Renal clinic: CKD and Low Clearance Guideline Worcester (Doctors)

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

INTRODUCTION

This guideline is to assist Doctors in the processes and care management of patients with kidney disease. The guideline provides advice in the management of new patients to general nephrology, low clearance clinic patients and follow up care.

THIS GUIDELINE IS FOR USE BY THE FOLLOWING STAFF GROUPS :

This guideline will be mainly used by Doctors, but any health care professional may use it as support or to assist in decisions to be made in the care of patients with kidney disease.

Lead Clinician

Dr Ferring	Consultant Nephrologist. Renal
Extension approved by Trust Management Committee on:	22nd July 2015
Review Date: This is the most current document and is to be used until a revised version is available	8th September 2018

Key amendments to this guideline

Date	Amendment	By:
27.03.12	Extended for three years. No changes made.	Dr M Ferring
05.08.15	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
26/08/2016	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
August 2017	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
June 2018	Document extended for 3 months as per TLG recommendation	TLG

Renal clinic: CKD and Low Clearance Guideline Worcester

INTRODUCTION

The purpose of this guideline is to ensure that consistent high quality treatment is provided to all patients by summarising current renal disease guidelines. The guideline is given to all clinicians in the Worcester renal clinic as reference and guidance. It is designed to help patient management, but not to replace clinical judgement. The guideline only summarises major points; further study of NICE guidelines is recommended.

DETAILS OF GUIDELINE

Details of this guideline are taken from the NICE Clinical Guidelines: Chronic Kidney Disease 73 (Sept 2008), Anaemia management in CKD 39 (Sept 2006), Lipid modification 67 (May 2008). Renal Association guidelines: complications of CKD: (2007) and Assessment of renal transplantation (2008). NKF KDOQI guideline Renal Bone Disease (2003)

Written communication to patients / GP

Information from the clinic visit is communicated in the form of a letter addressed to the patient and copied to the GP from August 2009. The information needs to be written in lay terms, concise, unambiguous and structured. The letter should include:

- Patient identification and address
- Diagnosis / active problem list
- Future treatment plan for end-stage renal disease should be added to diagnosis list (ie transplant, peritoneal dialysis, haemodialysis, conservative care)
- Medication list / changes in medication
- Results of relevant investigations (for the benefit of the GP)
- Comment
- Recommendations

MONITORING TOOL

All new Doctors involved in reviewing patients in any renal clinic will be provided with the guideline prior to their first clinic list. A signature list of the guideline users will be collected ensuring each professional is competent at being able assess and deliver the contents. An periodical audit of the medical notes will ensure the guideline has been followed. This will be conducted by a senior Nephrologist or Renal Services Lead Nurse.

STANDARDS	%	CLINICAL EXCEPTIONS
Applies to all patients seen in general nephrology and low clearance clinics by a doctor	100%	Only following discussion with main author

GUIDELINE STEPS

I. General Nephrology

New patients:

Typical referrals to the clinic include abnormal or declining eGFR, haematuria, proteinuria, APKD discovered through screening relatives, nephrotic syndrome

Aims of the patient assessment:

1. How severe is current renal impairment? Severity is defined by eGFR (use only for chronic, not for acute renal failure). Interpret eGFR by categorising it into CKD stages:

1	90+	normal function, and renal disease (eg proteinuria)
2	60-89	mildly impaired function, and renal disease
3A	45-59	impaired but preserved renal function
3B	30-44	more impaired renal function
4	15-29	prepare for endstage renal disease
5	<15	endstage renal disease (or dialysis)

   Note presence of proteinuria = risk of more rapid decline in renal function

2. Is renal impairment stable or progressive? Check progression of eGFR over at least one year (= look as far back as possible at all tests – use NHS number to include blood tests sent by GP pre-hospital):
   a. fast if eGFR decline > 5 ml/min/year or > 10 ml/min/5 years
   b. mild progression < 5 ml/min/year
   c. no change
   d. unclear (need more blood tests / time to establish progression)

3. Judging by patient's current level of eGFR and progression:
   a. Is there a potentially reversible condition? How can we find out (eg ultrasound, stopping drugs, optimising blood pressure / diabetes, biopsy ...)
   b. How likely is the patient to reach endstage renal disease in his / her lifetime?
   c. If the patient is likely to reach endstage renal disease, which treatment options are medically possible (transplant, dialysis, palliative care)?

4. Hypertension? It is common in renal disease and hypertension control is essential in all patients. Targets:
   a. BP 120-139/<90 for non-diabetic renal disease, BP 120-129/<80 for diabetic renal disease
   b. With proteinuria (Non-diabetic - urine ACR > 30 mg/mmol; diabetic - urine ACR > 2.5 men / 3.5 women): first choice ACE-inhibitor or angiotensin blocker (ARB). No proteinuria: no preference for ACE / ARB over other antihypertensives.
   c. ACE / ARB / Aliskiren are contra-indicated in haemodynamically significant renal artery stenosis (if present in right and left renal arteries, or in the renal artery to a single kidney), but can be used in renovascular disease (with close UE monitoring) if at least one kidney has no significant stenosis and normal size on ultrasound. Also avoid

ACE / ARB / Aliskiren if severe heart failure with systolic hypotension, or hypovolaemia

d. CKD stages 4,5 (particularly if oedema): use loop diuretic rather than thiazide diuretic; no added salt in diet.

5. Establish cause of renal disease: It is not possible / necessary to establish this in all patients, but possible treatable conditions should be sought for. Family history of renal disease? In diabetic patients, aim to establish whether renal disease is likely due to diabetes (> 10 years diabetes if type 1, microvascular complications, proteinuria) or due to other renal disease (eg renovascular, hypertensive, CCF with systolic hypotension = no proteinuria). Rarer diabetes-related renal diseases include neuropathic bladder or papillary necrosis.
   a. Pre-renal / intra-renal / post-renal
   b. Urine dipstick:

Common causes of renal disease	Protein	Blood	Consider biopsy
Ischaemic, severe CCF, hypertension, interstitial nephritis, myeloma	-	-	If interstitial nephritis / myeloma suspected
Hypertension, interstitial nephritis	+	(+)	If interstitial nephritis suspected
Glomerular disease including diabetes, vasculitis, IgA NP	- to +++	- to +++	Usually / diabetes: only if uncertain
Glomerular disease: nephrotic	++++		All
Menstruation / urological disease / UTI		False+	No
Febrile illness / orthostatic proteinuria / UTI	False+		No

Consider renal biopsy indications (discuss with consultant):

i. Persistent haematuria and proteinuria (ACR > 30 or PCR > 50)
ii. Persistent proteinuria without haematuria (ACR > 70 or PCR > 100)
iii. Progressive CKD without cause
iv. Suspected multisystem disease with haematuria / proteinuria
v. Nephrotic syndrome: oedema, hypoalbuminaemia, major proteinuria (PCR > 300), hyperlipidaemia; carries risk of thrombosis, infection, malnutrition

6. Quantify proteinuria by ACR (particularly screen diabetes – 3 x ACR / year)

7. Haematuria and age > 40 or pain: usually needs urology assessment

8. Renal ultrasound:
    a. diagnostic (obstruction, APKD)
    b. guides management (2 normal kidneys = biopsy may be considered; small shrunken kidneys = irreversible nephron loss; asymmetric kidneys > 2 cm difference = small kidney may be ischaemic and poorly functional)

9. Drugs:
    a. Contributing to renal disease: eg NSAID, ACE / ARB, Ciclosporin ...
    b. Need dose reduction: eg Digoxin, Allopurinol, Simvastatin ...

10. Special blood tests if clinically multisystem disease / vasculitis suspected (ANCA, ANA, C3 C4 complement, immunoglobulins, GBM, cryoglobulins). Screen for myeloma if clinically suggested (old age, anaemia, hypercalcaemia, bone pain): immunoglobulins, serum protein electrophoresis, urine Bence Jones proteins (dipstick does not detect light chains). If those negative but clinical suspicion, serum free light chains for kappa:lambda ratio (kappa and lambda are both elevated in CKD due to reduced renal clearance, but elevation of only kappa or only lambda suggests abnormal light chain production).
11. Diabetes control: crucial to stabilise and preserve renal function in diabetic nephropathy – if HbA1C > 7% refer to diabetic clinic

Patient follow-up

1. Level of eGFR
2. Progression of eGFR:
    a. Identify stable versus unstable
    b. Differentiate progression from acute on CRF (usually caused by drugs, hypovolaemia, hypotension, intercurrent illness, hypercalcaemia, obstruction)
3. Is cause of renal disease established (if possible) and treated?
4. Blood pressure control
5. Diabetic control if diabetic nephropathy
6. Cardiovascular risk: This is very high in renal patients; many recommendations are extrapolated from general medical evidence.
    a. stop smoking
    b. hyperlipidaemia: Serum total cholesterol 4 mmol/L or above consider as raised for primary prevention. Hypercholesterolaemia is part of nephrotic syndrome. Statin for primary prevention consider if age > 40 and cardiovascular disease, diabetes, ethnic minority, familial hypercholesterolaemia, or nephrotic. For secondary prevention consider in all patients. Simvastatin 40 mg reduce to 20 mg if CKD 4,5.
7. Criteria for discharge back to GP: All need to be met

a. Preserved renal function (CKD stage 3 or above)
b. Stable renal function (decline < 5 ml/min/year)
c. Minimal proteinuria (ACR < 70, PCR < 100)
d. Will not reach CKD stage 5 in their lifetime
e. BP controlled
f. No immunosuppressive treatment (due to renal disease)

In general long-term monitoring (= eg annual UE, eGFR, urine ACR) and blood pressure control are needed and this needs to be clearly stated in the letter to GP and patient. This should also clearly state criteria for referral back to renal clinic (eg eGFR drops below 30, eGFR declines by > 5 ml/min/year ...)

8. Patient follow-up: Individual for patient needs (very close for rapidly declining eGFR, CKD 5, uncontrolled hypertension, nephrotic syndrome or vasculitis on treatment …). Pure eGFR testing does not always require a clinic visit and can be done by the GP. NICE recommends the following frequency for eGFR testing:
   a. eGFR > 60: 12 monthly
   b. eGFR 30-60: 6 monthly
   c. CKD stage 4: 3 monthly
   d. CKD stage 5: 6 weekly

II. Low Clearance (CKD stages 4,5)

Assessment aims at:

1. Is there a reversible / treatable cause or irreversible renal disease with nephron loss (see above)?

2. How soon will end-stage renal failure be reached? Once eGFR declines to around 10 AND patient is symptomatic, dialysis needs to start.

3. Plan and prepare for end-stage renal disease (transplantation, dialysis or supportive care). Discuss all steps below with consultant.
   a. eGFR < 30: Consider patient for transplantation = best treatment when possible; certainly consider in young / fit / no co morbidity.
      i. Patient information by consultant / counselling by renal nurses (live donor / cadaveric kidney transplant; simultaneous kidney-pancreas transplant if type 1 diabetic); nurse patient counselling will also include dialysis options as appropriate
      ii. eGFR 25 start cardiac work-up (echo for all, myocardial perfusion scan if age > 40 or diabetic); if abnormal refer to cardiology for coronary angiogram; consider other investigations as needed (eg lung function in respiratory disease, vascular duplex if PVD), carotid duplex if TIA); inform renal nurses about work-up
      iii. refer to transplant assessment clinic with cardiac work-up results and complete transplant referral checklist / appendix 5 (UHB for live / cadaveric kidney; Oxford kidney-pancreas); inform renal nurses.
   b. eGFR <25 start dialysis work-up

i. Patient information by consultant / counselling by renal nurses; nurse counselling will also include conservative care if appropriate
ii. Follow-up patient decision and refer appropriately (unless definite feasible plan for living donor transplant, or pancreas-kidney transplant)
iii. If haemodialysis refer timely for AV fistula formation early = 1 year before anticipated start of dialysis or once eGFR 15-20; REFER EARLY if risk factors for AVF failure (eg female / obese / old age / diabetes / peripheral vascular diseas) or if rapid decline in eGFR >5ml/min/year. AVF usually need a minimum of 4 weeks to mature but it can take a year to establish functioning access.
iv. Examine AV fistula clinically by palpation and auscultation for patency and vein development at every clinic visit (as there is a considerable early failure rate: thrombosis / stenosis). Avoid pressure over vein (remove wrist watch or tight wound dressings)
v. Warning signs for failing fistula:1 Venous hypertension (well developed vein, palpable heave, venous collaterals, pulse rather than thrill); 2 Stenosis (palpable focal narrowing of vein with increase in loudness and high pitch of bruit; venous hypertensions upstream, low pressure downstream); 3 Poorly developed vein 9thin calibre vein<6mm with weak thrill); 4 AVF development uncertain or deep vein (vein deeper than 6 mm may be difficult to cannulate); 5 **Hand ischaemia** (pain, numbness, cold cyanosed hand, absent wrist pulses which return with AVF compression, **rest pain or acute occurrence need immediate vascular assessment)** AVF with abnormal development need duplex (refer FAO Dr Slaney) as first line investigation: refer if AVF not mature / abnormal by 4 weeks, particularly if CKD stage 5.
vi. Signs of thrombosed AVF: if not thrill check for bruit – if absent confirms thrombosis (exception: immediately after surgery blood flow can be very low – re assess 1 week later); thrombosis may occur in downstream vein, resulting in thrill and bruit over vein just beyond anastomsis – therefore palpate and auscultate along entire course of vein.
vii. Signs of normal AVF development: good calibre vein throughout course of the vein, continuous thrill and bruit, no heave, no pulse; vein empties uniformly on arm elevation and refills uniformly on downstream (temporary!) vein occlusion.
viii. If peritoneal dialysis refer for PD catheter 3-6 months before anticipated start of dialysis

c. eGFR 20 or lower screen for Hepatitis B (HBs Ag and HBc Ab), Hepatitis C (anti-HCV), HIV if transplantation, haemodialysis or peritoneal dialysis planned:
    a. if negative HBs Antigen, HBc Antibody and no reason to expect later seroconversion, start Hepatitis B vaccination by referring to GP with standard referral letter / appendix 4 (HB Vax Pro 40 to be given at 0, 1, 6 months)
    b. follow progress at each subsequent clinic visit
    c. HBc antibody titre check at 8 months: needs booster if < 10 U/mL

d. Supportive "conservative" care (= no dialysis): discuss with frail, elderly patients with significant comorbidity, or those unlikely to survive another year even if dialysis was offered. Refer to joint palliative-renal care St Richard's Hospice once eGFR 12 or less.

4. Renal anaemia work-up, then refer to renal anaemia clinic
    a. If eGFR <45, check FBC (anaemic = Hb < 11)
    b. likely due to renal disease if normocytic / normal white and platelet count, and no other cause (eg bone marrow suppression, blood loss, apparent anaemia with gross fluid overload?)
    c. Check treatable conditions in all: ferritin and CRP (or iron/TIBC), B12, folate, PTH. Ferritin is an acute phase protein and raised in acute inflammation.
    d. Refer to renal anaemia clinic for iv iron if Hb < 11 and ferritin < 100 or iron/TIBC < 20%. IV iron is contra-indicated in acute infection.
    e. Refer to renal anaemia clinic for erythropoietin if Hb <11 without iron deficiency (ferritin > 100), or if severe anaemia = Hb < 9; control and monitor BP to < 140/90 with antihypertensives as hypertension may accelerate during erythropoietin treatment.

5. Renal anaemia follow-up (in general nephrology / low clearance clinic):
    a. monitor Hb, ferritin, BP every 4 weeks (ask GP) during initiation of erythropoietin
    b. Target Hb 11-12 (10.5 – 12.5 acceptable); target ferritin > 100; target BP < 140/90
    c. 3-monthly once stable Hb and dose of erythropoietin (maintenance)

6. Mineral bone disease (screen if eGFR <30)The basic aims are to control hyperphosphataemia, hyperparathyroidism, and to avoid drug-induced hypercalcaemia.
    a. Check calcium, phosphate, PTH: in stage 4 every 6 months, in stage 5 every 3 months
    b. Control phosphate to < 1.5 mmol/L : first by dietary phosphate restriction, then give Phosphate binders (taken WITH meals): Start Calcium Acetate 1 g or Adcal 1.5 g with each meal maximum tds; do not use if corrected Calcium above 2.35 mmol/L; recheck Calcium 2-4 weeks after starting drug
    c. Raised PTH in CKD 4 (> 110 ng/L) AFTER controlling phosphate to < 1.5: give Alfacalcidol 0.25 mcg thrice weekly; do not use if corrected Calcium above 2.35 mmol/L; recheck Calcium 2-4 weeks after starting drug. *[KDOQI 2003 and RA actually recommend checking 25(OH) vitamin D levels first and give Ergocalciferol if 25(OH) vitamin D deficient; however, pharmacological doses of Ergocalciferol not available as oral preparation; review when KDIGO guidelines published later 2009]*
    d. Raised PTH in CKD 5 (> 300 ng/L) AFTER controlling phosphate to < 1.5: give Alfacalcidol 0.25 mcg once daily; do not use if corrected Calcium above 2.5 mmol/L; recheck Calcium 2-4 weeks after starting drug

e. Monitor for hypercalcaemia, after starting treatment with calcium containing phosphate binders, alfacalcidol, or particularly their combination; stop drugs if hypercalcaemia
f. Do not oversuppress PTH to < 70 ng/L (stage 4), to < 150 ng/L (stage 5).

7. Salt and water retention often occurs if eGFR <20: Often suggested by hypertension ± oedema: Low dietary salt intake and loop diuretic.

8. Hyperkalaemia if eGFR < 20 : Exclude spurious (repeat UE), define severe > 7 mmol/L and consider in-hospital treatment. Stop relevant drugs, start low potassium diet. Furosemide if oedema; sodium bicarbonate if metabolic acidosis but no oedema and no hypocalcaemia. Short-term calcium resonium. If severe calcium chloride / insulin-glucose with blood sugar monitoring / salbutamol, (refer to Hyperkalaemia Treatment Guideline) If refractory, dialysis.

9. Protein intake may become insufficient in CKD stage 5: Malnutrition should be avoided, but may result from uraemia and then needs to be treated by dialysis. Dietary intake, symptoms of nausea vomiting should be sought after in all CKD 5. All patients with eGFR 12 should be seen by dietician regardless of symptoms to assess nutritional intake.

APPENDIX 1: Checklists

CHECKLIST NEW PATIENT:

Assessment	***Identify***	***Action***
1. current eGFR	CKD 1-3 CKD 4, 5	General nephrology or discharge back to GP Low clearance clinic
2. eGFR decline	Fast decline	Establish and treat potentially reversible factors; close follow up
3. future trend	End-stage renal failure likely within 1 year	Low clearance; close follow-up
4. treat hypertension	Non-diabetic Diabetic	Target 120-139/<90 Target 120-129/<80
5. cause renal disease	Diabetes Renal lupus / vasculitis Primary glomerular disease Non-glomerular disease Obstruction	Diabetic nephropathy or other renal disease? Biopsy? Biopsy? (various) Urology?
6. Proteinuria (ACR)	Non-diabetic patient Diabetic patient Spurious	>30 mg/mmol with haematuria; >70 without haematuria > 2.5 mg/mmol (men), > 3.5 mg/mmol (women) Exclude false +
7. Haematuria (dipstick)	Renal Urological spurious	Biopsy Imaging urinary tract Exclude false+
8. Renal ultrasound	Obstruction APKD “normal” Small shrunken kidneys	Early treatment to prevent irreversible nephron loss Family screening; history of SAH? Renal biopsy possible Irreversible nephron loss; no biopsy; eGFR decline likely
9. Drug review	Nephrotoxins? May accumulate?	Stop Adjust dose
10. Specific conditions	Myeloma Vasculitis Lupus Anti-GBM	Serum immunoglobulins and electrophoresis, urine Bence Jones; serum free light chains ANCA (PR3, MPO); cryoglobulins ANA (dsDNA), C3 C4 Anti-GBM

CHECKLIST FOLLOW-UP

Assessment	***Identify***	***Action***
1. current eGFR	CKD 1-3 CKD 4, 5	General nephrology or discharge back to GP Low clearance clinic
2. eGFR decline	Fast decline	Establish and treat potentially reversible factors; close follow up
3. cause renal dis	Review work-up	Start / monitor treatment
4. blood pressure	Above target	Re-measure BP / lifestyle / compliance / modify drugs
5. diabetic control	Above target	Diabetic clinic
6. CVS risk	Smoker? Cholesterol > 4 mmol/L	Stop smoking Consider statin
7. Discharge to GP	If stable preserved renal disease	Clear criteria for monitoring and re-referral to GP and patient

CHECKLIST LOW CLEARANCE

Assessment	***Identify***	***Action***
1. Cause renal disease	Reversible Irreversible	Treat and monitor Prepare for endstage renal disease
2. Future trend	Endstage renal disease likely < 1 year, or CKD 5	(see 12.-24.) Follow monthly
3. Patient education and decision	Start education: Transplant (eGFR < 30) Peritoneal dialysis (eGFR < 20) Haemodialysis (eGFR < 20) Conservative (eGFR < 20)	(If medically possible) Refer to renal nurse for education
4. Transplantation	Cardiac work-up then refer (start eGFR < 25): Non-type 1 Diabetes Type 1 Diabetes	Echo, (myocardial perfusion scan) Cadaveric Kidney – UHB Live donor kidney - UHB Simultaneous kidney pancreas transplant – Oxford
5. Peritoneal dialysis	When will eGFR = 10?	Refer PD catheter 3-6 months prior to starting PD
6. Haemodialysis	When will eGFR = 10?	Refer AV fistula 1 year prior to starting HD or

		eGFR 15-20
7. Viral screen	All except conservative	Screen HIV, HBV, HCV
8. Hepatitis B vaccine	All except conservative	Vaccinate by guideline (if HBs Ag and HBc Ab negative)
9. Conservative Care	>75 years + frail + comorbidity	Patient to consider conservative care (dialysis no survival benefit). Refer to joint Renal/Palliative Clinic.
10. Renal anaemia work-up	Renal anaemia Iron deficiency Other anaemia	Refer to renal anaemia clinic; control BP Refer iv iron Investigate
11. Renal anaemia follow-up	Hb rise 1-2 g/dL/month; target Hb 11-12 ferritin > 100 BP < 140/90	Adjust EPO dose Iron? Antihypertensives?
12. Mineral bone disease	Hyperphosphataemia High PTH, controlled phosphate hypercalcaemia	Refer dietician, then phosphate-binder with meals Alfacalcidol stop pro-calcaemic drugs
13. Salt and water retention in CKD 5	Hypertension, oedema	Dietician: avoid salt Loop diuretic
14. Hyperkalaemia	Severe > 7 mmol/L Moderate < 7 mmol/L Spurious	Admit (unless spurious) Drug modify; dietician Repeat UE Check for met acidosis
15. Protein intake	CKD 5: confirmed malnutrition:	Dietician screen Dietician review and: Start dialysis if CKD 5 + malnutrition GI investigations if CKD 4 + malnutrition

APPENDIX 2: Blood and urine tests

B = biochemistry, H = haematology, M = microbiology

Test	***Frequency***	***Sampling***
Urine: ACR	Diabetes: 3x / year Screen at risk of CKD	White-top universal container (B)
UE, eGFR	Screen at risk of CKD CKD 1,2: annually CKD 3: bi-annually CKD 4: 3-monthly CKD 5: monthly	Gold-top (B)
Venous bicarbonate	CKD 5: monthly	Gold-top (B)
Calcium, Phosphate, Albumin	CKD 4: 6-monthly CKD 5: 3-monthly	Gold-top (B)
PTH	CKD 4: 6-monthly CKD 5: 3-monthly EPO work-up	Purple-top (B)
iron/ TIBC	EPO work-up	
Ferritin	EPO work-up EPO-initiation: monthly EPO-maintenance: 3-monthly	Gold-top (B)
CRP	EPO work-up	
FBC	EPO work-up EPO-initiation: monthly EPO-maintenance: 3-monthly	Purple-top (H)
B12, folate	EPO work-up	Gold-top (H)
HBV, HCV, HIV	Screen eGFR 20	Gold-top (M)

APPENDIX 3: Referral pathways for CKD 4,5 patients

Patient counselling about end-stage renal disease treatments
Refer Racheal Smith, renal CNS Worcester, pager 480

Renal anaemia clinic
Refer Racheal Smith, renal CNS Worcester, pager 480

Renal dietician
Refer to Worcester renal dietician [to be appointed]

Patient to have peritoneal dialysis catheter insertion and start PD (UHB)
Letter or email to Sister Jayne Postlethwaite or 0121 6272515 CAPD unit: jayne.postlethwaite@uhb.nhs.uk.

Copy to Dr Lukas Foggensteiner Lukas.foggensteiner@uhb.nhs.uk

Vascular access = AV fistula formation / repair: UHB
Letter to Sister Karen Tullett (UHB): karen.tullett@uhb.nhs.uk

Copy to Mrs Devika Sookloll (UHB) Devika.Sookloll@uhb.nhs.uk

Patient to start haemodialysis (under UHB)
Letter to Mrs Myra Sanchez, Dialysis Unit Coordinator Myra.Sanchez@uhb.nhs.uk
Copy to Dr Lukas Foggensteiner Lukas.foggensteiner@uhb.nhs.uk

For patients living in the North Worcestershire are (Bewdley, Stourport, Kidderminster) refer to Dr KA Shiva Kumar, Consultant Nephrologist, Russells Hall Hospital, Pensett Road, Dudley. DY1 2HQ. Tel 01384 244432, Secretary, Claire.miles@dgoh.nhs.uk

Pre-emptive renal transplant referral (UHB) Tel 0121 6271627. Fax 0121 6275792
Cardiac work-up then letter to Mr Nick Inston, Consultant Transplant Surgeon at UHB Birmingham

Live donor transplant coordinator: Sue Moore ext 8915, mob: 07767441614

Cadaveric transplant coordinator: Dawn McPake ext 3307, mob: 07767441615, Yvonne Myers ext 3307

APPENDIX 4: GP guidelines Hepatitis B vaccination

Please ask secretary to attach this template to your clinic letter when asking GP to provide vaccination.

Dear Dr

Re:

This patient with advanced CKD may need dialysis in the future and hence would benefit from **Hepatitis B vaccination**. Please could that be given in primary care by your surgery.

Renal patients tend to have a poorer response to the vaccine compared to the general population. We would therefore recommend the higher strength vaccine. Up until now this was HBvaxPro but unfortunately HBvaxPro is currently unavailable until after January 2010.

Patients with chronic kidney disease do not respond adequately to a regular dose and so require the increased dose of 40µg/2mL. Recommended administration of this vaccine is into the deltoid muscle in either two, 1ml injections or one larger 2ml volume with a ¾ or 1 inch 23g needle. In patients who are at risk of haemorrhaging the injection can be administered subcutaneously.

Please could you give the available alternative vaccine, **Engerix B 40µg/2mL.**

1. Please can you give four doses, i.e., at 0, 1, 2 and 6 months by i.m. injection (s.c. only if anticoagulated or thrombocytopenia).

2. Check the response HBs antibody titre at 2 months after completing the immunisation. Adequate response is anti HBs titre ≥ 10 mIU/mL.

   (a) A further booster of vaccine is needed if the response is modest (anti HBs 10 miU/mL – 100 miU/mL).

   (b) A full repeat vaccination course is needed if the response is inadequate (anti HBs <10 miU/mL).

3. For patients who have already started with HBvaxPro vaccination but have not completed their set of 3 injections at 0, 1 and 6 months:

   (a) Please give **ONE** further vaccine dose (Engerix) at 6 months if patient had 2 injections of HBvaxPro; anti HBs response 8 weeks after completing vaccination.

   (b) Please give **THREE** further vaccine doses (Engerix) at 1, 2 and 6 months if patient only had 1 injection of HBvaxPro; anti HBs response 8 weeks after completing vaccination.

Please could you let us know if you are **NOT** able to offer this patient HBV vaccination.

Yours Sincerely

APPENDIX 5: Checklist for renal transplantation referral to UHB

All information * is compulsory for all patients

Please Return Form to:
Renal Surgical Transplant Secretaries
4th Floor
Queen Elizabeth Hospital
Birmingham
B15 2TH

PRE-TRANSPLANT RECIPIENT CHECKLIST

Patient Name & Address	Date of birth

Renal Consultant:
Referring Doctor:
Referring Centre:
Primary Renal Disease:
Current Dialysis Modality:
Dialysis Centre:
Date of 1st RRT:
GFR results for Pre-dialysis patients:
*Weight: *HT: BMI: *Allergies: *Abo Type:
Previous Transplant History (date, date and reason for failure)

Other Conditions	Y/N	Details
Learning disabilities		
Visual/hearing impairment		
Psychiatric illness		
Language interpreter required		
Diabetes		
Malignancy		
Anti-coagulation*		

Investigations Checklist within last year

Test	Done (□)	Normal / Abnormal	Date
ECG			
CXR			
Echo*			
Renal USS			
Stress Thallium			
Myocardial perfusion Scan			
Angiogram			

FOR QEH USE ONLY
Referral Letter Y/N
Date of Referral:
Date referral received:
Appointment for transplant assessment clinic: Y/N.
Signature

REFERENCES

NICE Clinical guideline: (Sept 2006) *Chronic Kidney Disease 73*
NICE Clinical guideline: (Sept 2006) *Anaemia management in CKD 39*
NICE Clinical guideline: (May 2008) *Lipid Modification 67*

Renal Association Guidelines: (2007) *complications of CKD*
Renal Association Guidelines: (2008) *assessment for renal transplantation*
http://www.renal.org/pages/pages/guidelines/current/

NKF KDOQI guidelines: (2003) *Renal Bone Disease*

CONTRIBUTION LIST

Key individuals involved in developing the document

Name	Designation
Dr Ferring	Consultant Nephrologist
Dr Spencer	Consultant Nephrologist
Liz Wittich	Lead Nurse Renal Services
Racheal Smith	Renal Nurse Specialist

Circulated to the following individuals for comments

Name	Designation
Dr Ferring	Consultant Nephrologist
Dr Spencer	Consultant Nephrologist
Liz Wittich	Lead Nurse Renal Services
Racheal Smith	Renal Nurse Specialist

Circulated to the following CD's/Heads of dept for comments from their directorates / departments

Name	Directorate / Department

Circulated to the chair of the following committee's / groups for comments

Name	Committee / group