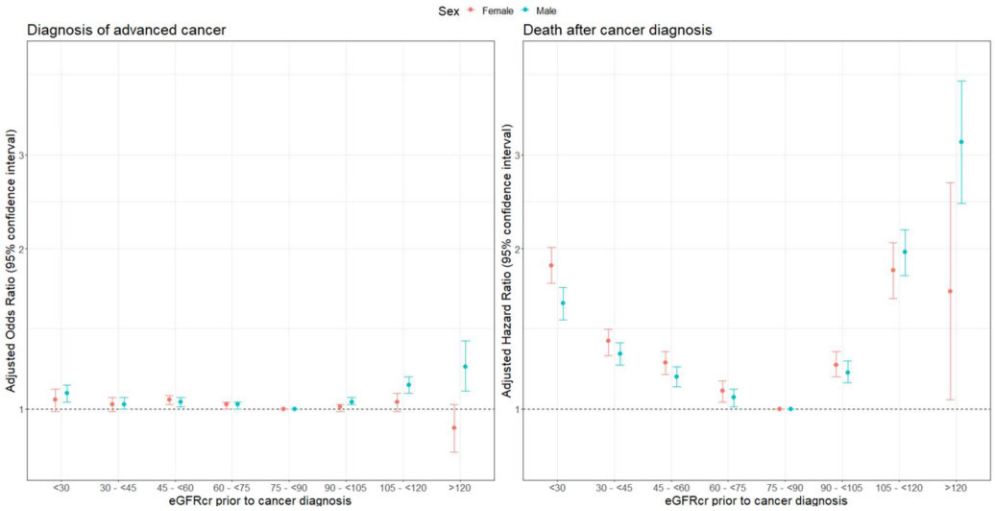

Figure 1: Forest plots of odds of presenting with advanced cancer (left; adjusted for age, smoking status, number of comorbidities, deprivation and cancer site) and hazards of death after cancer diagnosis (right; adjusted for age, smoking status, number of comorbidities, deprivation, cancer site and cancer stage).

#4506

ACCURACY OF NOVEL GFR ESTIMATING EQUATIONS BASED ON CREATININE, CYSTATIN C OR BOTH IN ROUTINE CARE

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Background and Aims: New equations to estimate GFR (eGFR) based on creatinine, cystatin C or both have been developed in the last two years. A comprehensive comparison of their accuracy is currently lacking, particularly in cohorts not involved in their development or validation and among people with comorbid conditions.

Method: We included 6174 adults from the Stockholm Creatinine Measurements (SCREAM) project referred for plasma clearance of iohexol during 2011-2021, in whom we observed 9579 concurrent measurements of creatinine, cystatin C and iohexol clearance. We assessed the performance against measured GFR (mGFR) of eGFR equations proposed by the CKD-EPI collaboration (CKD-EPI 2009, 2012 and 2021), European Kidney Function Consortium (EKFC 2021 and 2023), and the revised Lund-Malmö (2011) and CAPA (2014) equations, which are used in Sweden. Bias was expressed as the median difference in eGFR minus mGFR, with negative biases indicating underestimation of mGFR. P30 described the percentage of individuals with eGFR within 30% of mGFR. Correct classification was defined as agreement of eGFR and mGFR categories using the KDIGO GFR categories. Subgroup analyses were conducted according to age, sex, BMI, eGFR, cancer, cardiovascular disease, diabetes, heart failure and liver disease.

Results: Mean age was 57 years, 46% of participants were female, mean mGFR was 62 mL/min/1.73 m^2 and mean BMI was 26 kg/m^2. Cardiovascular disease was the most common comorbid condition (30%), followed by liver disease (28%), diabetes (26%) and cancer (26%). Equations that used both creatinine and cystatin C had better performance than eGFR using each marker alone, regardless of the equation used; all such equations had small bias and P30 close to 90%. Among creatinine-based equations, CKD-EPI 2009 and CKD-EPI 2021 showed larger overestimates of mGFR than EKFC 2021 and revised Lund-Malmö, with median biases of 5.6, 9.1, 2.7 and 0.2 mL/min/1.73 m^2, respectively (Table 1). There were no meaningful differences in performance across eGFR equations based on cystatin C. Findings were consistent across subgroup analyses stratifying for comorbid conditions (Figure 1).

Conclusion: eGFR equations that combined information on creatinine and cystatin C performed better than equations based on creatinine or cystatin C alone in this Swedish cohort of routine referrals for plasma clearance of iohexol. There was larger variation in the performance of equations based on creatinine than cystatin C.

Table 1: Bias, precision, accuracy and correct classification of different GFR estimating equations.

	Median Bias, mL/min/1.73 m^2 (95% CI)	P_{30}, % (95% CI)	Correct classification, % (95% CI)
Creatinine-based equations			
CKD-EPI 2009	5.6 (5.3-6.0)	74.1 (73.2-75.0)	56.4 (55.4-57.4)
CKD-EPI 2021	9.1 (8.8-9.5)	68.1 (67.2-69.1)	51.8 (50.9-52.8)
EKFC 2021	2.7 (2.5-3.0)	79.5 (78.7-80.3)	58.9 (57.9-59.9)
RLM 2011	0.2 (-0.2-0.4)	82.2 (81.4-82.9)	58.6 (57.6-59.5)
Cystatin C-based equations			
CKD-EPI 2012	−2.6 (−2.9–2.3)	82.5 (81.7-83.3)	58.3 (57.4-59.3)
EKFC 2023 without sex	−3.7 (−4.0–3.4)	83.2 (82.5-84.0)	58.1 (57.2-59.1)
CAPA 2014	−1.1 (−1.4–0.9)	84.5 (83.8-85.2)	60.8 (59.8-61.7)
Creatinine-cystatin C-based equations			
CKD-EPI 2012	0.8 (0.6-1.0)	89.1 (88.4-89.7)	66.7 (65.7-67.6)
CKD-EPI 2021	2.5 (2.3-2.8)	87.6 (86.9-88.2)	66.3 (65.3-67.2)
Mean of EKFC 2021 and 2023	−1.5 (−1.7–1.3)	90.8 (90.2-91.4)	65.8 (64.8-66.7)
Mean of RLM 2011 and CAPA 2014	1.0 (0.8-1.3)	88.5 (87.9-89.2)	66.8 (65.8-67.7)

CAPA = Caucasian, Asian, Pediatric and Adult; CKD-EPI = CKD Epidemiology Collaboration; EKFC = European Kidney Function Consortium; RLM = Revised Lund-Malmö

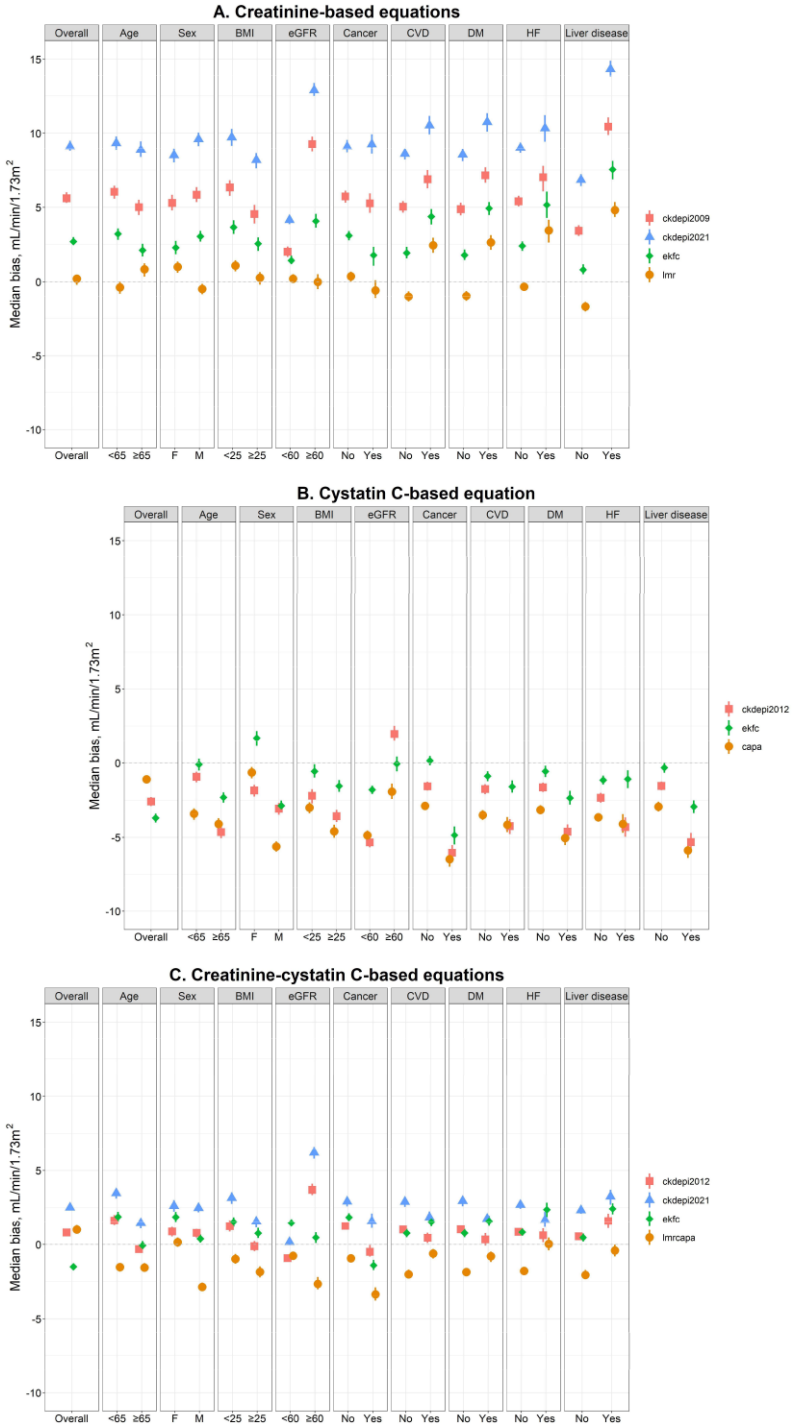

Figure 1: Median bias for GFR estimating equations across subgroups of age, sex, BMI, eGFR, cancer, cardiovascular disease, diabetes, heart failure and liver disease. CAPA = Caucasian, Asian, Pediatric and Adult; CKD-EPI = CKD Epidemiology Collaboration; CVD = cardiovascular disease; DM = diabetes mellitus; EKFC = European Kidney Function Consortium; HF = heart failure; RLM = revised Lund-Malmö.

#4494

DRUG UTILIZATION FOLLOWING INCIDENT CHRONIC KIDNEY DISEASE: AN OBSERVATIONAL STUDY IN THE UNITED STATES AND JAPAN

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Background and Aims: Chronic kidney disease (CKD) affects >840 million individuals worldwide and is a leading cause of morbidity and mortality. Complications include cardiorenal outcomes (e.g. end stage kidney disease and heart failure (HF)) and premature death, which may be preventable with early identification and appropriate treatment of CKD. Treatment of CKD with renin-angiotensin-system inhibitors (RASi) has been the main recommendation of guidelines in the past 20 years, but prescribing rates remain low and discontinuation rates remain high, particularly after adverse events like