VUMC Implementation of the 2021 CKD-EPI eGFRcr Equation

Effective December 7, 2022, VUMC will replace the calculation of estimated glomerular filtration rate (eGFR) from the MDRD equation to the new CKD-EPI 2021 equation, as recommended by the National Kidney Foundation and the American Society of Nephrology (1,2). Like our current MDRD calculation, the CKD-EPI equation does not include a race coefficient.

The eStar display name for eGFR calculated with CKD-EPI is eGFRcr and the eStar BaseName will remain eGFR for smartphases, etc.

eGFRcr (calculated with CKD-EPI equation) will not trend with values calculated using the MDRD equation. eGFRcr will be reported with orders for “Creatinine Lvl”, “Basic Metabolic Panel (BMP)”, “Comprehensive Metabolic Panel (BMP)” and “Renal Pnl”.

Using the new CKD-EPI equation, the reportable range is 0-90 mL/min/1.73 m² vs the old equation, which was 0-60 mL/min/1.73 m². For most patients the CKD-EPI eGFRcr result will be similar, however, for some, the values may differ by more than 10%, particularly at higher values of eGFR and for younger adults (3).

The eGFRcr calculation will not be used for patients <18 years of age. For patients <18 years of age, the Bedside Schwartz equation is still recommended for use: Pediatric GFR Calculator | National Kidney Foundation.

eGFRcr results are interpreted based on clinical context. Clinical practice recommendations suggest ordering Cystatin C as a confirmatory test for patients with eGFRcr of 45-59 mL/min/1.73m² with urine albumin to creatinine ratio <30 mg/g, and in patients for whom the creatinine may be a less reliable indicator of GFR near decision points.

References