National CKD Audit QI tool

CKD coding guide
The National CKD Audit Quality Improvement tool is designed to help practices both improve their coding of CKD and assist in the management of patients who are on the CKD register.

CKD stage 3-5 should be diagnosed in patients with an estimated glomerular filtration rate (eGFR) of less than 60ml/min on at least 2 occasions separated by a period of at least 90 days.

What are the benefits of coding CKD?
Accurate coding of CKD has benefits for patients in at least four areas:

- **Safer Prescribing**
  A number of medications accumulate in CKD so doses should be reduced. Examples include newer oral anticoagulants (rivaroxaban; dabigatran), metformin and gabapentin. In addition, other drugs, such NSAIDs, are more likely to cause AKI in those with pre-existing kidney damage and should be avoided in CKD if possible. Coding of patients with CKD means prescribing errors are reduced (and may trigger automated alerts in many computer systems).

- **Avoidance of AKI**
  Patients with CKD have amongst the highest risk for developing acute kidney injury (AKI)1 and community-acquired AKI is associated with a substantial risk of death2. Advice on simple measures can reduce the chances of AKI when patients are unwell, for example, attention to adequate hydration and sick day rules (temporary cessation of ACE-I, ARBs and diuretics) along with avoiding of nephrotoxic medications3. A small number of patients will also benefit from more intensive monitoring in during these periods.

- **Reducing CV risk**
  Patients with CKD are at additional CV risk compared to those with similar risk factor profiles but normal renal function4. Patients with CKD probably gain at least as much benefit from therapies designed to prevent CV disease5 but studies have suggested they may be less likely to achieve therapeutic targets6.

- **Preventing and managing progression to dialysis-requiring renal failure**
  Although less than 1% of patients with stage 3 CKD will go on to need dialysis or transplantation (renal replacement therapy; RRT) each year7 aggressive blood pressure control can reduce the rate of decline in kidney function and need for RRT. This is observed most particularly in those with significant proteinuria where the risk of progression is reduced by around a quarter by targeting intensive blood pressure lowering8. Furthermore timely referral to specialist services in those who are likely to progress is associated with improved outcomes9.
Why is there a list of patients at risk of CKD for whom testing is advised?

- Testing patients with risk factors is the most effective way to identify CKD. Those with diabetes (eGFR and albumin:creatinine ratio ACR) and those taking regular nephrotoxic medications should be tested for CKD annually (eGFR only). Other risk groups need testing less often and the QI tool highlights those who have not been tested in the last 5 years.

Which patients should be coded with highest priority?

- Those patients who have the lowest eGFR should be coded with the highest priority. These patients will be at the top of the list titled ‘Potentially Uncoded CKD’.
- Patients with an eGFR that is declining are also a priority to code.

What about elderly patients who have an eGFR <60?

- Many elderly patients may have an eGFR <60mL/min. Coding these patients is still valuable as they are still at high risk of AKI and coding can assist with prescribing decisions.
- Intensive monitoring and tight BP control in this group may not have the same benefits as in younger patients with CKD and decisions should be made on a case-by-case basis.

What about patients whose eGFR varies around the threshold for CKD?

- The eGFR will vary in many patients. A 50% or greater rise in serum creatinine known or presumed to have occurred within the past 7 days indicates acute kidney injury see https://www.nice.org.uk/guidance/cg169.
- For those patients who don’t have AKI but with an eGFR that varies around the threshold for CKD it is worth reviewing the trend in eGFR values. Consider coding if there is a decline in eGFR over time. The new NICE guidelines suggest that using a cystatin-C based estimate of eGFR might be helpful in this situation https://www.nice.org.uk/guidance/cg182.

Why are there two eGFR values in some of the lists in the QI tool?

- The ‘lab eGFR’ is the value (based on the MDRD equation) that has been reported by your local biochemistry lab where it is available. The ‘calculated eGFR’ is the value (also based on the MDRD equation) calculated from the serum creatinine available on your practice system.
- These two values will usually be very similar, however the ‘lab eGFR’ does not include the correction factor for black ethnicity (and occasionally uses the wrong correction factor for the patients sex). The ‘calculated eGFR’ will not include historical calibration factors that your local laboratory may have used.
- The ‘calculated eGFR’ is the value you should use to decide if someone has CKD. It is this value that is used by the tool to decide if someone has CKD.

What is CKD-Epi and why is it being introduced?

- The CKD-Epi equation is a better estimate of patients’ kidney function when the GFR is around 60mL/min (in the range observed in most patients with CKD in primary care). The 2014 NICE guidance on CKD
https://www.nice.org.uk/guidance/cg182 advises use of this equation rather than the MDRD equation currently being used. It is likely that using the newer equation will mean fewer patients will have an eGFR <60mL/min (leading to fewer patients meeting the threshold for coding with CKD).

- Once biochemistry laboratories across England and Wales start routinely reporting the CKD-Epi eGFR the NCKDA QI tool will also switch to show the eGFR calculated by CKD-Epi. In fact the QI tool will recalculate historical values too, meaning CKD-Epi eGFR values will be available without having to send patients for repeat blood tests.

Why are there two groups of CKD patients on the management screens?

- Patients with CKD along with proteinuria and/or diabetes are at the highest risk of CV events and progressive decline in renal function leading to need for RRT. See https://www.nice.org.uk/guidance/cg182
- Those with diabetes or an ACR >70 should be treated to maintain a tighter BP target of 130/80. These patients, at highest risk, are shown in the top set of graphs and in a separate list entitled ‘diabetes or high levels of proteinuria’.
- Patients with lower levels of proteinuria and without diabetes are shown in a second list. The BP target for this group is 140/90. (Evidence suggests a continuum of risk with increasing levels of proteinuria, so those with ACR values >30 should be considered as higher risk compared to those with absent proteinuria.)

How often should I monitor my patients with CKD?

- NICE guidelines suggest renal function should be monitored (eGFR and ACR) more often when their eGFR is lower but advise the frequency of monitoring should be tailored to the cause of CKD, comorbidities, rate of eGFR decline, treatment changes, intercurrent illness and plans (or not) for RRT. https://www.nice.org.uk/guidance/cg182
- Patients with advanced (pre-dialysis) CKD will be receiving monitoring in, or having monitoring guided by, secondary care (depending on local arrangements).
- The NCKDA QI tool highlights patients with CKD who have not had kidney tests (eGFR and ACR) for more than a year (the maximum interval recommended by NICE).
References


