# Assessment Guideline for Potential Renal Transplant Recipients

University Hospitals of Leicester NHS
NHS Trust

**RRCV CMG**
**Renal and Transplant Service**

## 1. Introduction

The assessment of a patient's suitability for a renal transplant can be complex and these guidelines have been developed to help clinicians investigate and refer patients appropriately.

This is a shared guideline agreed for use in the renal transplant units at UHL and also at Nottingham University Hospitals.

## 2. Scope

All patients being evaluated as potential kidney transplant receiopients will be assessed using the recommendations in this guideline. The evaluation is a joint process between nephrologists and transplant surgeons and will often include the opinion of other specialists. It should be emphasised that each patient must be assessed on an individual basis and difficult cases should be discussed at a dedicated multidisciplinary team meeting.

Each section of advice below deals with a specific problem but these are often interlinked.

Timely access to kidney transplant listing, ideally to enable pre-emptive transplantation, should remain a high priority of all concerned in the delivery of this service.

Patients should be actively involved in the discussions and decisions about transplant assessment and listing. This should include patients with advanced kidney disease where transplantation is clearly not a treatment option.

The guidelines should help support the delivery of a clear patient pathway and also enhance equity of access for transplant listing.

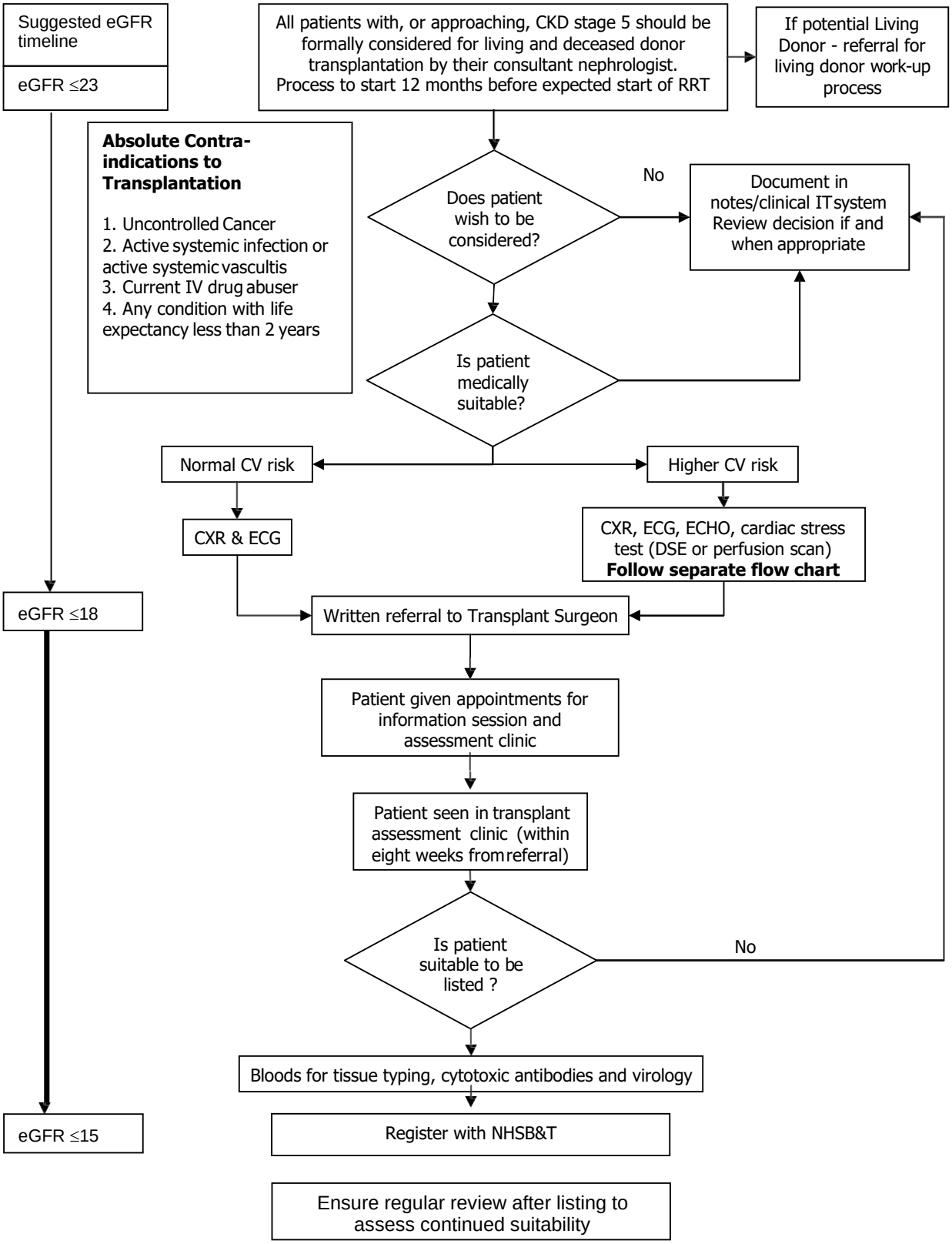
More detailed guidelines are available at

www.renal.org/guidelines
www.european-renal-best-practice.org
www.cari.org.au/Transplantation/transplantation_guidelines.html

## 3. Recommendations, Standards and Procedural Statements

## 3.1 Referral pathway for renal transplant assessment

DSE = dobutamine stress echocardiography



## 3.2 Contraindications to Renal Transplantation

Absolute contraindications

There are few absolute contraindications to renal transplantation. These include:

- Uncontrolled cancer
- Active systemic infections or active systemic vasculitis
- Current IV drug abuse
- Any condition with a life expectancy <2 years

Relative contraindications

Patients may have a number of co-morbidities that individually are not a contraindication to listing for transplantation, but when considered together may represent a clear contraindication to transplantation:

- Predicted patient survival of less than 5 years (despite renal transplantation).
- Malignant disease not amenable to curative treatment, or remission for greater than 5 years.
- HIV infection not treated with Highly Active Anti-Retroviral Therapy(HAART) or already progressed to AIDS.
- Cardiovascular disease – ischaemic heart disease, the prognosis of which cannot be improved by revascularisation and/or cardiac failure with a predicted risk of death greater than 50% at 5 years.
- Predicted risk of graft loss greater than 50% at 1 year.
- Patients unable or unlikely to adhere with immunosuppressant therapy requirements.
- Immunosuppression predicted to cause life-threatening complications.

## 3.3 Assessment

### Cardiovascular disease

All patients should have an ECG and CXR. If these are normal in low risk, asymptomatic patients then they can be referred directly to the transplant surgical team. If these are abnormal further investigations should be pursued as appropriate.

Asymptomatic patients deemed at higher risk should have a cardiac stress test and echocardiogram. Some factors associated with higher risk are a spectrum and clinicians may need to make a judgement about the level of risk and the need for these additional investigations.

Factors associated with higher risk

Increasing age
Diabetes
Abnormal ECG (other than LVH)
Coronary heart disease (angina, previous MI, CABG or angioplasty) or CCF
Peripheral vascular disease (claudication or arterial bypass surgery)
Ischaemic cerebrovascular disease
BMI >35

Patients with active cardiovascular disease or patients with a positive cardiac stress test should be referred to a cardiologist for an opinion about the need for coronary angiography.

If coronary angiography is proposed in pre-dialysis patients the timing of the procedure may be influenced by the level of residual renal function. Such a judgement needs to balance the risks of acute kidney injury with the potential benefit of timely transplant listing.

It should be noted that there is no current evidence supporting the use of coronary interventions where the sole indication is pre-operative optimisation prior to renal transplantation.

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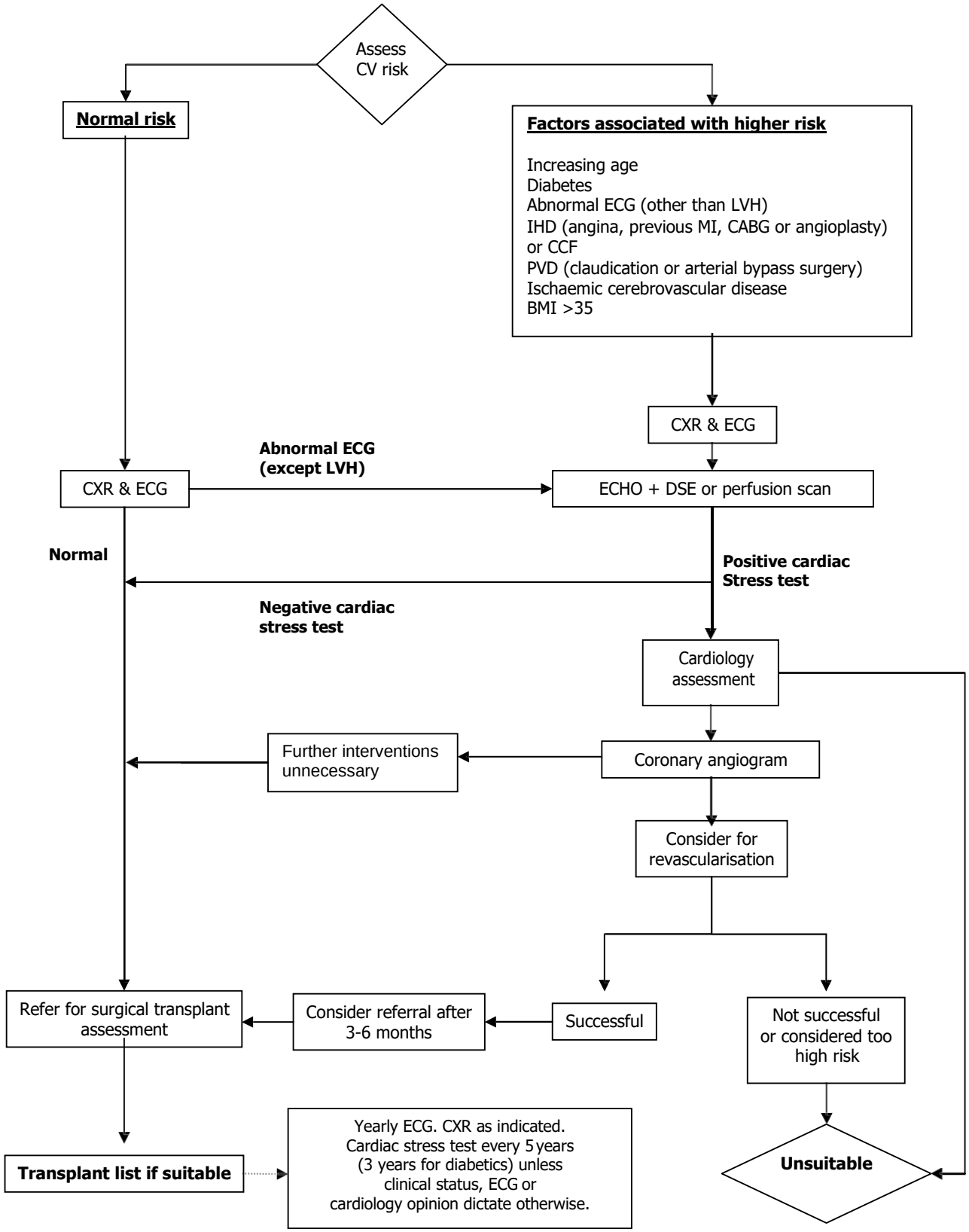
| Heart failure | Patient's functional capacity as well as LV function both important determinants of outcome. |
| Valvular heart disease | Consider seeking cardiology opinion. If surgical intervention predicted necessary over next few years consider operating pre-transplant. |
| Cerebrovascular disease<br>Previous TIA, stroke | Reversible factors should obviously have been resolved, e.g. surgery for occlusive carotid disease. Cardiovascular risk prevention strategies need to be optimised. Consider listing 3-6 months after event. |
| Hypertension | Proceed if good control and left ventricular function satisfactory. |
| Peripheral vascular disease | Transplant surgical assessment. Ensure no evidence of AAA, consider duplex assessment and vascular surgical opinion. Usually transplantable if no distal ischemia and palpable femoral pulses. |

## Cardiac assessment for renal transplantation



## Respiratory disease

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| Asthma | Usually proceed unless very severe and unstable. Respiratory and anaesthetic assessment if severe. |
| COPD | Spirometry, CXR and functional assessment important. Consider respiratory and anaesthetic opinion prior to listing. |
| Bronchiectasis [and other chronic suppurative lung disease] | Respiratory assessment of lung function and for opinion on expected infection pattern with immunosuppression. |
| Previous pulmonary TB or risk of TB | All patients should have individual risk assessment – including history of previous disease, treatment and contact history.<br><br>In general all Black or Asian patients born outside the UK should be tested and considered for preventive anti-TB therapy prior to or after transplant.<br><br>Testing with a TB interferon gamma release assay should be performed in high risk patients.<br><br>Preventive therapy for latent TB should be detailed in local protocol. |

## Gastrointestinal disease

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| Obesity | Usually BMI < 35 before proceeding, but case by case decision. |
| Dentition | Dental review to deal with chronic infection/inflammation. |
| Inflammatory bowel disease | Proceed if disease suppressed and nutritional state good. |
| Cholelithiasis | Symptomatic – intervene before proceeding [e.g. cholecystectomy].<br>Asymptomatic – transplant surgical assessment regarding intervention. |
| Peptic ulcer disease | Proceed on long term PPI. |

## Hepatic disease

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| Chronic viral hepatitis | Hepatology assessment. Usually require liver biopsy to assess disease extent, and active treatment of HBV or HCV before proceeding.<br>See Trust hospital guidelines. |
| Cirrhosis | Hepatology assessment of functional reserve before proceeding. |

## Diabetesmellitus

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| Type 1 diabetes | If possible patients should be considered for simultaneous kidney-pancreas OR live donor renal transplant.<br>Suitability for SPK Transplant [Oxford or Cambridge]<br>• typically age <50, but older if cardiovascularly fit<br>• no major end organ compromise from macrovascular disease<br>• BMI <30 kg/$m^2$<br>• neuropathy not causing severe CV compromise<br>• especially if brittle diabetic control |
| Type 2 diabetes | Decision to proceed usually dictated by severity of cardiovascular disease |

## Chronicinfection

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| HBV | Hepatology or ID referral. Active treatment according to local guidelines to suppress or eliminate viraemia before proceeding.<br>If disease seroconverted, ie Hep B core antibody positive and Hep B surface antigen negative, then need to ensure post transplant anti-viral prophylaxis plan established before listing. |
| HCV | Hepatology or ID referral. Active treatment according to local guidelines to suppress or eliminate viraemia before proceeding. |
| HIV | Active treatment – usually HAART.<br>See British HIV Association and BTS HIV guidelines. Will need trial of immunosuppression prior to listing. |
| Tuberculosis | Proceed if fully treated. Anti-TB prophylaxis according to local protocol. |

## Malignancy

### Cancer Screening

Cancer screening should be advised according to national guidelines. Asymptomatic patients who decline screening should not be barred from transplantation listing.

Prostate cancer – there is no national screening programme for prostate cancer (although some patients may have had their PSA checked through the Prostate Cancer Management programme) . The following advice is based on local consensus opinion.

Men aged 50 and over – check PSA prior to transplant listing.

PSA raised - refer patient to a urologist for further assessment.

If the urologist wishes to continue a watch and wait because risk considered low then the patient can be listed for transplantation.

If the urologist wishes to investigate the patient further then the outcome of these investigations should be completed prior to consideration of listing.

Men age > 50 years active on the waiting list should have their PSA level checked every 3 years

## Waiting period between malignancy and listing for transplantation.

Each patient's specific cancer should be considered based on its particular characteristics including its histological type, location, spread and response to treatment. Patient characteristics should also be considered.

The decision about listing should be discussed with the patient's specialist surgeon, physician and/or oncologist. The Israel Penn International Transplant Tumour registry may also be consulted for further advice - http://www.ipittr.uc.edu

| **Cutaneous malignancy** | |
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| Melanoma | Minimum 5 years disease free |
| Non-melanoma skin cancer | Usually proceed, but caution if already multiple cancers |
| **Other epithelial malignancy** | |
| Carcinoma in situ – cervix, vulva, or bladder | Proceed to listing |
| Non-in situ carcinoma of the uterus | Minimum 2 years disease free |
| Colorectal cancer – Stage A and B<br>Colorectal cancer – Stage C | Minimum 2 years disease free<br>Minimum 5 years disease free |
| Breast cancer – in-situ<br>Breast cancer – stage II | Minimum 2 years disease free<br>Minimum 5 years disease free |
| Prostate cancer | Listing may be possible and should be considered on a case by case basis with appropriate counselling. |

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| Renal Cell Carcinoma - Asymptomatic T1 renal cell carcinoma with no suspicious histological features<br><br>Renal Cell Carcinoma - symptomatic | Proceed to listing<br><br><br><br>Minimum 5 years disease free |
| Other cancers | Minimum 2 years disease free |
| **Myeloproliferative malignancy** | |
| Lymphoma & leukaemia | Minimum 5 years disease free |
| PTLD | A period of at least one year from control of PTLD to re-transplantation should be allowed to minimise risk of PTLD recurrence if clinical need allows (Grade B, level 3). |
| Myeloma | Transplant usually contraindicated |
| MGUS | Proceed to listing |

## Women of childbearing age

Ensure rubella immunisation Ensure discussion of

- Risks of unplanned pregnancy in early post-transplant period
- Appropriate contraception
- Fetal, maternal and graft outcomes after transplant
- Planning pregnancy and need to modify drug regimens

## Primary renal disease

Guidance on recurrence risk

| Disease | Recurrence risk | Graft loss risk | Use of living donor |
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| IgA nephropathy | 60% | 10% at 10 years | OK |
| HSP nephritis | 35% | 10% at 5 years | OK |
| Membranous nephropathy | 30%<br>Not always clear if recurrent or de novo | 60% at 5 years | OK |

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| FSGS | Overall 30%.<br>High risk if<br>• aggressive initial course (heavy proteinuria and renal failure within 3 years of onset)<br>• < 15 years at onset<br>• mesangial proliferation on biopsy<br>• not known to be familial | | OK |

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| | 75% if already recurred once | | |
| Mesangiocapillary GN – type 1 | 40%<br>80% if already recurred once | Depends in HCV status & other factors | OK |
| Mesangiocapillary GN – type 2 [dense deposit disease] | 80% | 25% at 10 years | OK |
| ANCA-positive vasculitis | 15% | Rare | OK |
| Anti-GBM disease | Very low if anti-GBM Ab negative | Very low if anti-GBM Ab negative | OK |
| Alport syndrome | Zero | Rare – unless early development of anti-GBM antibodies <10% of Alport transplants | Evaluate potential carriers carefully |
| Lupus nephritis | 1-30% reported! | Very low | OK |
| D+ HUS | Rare | Rare | OK |
| D- HUS | Overall 30%<br>Variable but very high with some complement mutations<br>Evaluation of suitability for transplantation must follow national guidance including liaison with Prof T Goodship (Newcastle) | Overall 80%<br>Variable but very high with some complement mutations | No |
| Primary hyperoxaluria | Very high<br><br>Consider combined liver-kidney transplant | Very high | No |
| AA amyloid | 10% at 5 years | | OK |
| AL amyloid | Uncertain – discuss on case by case basis | | |

## 3.4 Re-evaluation of listed potential recipients

All patients active on the transplant waiting list should be assessed annually by the consultant nephrologist in charge of their care to determine their continuing suitability for transplantation. This

will include cardiac assessment according to the algorithm above. Re- referral to the transplant surgical assessment clinic will be made at the discretion of the nephrologist in line with local protocol.

## 4. Education and Training

No new skills and no additional training required

## 5. Monitoring and Audit Criteria

Audit measures are under discussion. The Renal Association is at present revising its Clinical Practice Guideline for transplant recipient assessment (expected 2015). It is proposed that we delay setting audit measures in order to conform to national recommendations, the majority of which are likely to be audited by routine data reporting to NHS Blood & Transplant and the UK Renal Registry without the need for duplicated effort locally.

## 6. Legal Liability Guideline Statement

See section 6.4 of the UHL Policy for Policies for details of the Trust Legal Liability statement for Guidance documents

## 7. Supporting Documents and Key References


- Vincenti F et al new insights into the pathogenesis and therapy of recurrent focal segmental glomerulosclerosis. Am J Transplant 2005; 5: 1179-1185

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- Management of post-transplant lymphoproliferative disorder in adult solid organ transplant recipients – BCSH and BTS Guidelines British Journal of Haemtology 2010. 149:693-705.

- Israni et al Predicting Coronary Heart Disease after Kidney Transplantation: Patient Outcomes in Renal Transplantation (PORT) Study. American Journal of Transplantation 2010; 10: 338–353

- KHA-CARI Guideline: Recipient Assessment for Transplantation. Campbell S, Pilmore H, Gracey D, Mulley W, Russell C, McTaggart S. Nephrology 2013; 18(6): 455-62.National Health Service Blood and Transplant : Patient Selection for Deceased Donor Kidney Only Transplantation Policy POL184/2.1


## 8. Key Words

Kidney transplant – transplant recipient - end-stage kidney disease - cardiac screening – cancer screening

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