundle branch block	Atrial Fibrillation or flutter with a rate >100bpm on no rate control. In certain cases (i.e. urgent, minor surgery) it will be suitable to proceed providing the patients is reviewed by their GP beforehand and appropriate rate control titrated to effect. Slow flutter/AF which is at risk of progression to heart block (i.e. rate below 50 bpm) 2nd or 3rd degree heart block due to risks of progression to severe bradycardia	The significance of left bundle branch block in younger patients with no cardiac symptoms is marginal, especially when surgery is minor. If there is a cardiac history then a preoperative echo may be helpful in excluding structural heart disease. All patients with bundle branch block should be asked about symptoms of heart block (faints, dizziness) to detect any associated conduction defects.
Peripheral vascular disease	Good exercise tolerance >4 METS	Poor exercise tolerance and restricted functional ability	
Aortic Aneurysm	Surveillance only	Awaiting AAA repair Intra-abdominal surgery with AAA of over 5cm	An AAA of 5.5 cms has a rupture rate of only 2-3% per annum although there is anecdotal evidence that the risk of rupture increases after major surgery.
Respiratory			

Asthma	Well controlled asthma PEFR> 70% predicted Minimal limitation of normal everyday activities Using reliever inhaler on average less than 3 days per week	Chest infection within 6 weeks (i.e. from date of antibiotic course completion) Hospital admission due to asthma attack within last 12months Oral steroid course completed for asthma within 6 weeks Formal diagnosis of 'brittle asthma' Normal everyday activities extremely limited by asthma	Patients with stable and well controlled asthma are often better managed as day case due to minimal disruption to their daily routine. If asthma is not well controlled, but surgery is urgent then a perioperative course of oral steroids may be beneficial to reduce risks of bronchospasm. Discuss with POA consultant.
COPD	Stable and well controlled COPD Exercise ability equal to or above 4 METS Patients with reduced exercise ability (i.e. below 4 METS) may be suitable for minor operations but not intermediate, laparoscopic or intra-abdominal surgeries.	SOB at rest Breathless at <400m Oxygen therapy at home Oral steroids due to COPD exacerbation within 6 weeks	Spirometry does not necessarily correlate with postoperative outcome[4], but may be helpful for those patients who have no previous spirometry done or who are on suboptimal/no treatment.
Obstructive sleep apnoea	Procedure under Local Anaesthetic Minor procedure on patient established on CPAP, ideally for longer than 6 weeks Some moderate operations may be appropriate with agreement of POA consultant. Procedure must be on morning list to enable time for recovery before sleep. BMI should be under 40 Co-morbidities are optimised	Overnight stay anticipated Procedure is moderate/major with need for postoperative IV Morphine Poor compliance with CPAP (i.e. AHI over 30 at latest review) SpO2 on air are under 94% Presence of non-optimised co-morbidities (i.e. hypertension, arrhythmias, heart failure)	Operating in the morning enables clearance of sedative drugs medical led discharge. SAMBA guidance from 2012[5] recommends that patients with known OSA can be considered for day case surgery if they have and are able to use CPAP after surgery and have any co-morbidities optimised.
Chronic respiratory conditions	Well controlled, stable Cystic Fibrosis	Cystic Fibrosis with moderate/severe disease or multisystem involvement. Symptomatic bronchiectasis with chest infection within 6 weeks of surgery	Surgery at KTC may be feasible in patients with stable disease and good baseline functional status. These patients must be discussed with the POA consultant and multi-disciplinary team. Patients with advanced Cystic

		Pulmonary fibrosis causing extreme limitation of everyday activities	Fibrosis are usually better managed in a regional centre.
Previous COVID-19 infection	From infection control point of view, most people will not be contagious 14 days after ctracting COVID infection (ceratin groups, i.e. immunosuppressed, may need longer, i.e. 21 days). Ideally elective surgery should proceed 6-7 weeks after COVID infection 7 weeks for patient who did not require hospitalization Resolution of respiratory symptoms	Within 14 days of COVID-19 infection. Patients with significant ongoing symptoms will require an individualised pre op risk assessment: special attention should be given to the cardiopulmonary system.	Current guidance indicates that 7 weeks is needed to recover mortality rates back to normal after COVID-19. Ideally therefore elective patients should be scheduled for after this time. If surgery is required within this time frame the surgical team needs to have a risk Vs benefit discussion with their patient.
Neurological			
Epilepsy	Grand Mal Seizure more than 3 months before planned surgery Partial seizures Nocturnal seizures	Grand mal Seizure within 3 months of planned surgery Non epileptic seizure or history of pseudo seizure History of status epilepticus	Patients with epilepsy are at increased risk for postoperative complications (i.e. seizure) and therefore it is important to ensure that seizure control is optimised before surgery at KTC.
TIA/CVA	More than 6 months ago	TIA /CVA within the last 6/12	
Parkinson's Disease	Good functional status May have cognitive impairment if stable and able to perform activities of daily living	Poor functional status Requires assistance with activities of daily living Impaired swallow (i.e. causing recurrent aspiration or requiring PEG) Severe Cognitive impairment	Impaired swallow may put Parkinson's patients at risk of postoperative respiratory complications. Cognitive impairment predisposes to postoperative delirium.
Multiple Sclerosis	Good functional status Minimal weakness	Weakness limiting patients activities of daily living	Patients with MS who have weakness may have an unpredictable response to neuromuscular blocking agents.
Metabolic			
Diabetes	Ideally HbA1c under 70 in three months before surgery IDDM minor or intermediate procedure only Only likely to miss one meal HbA1C of 70-80 may be considered if long term HbA1C control is reasonable and	Likely to miss more than one meal Demonstrably poor blood sugar control on day of surgery, i.e. blood sugar under 4 or over 15mmol/L	Blood sugars should ideally be maintained at between 6-12 mmol/L on the day of surgery meaning that demonstration of good control (as per HbA1C) is important. Occasionally urgent procedures may be

	cardiovascular risk profile is low (i.e. no additional risk factors for ischaemic heart disease)		undertaken in patients with higher HbA1C but this is a decision to be taken on a case by case basis. A patients long term HbA1C control and other cardiovascular risk factors should be considered. Please let WARD ONE (ext 55230) know about the plan in case an insulin infusion is needed afterwards.
Liver disease	Stable Exacerbating factors are controlled (i.e. alcohol) Normal coagulation	Abnormal coagulation Abnormal LFTs Known liver cirrhosis with complications (i.e. oesophageal varices or deranged LFT)	
Renal disease	Stable renal failure eGFR 30mls/minute or above	CKD Stage 4-5 (i.e. eGFR below 30) CKD associated with hyperkalaemia	Patients who are on dialysis may benefit from surgery at KTC if they are compliant with their dialysis programme and have a clear plan for pre and post procedure dialysis.
Thyroid disease	Abnormal TSH and normal T4 Asymptomatic	Discuss other abnormalities with Consultant Anaesthetist	
Musculoskeletal			
RA	Pain free cervical spine movement (extension and flexion) Absence of upper limb neurological symptoms Good functional status	Cervical spine instability Pain on cervical spine movement (extension and flexion) Presence of upper limb neurological symptoms Atlanto-axial subluxation on lateral flexion/extension C-spine X ray	The presence of atlanto-axial subluxation may mandate an awake intubation to reduce risk of cervical myelopathy. Therefore these patients may be more suited to a list at WRH or the Alex.
Haematological			
Anaemia	Hb over 90 in cases with low risk of haemorrhage	Hb <90g/L Routinely refer to GP for optimisation pre-operatively	Anaemia is associated with adverse outcomes after surgery. In addition anaemia may be a marker for underlying disease, therefore anaemic patients should be referred on for further investigation. Where the surgery is related to the cause of the anaemia it is often

			appropriate to proceed as a method of 'treating' the anaemia.
Platelets	Platelets over 80 in patient with low risk of haemorrhage (i.e. non laparoscopic peripheral surgery) Platelets over 100 in patients with risk of haemorrhage (i.e. laparoscopic surgery).	Platelets less than 80 in patients in low risk of haemorrhage Platelets of less than 100 in patients at risk of haemorrhage (i.e. laparoscopic surgery)	The patient needs to be considered holistically, i.e. consider other co-morbidity and platelet function. Please consider checking coagulation in patients with low platelets.
Bleeding disorders		Known increased risk of uncontrolled bleeding	
Antibodies on group and screening sampling	Cases with potential for significant haemorrhage but no antibodies detected during G+S test Antibodies are present but surgery has minimal potential for significant haemorrhage (i.e. no routine Group and Save needed)	Surgery with potential for significant haemorrhage and presence of antibodies which means that O-ve blood cannot be used.	KTC does not have a blood bank meaning patients must be able to receive the O-ve blood kept there. They should also be able to receive blood issued from the blood bank at WRH. It is difficult to define 'minor' antibodies, therefore the recommendation is that the presence of any antibody mandates surgery (with risk of significant haemorrhage) at a centre with a blood bank.
Patients who decline blood products on religious or other grounds, i.e. Jehovah's Witnesses	Patients refusing blood products who are having surgery which does not have potential for significant haemorrhage	Patients refusing blood products who are having surgery with potential for significant haemorrhage (i.e. laparoscopic surgery) who would accept cell saver	The cell saver is present at WRH and the Alex Hospital. JW patients who would accept cell saver should be preferentially sent there as the use of cell saver could be lifesaving in the event of haemorrhage.
Airway			
Previous intubation grade	Grades 1 - 3	Grade 4 with Predicted need for fibre-optic intubation	
Airway symptoms		Dysphagia, voice changes, orthopnoea, stridor	
Airway pathology		Known large goitre	
Anaesthetic			

Previous unexpected anaesthetic reactions	Non life threatening reaactions, i.e. slow to rouse, nausea. Suxamethonium apnoea	Previous ***anaesthetic*** problems requiring HDU/ICU	
Malignant Hyperthermia	Family history of confirmed MH but patient has tested negative.	Known malignant hyperthermia case (Positive testing confirmed).	Patients with family history of malignant hyperthermia will usually have been reviewed by Leeds MH Unit. If there is uncertainty

New York Heart Failure Index	***Canadian Cardiovascular Society grading of angina***
Class 1 Cardiac Disease with no symptoms and no limitation in ordinary physical activity i.e. no SOB on climbing stairs	**Class 1** - Angina only during strenuous or prolonged activity.
Class 2 Mild symptoms (mild SOB and/or angina) and slight limitation during ordinary activity	**Class 2** – Slight limitation with angina only during vigorous physical activity.
Class 3 Marked limitation in activity due to symptoms, even during less than ordinary activity (i.e. walking short distances <50m). Comfortable only at rest	**Class 3** Symptoms with everyday living activities, i.e. moderate limitation.
Class 4 Severe limitations. Experiences symptoms even while at rest. Mostly bedbound patients.	**Class 4** Inability to perform any activity without angina or angina at rest i.e. severe limitation

References

1. Verma R, Alladi R, Jackson I, et al. Day case and short stay surgery: 2, Anaesthesia 2011; 66: pages 417-434
   This guideline can be viewed online via the following URL:
   http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2044.2011.06651.x/pdf

2. Raja MH et al. The Impact of High BMI on Outcomes after Day Case Laparoscopic Cholecystectomy: A United Kingdom University Hospital Experience. AMBULATORY SURGERY 23.4 DECEMBER 2017

3. Association of Anaesthetists of Great Britain and Ireland. The measurement of adult blood pressure and management of hypertension before elective surgery 2016. Anaesthesia 2016; 71: 326-337. This guideline can be viewed online via the following URL: http://onlinelibrary.wiley.com/doi/10.1111/anae.13348/full

4. Qaseem A et al. Risk assessment for and strategies to reduce perioperative pulmonary complications for patients undergoing noncardiothoracic surgery: a guideline from the American College of Physicians. Ann Intern Med 2006 Apr 18 144(8) 575-80

5. Society for Ambulatory Anesthesia Consensus Statement on Preoperative Selection of Adult Patients with Obstructive Sleep Apnea Scheduled for Ambulatory Surgery Anesth Analg. 2012 Nov;115(5):1060-8

6. NHS STANDARD CONTRACT FOR PAEDIATRIC SURGERY: SURGERY (AND SURGICAL PATHOLOGY, ANAESTHESIA & PAIN) Accessed at
   https://webcache.googleusercontent.com/search?q=cache:96N1VXJ4kLgJ:https://www.england.nhs.uk/wp-content/uploads/2013/06/e02-paed-surg-surgi-path-anaes.pdf+&cd=1&hl=en&ct=clnk&gl=uk

7. Bundle Branch Block in Non-cardiac surgery. Archives Internal Medicine 2000. 160 (8) 1149