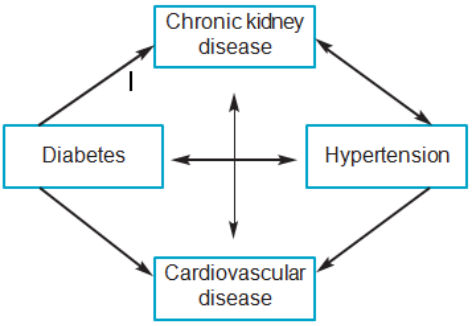
Guidance to support Community Renal Clinics

July 2015

CKD prevalence and Coding

Surveys suggest that up to 5% of adults have stage 3-5 chronic kidney disease, and another 5% have stage 1-2. For those with stage 3-5, two thirds are over 70 years, 75% have hypertension, 25% have diabetes. In east London people with diabetes make up more than 30% of the dialysis programme.

The people most at risk of CKD are those with diabetes, hypertension and cardiovascular disease. These risk factors interact to cause high rates of CKD.



There is good evidence that risk factor treatment can prevent or delay progression, reduce the development of complications, and reduce the risk of CVD.

Other Groups to test include those with:

Episodes of Acute Kidney Injury
Multisystem disease with possible renal involvement, eg SLE
Bladder outflow obstruction, and kidney stones
FH of hereditary kidney disease or end stage renal disease
Monitor patients annually on lithium or calcineurin inhibitors (eg cyclosporin or tacrolimus)

Coding is important

A CKD stratification code is required for the QOF disease register. Evidence suggests that patients with a CKD code are more likely to have their BP controlled and to have regular renal function monitoring.

Uncoded patients are twice as likely to be on medication which may damage the kidney such as NSAIDs.

NICE guidance 2014 advises CKD classification both by eGFR category and by ACR. This will help guide frequency of CKD monitoring.

http://www.nice.org.uk/guidance/cg182/chapter/1-recommendations

eGFR Categories

Stage 1	≥90	(with a renal abnormality)
Stage 2	60-89	(with a renal abnormality)
Stage 3a	45-59	
Stage 3b	30-44	
Stage 4	15-29	
Stage 5	<15	Kidney failure

The estimated GFR is used for diagnosis and stratification of CKD. Serum creatinine values on their own are insufficiently sensitive to detect moderate CKD. The eGFR varies according to an individual's hydration level, and is overestimated with a low muscle mass. In acute renal failure eGFR values may lag behind the rise in creatinine, and should not be relied on for diagnosis

In adults eGFR is calculated using the 4 variable Modification of Diet in Renal Disease (MDRD) equation. *(Serum creatinine, age, sex and ethnic origin (for African –Caribbean people only).*
The correction for ethnicity is **NOT** added by the pathology lab.

In future the CKD EPI formula will be used by all laboratories. This is more accurate with less measurement variability at higher values.

CKD investigations in primary care

CKD (3-5) diagnosis requires evidence of two eGFR values less than 60ml/min/1.73m2 at least 90 days apart.

Urinalysis: MSU if symptomatic.
Dipstick analysis for haematuria.

Albumin:creatinine ratio: All people with CKD require a quantitative analysis of proteinurea. NICE recommends ACR for everyone (previously only for diabetes).

FBC: If Hb<11 check haematinics.
Consider chronic anaemia of renal failure if Hb<9.5gm, normal haematinics and eGFR<45.
Consider referral for erythropoietin.

Lipid profile, ALT. To assess CVD risk prior to offering statin treatment.

ESR, CRP, protein electrophoresis
If a multisystem disorder, or myeloma is suspected

Ca & PO4: Markers of calcium metabolism, seek advice if there are persistent abnormalities.
Aim to maintain 25-$(OH)_3$ vitamin D_3 > 75 nmol/L'.

Renal Ultrasound: indicated if the history is suggestive of obstruction (consider PSA in men), if there is a positive FH for polycystic kidney disease, and progressive CKD.

Proteinuria- an important marker of CKD severity

The presence of proteinuria increases the risk of CKD progression at every stage.

Proteinuria is also a positive predictor of increased CVD risk among those with CKD.

ACR is recommended as the quantitative measure of urinary protein loss.

NICE 2014 has classified ACR categories as follows:

A1 <3 normal
A2 3-30 moderately increased
A3 >30 severely increased

Haematuria

Haematuria associated with proteinuria and/or a low eGFR, should trigger referral to a nephrologist as glomerular disease is likely.

Macroscopic haematuria:
This always needs investigation - either to rule out a urinary tract infection - or to rule out malignancy or other causes when it may be painless.
20% of cases are due to malignancy.
Two week urology suspected cancer referral is recommended.

Microscopic haematuria
If under 40 years without symptoms but microscopic haematuria on more than one occasion, a renal ultrasound (and plain KUB film for stone) along with U&E, PSA, MSU, urine cytology is sufficient to rule out serious pathology

If over 40 years. bladder cancer is more likely.
Two week urology suspected cancer referral is recommended .

Renal bone disease

Vitamin D insufficiency is common in the east London population. In CKD decreased activation of vitamin D, decreased calcium absorption and increased phosphate retention occur. As eGFR declines these processes may trigger secondary hyper parathyroidism with bone reabsorption, pathological fractures and metastatic calcification, increasing CVD risk.

When the eGFR falls below 45ml/min, check serum 25-hydroxyvitamin D. If this is low, indicating vitamin D deficiency treat with a dose aimed at maintaining vitamin D levels > 75 nmol/L (1,000iu a day)

If the PTH is high (>10pmol/l) and vitamin D levels are replete, this suggests secondary hyperparathyroidism. Refer/discuss with nephrologist.

As the eGFR declines there will be inadequate production of vitamin D. These patients require alphacalcidol and renal supervision.

Management in Primary Care

The main aims of primary care management include:-

- Treating modifiable risk factors.
- Regular monitoring of CKD
- Identifying progressive CKD, with referral if indicated.
- Provision of information for patients and carers.

Treating modifiable risk factors

Hypertension

Lowering blood pressure reduces the rate of decline in GFR whatever the cause of CKD. ACEI/ARB are more effective than other agents in reducing deterioration in renal function. Both drugs reduce proteinuria independent of their antihypertensive effect.

Blood Pressure Treatment
Treatment Target < 140/90

If diabetic OR if urine ACR > 70mg/mmol,

Treatment target < 130/80

ACEI / ARB drugs are associated with a fall in eGFR. Both drugs are also associated with a rise in serum potassium. This is of concern in patients with a low eGFR on other medication which affects potassium levels, particularly spironolactone, NSAIDs and β-blockers.

There is no eGFR below which an ACEI / ARB is contraindicated but the lower the initial eGFR the greater the monitoring requirement.

Hyperlipidaemia

CKD is a powerful risk factor for CVD. Recent NICE guidance on primary prevention of CVD advises:

1. Offer atorvastatin 20 mg for the primary or secondary prevention of CVD to people with CKD.

2. Increase the dose if other major risk factors, or 40% reduction in non-HDL cholesterol is not achieved and eGFR is 30 ml/min/1.73m^2 or more.

3.If eGFR <30 ml/min agree higher doses with a renal specialist.

Optimising diabetic control

Diabetic nephropathy is a major cause of renal failure. It is characterised by progressive increase in proteinuria and associated retinopathy**.**
Good glycaemic and blood pressure control slows the development of microalbuminuria, an early marker for renal damage.

ACEI / ARB and falling eGFR

Check eGFR and electrolytes before starting ACEI / ARB drugs, and 2 weeks after each dose increase.

ACEI / ARB drugs are associated with a fall in eGFR

If the fall in eGFR is 25% or more of the baseline value stop the renin-angiotensin system antagonist and substitute other medication. Investigate other causes of renal function deterioration such as other medication (diuretics and NSAIDs) or less commonly renal artery stenosis.

Consider specialist advice.

.

Managing a high potassium

Do not routinely offer ACEI / ARB if the baseline potassium is 5.5 mmol/l or more.

If potassium >6 stop ACEI / ARB, and review other medication. Consider giving simple diet advice (reduce bananas, soft fruit, fruit juices and chocolate). Note that high blood sugar in diabetics is a common cause. Cautiously re-institute ACE I or ARB once potassium is in the normal range.

If the potassium level is >6.5, (on an unhaemolysed sample) it should be rechecked and managed on the same day.

If potassium >7, the patient may need assessment in A&E on the same day.

East London Integrated Kidney Care
Community Renal Clinics in east London – starting July 2015

1. Who to refer? Everyone you would otherwise refer to renal OPD

NICE guidance on referral 2014

- eGFR less than 30ml/min – with or without diabetes
- ACR 30mg with haematuria
- ACR 70mg/ml+ (unless diabetes AND appropriately treated)
- Sustained decrease in eGFR of 15ml in past year – or 25% decrease in eGFR
- Poorly controlled hypertension (with 4 medications)
- Known or suspected rare or genetic causes of CKD
- Suspected renal artery stenosis

2. How to Refer?

a) Discuss referral with the patient, ask permission for community renal consultant to view GP record.
b) Click the sharing button in EMIS Web to record patient consent for local record sharing
c) Open the CKD template, decide whether further tests needed, **record data sharing and referral to community renal clinic**
d) Write in the narrative record the reason for your referral to the renal clinic.
e) In C&B choose City and Hackney community renal clinic

3. The renal consultant will:

a) Review the patient notes, CKD template and investigations
b) Document advice and management in the renal community clinic record on EMIS Web
c) Notify the clinician and the practice to view the shared record (*using the practice and clinician nhs.net email*)

Community CKD Surveillance

CEG is working with the East London Integrated Kidney Care project to provide:-

Practice, locality and CCG CKD dashboards with key performance indicators
CKD prevalence searches to identify un-coded cases
Searches to identify at risk patients with rapid decline – practice trigger tools to alert clinicians.

ceg Clinical Effectiveness Group *http://www.blizard.qmul.ac.uk/ceg-home.html*