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Authorised By:	Alex Walster
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Information regarding switch from MDRD to CKD-EPI calculation for eGFR

• Estimated glomerular filtration rate (eGFR) is a calculated GFR approximation expressed in ml/min/1.73 m^2. It is based on the measured creatinine level which assumes that the patient has stable renal function and resembles average patients of their age and gender.

• NICE CKD 2021 guidelines (NG203) recommend using the CKD Epidemiology Collaboration creatinine (CKD-EPI) equation for estimation of GFR. The laboratory has previously used the Modification of Diet in Renal Disease (MDRD) formula. It is widely known that the MDRD equation underestimates GFR, especially in low-risk patients with high-normal serum creatinine levels. This can result in over-diagnosis with the categorisation of people as having CKD who do not have significant renal disease. Using the CKD-EPI equation instead could benefit patients and clinicians by reducing unnecessary appointments, reducing patient concerns and the overall burden of CKD in the population.

• CKD-EPI uses the same variables as the MDRD equation (measured serum creatinine, sex and age), but the CKD-EPI formula studies included both high risk and low risk populations, but the CKD-EPI formula studies included both high risk and low risk populations, making CKD-EPI a more generalised and more accurate estimation compared with MDRD. This is especially important in the relatively high ranges where GFR >60 mls/min. CKD-EPI also performs better in people aged 75 years and over.

• From March 2021, the laboratory will report eGFR using both MDRD and CKD-EPI. The dual reporting is to allow the safe transition to CKD-EPI and this will be for a period of 6 months, after which GFR will be reported using CKD-EPI only. This will allow trend monitoring and is the same as the process undertaken for previous changes to HbA1C reporting.

• The change is expected re-classify CKD stage for some patients. CKD-EPI eGFR still assumes average muscle bulk for patients of that age and gender. Like MDRD, CKD-EPI is not accurate in cachexia or for patients with limb amputations or high muscle bulk.

• It is important to note the reported creatinine measurement at the same time as the new eGFR. If the creatinine has not changed significantly, then true renal function will not usually have altered and any eGFR change can be attributed to the estimation equation. Likewise, a change in creatinine that is significant could be masked by a seemingly stable eGFR.

• For clinical advice regarding individual patients, queries should be directed to the renal team.

Reference: NICE (Aug 2021) chronic kidney disease - Assessment and management (NG203)