Supplementary Table S.1: Distribution of patients in various eGFR categories after calculating eGFR using CKD-EPI 2009 verses 2021 equation and stratified by sex

Male							
CKD-EPI 2009: eGFR categories	**CKD-EPI 2021: eGFR categories**						
	G1	**G2**	**G3a**	**G3b**	**G4**	**G5**	**Total**
G1 (≥90)	128 [100%]	0	0	0	0	0	128 (2%)
G2 (60-89)	49 [14%]	300 [86%]	0	0	0	0	349 (6%)
G3a (45-59)	0	137 [21%]	511 [79%]	0	0	0	648 (11%)
G3b (30-44)	0	0	327 [18%]	1476 [82%]	0	0	1803 (30%)
G4 (15-29)	0	0	0	487 [19%]	2073 [81%]	0	2560 (42%)
G5 (<15)	0	0	0	0	173 [30%]	397 [70%]	570 (9%)
Total	177 (3%)	437 (7%)	838 (14%)	1963 (32%)	2246 (37%)	397 (7%)	6058

Female							
CKD-EPI 2009: eGFR categories	**CKD-EPI 2021: eGFR categories**						
	G1	**G2**	**G3a**	**G3b**	**G4**	**G5**	**Total**
G1 (≥90)	234 [100%]	0	0	0	0	0	234 (4%)
G2 (60-89)	37 [11%]	304 [89%]	0	0	0	0	341 (6%)
G3a (45-59)	0	74 [13%]	476 [87%]	0	0	0	550 (10%)
G3b (30-44)	0	0	206 [12%]	1583 [88%]	0	0	1789 (32%)
G4 (15-29)	0	0	0	359 [16%]	1851 [84%]	0	2210 (40%)
G5 (<15)	0	0	0	0	106 [25%]	316 [75%]	422 (8%)
Total	271 (5%)	378 (7%)	682 (12%)	1942 (35%)	1957 (35%)	316 (6%)	5546

Supplementary Table S.2: Results from the Fine and Gray sub-distribution hazard model for the competing event outcome of death before kidney failure

Cohort based on 2009 CKD-EPI equation	Reclassification by 2021 CKD-EPI equation	Hazard ration and 95% confidence interval for the competing outcome of death before kidney failure	
		Unadjusted	Adjusted*
All (n=11604)	Reclassified to a category with higher eGFR	0.91 (0.80, 1.05)	0.85 (0.74, 0.97)
eGFR<30 ml/min/1.73 m2 (n=5762)	Reclassified to ≥30 ml/min/1.73 m2	0.82 (0.70, 0.97)	0.79 (0.67, 0.92)
eGFR ≤25 ml/min/1.73 m2 (n=3991)	Reclassified to >25 ml/min/1.73 m2	0.97 (0.81, 1.16)	0.83 (0.69, 0.97)
KFRE >40% (n=845)	Reclassified to KFRE ≤40%	1.29 (0.87, 1.93)	0.92 (0.61, 1.40)

*Adjusted for age, sex, race, cause and vintage of CKD, baseline co-morbidities including diabetes, CVD-related comorbidities, respiratory diseases and cancer, baseline usage of immunosuppressive medication, Renin-angiotensin-aldosterone system inhibitors (RAASi; Angiotensin-converting-enzyme inhibitors and Angiotensin receptor blockers) and Sodium-glucose cotransporter-2 (SGLT2) inhibitors.

Supplementary Table S.3: Concordance on KFRE-2 risk score when eGFR from CKD-EPI 2009 and CKD-EPI 2021 was used in the equation (sensitivity analysis after including patients with imputed UACR, N = 11,604)

KFRE-2 score by eGFR from CKD-EPI 2009 equation	KFRE-2 risk score by eGFR from CKD-EPI 2021 equation				
	0-10%	10-20%	20-40%	>40%	Total
0-10%	8232 [100%]	0	0	0	8232
10-20%	464 [35%]	847 [65%]	0	0	1311
20-40%	0	308 [28%]	808 [72%]	0	1116
>40%	0	0	150 [16%]	795 [84%]	945
Total	8696	1155	958	795	11604

Supplementary Table S.4: Difference in eGFR obtained from CKD-EPI 2009 versus 2021 equations (sensitivity analysis including contemporary cohort of CKD patients registered in PROMIS as of March 31, 2023, N = 16,037)

Age group	Male					Female				
	Number of patients	eGFR, Mean (SD)		Difference, Mean (SD)		Number of patients	eGFR, Mean (SD)		Difference, Mean (SD)	
		CKD-EPI 2009	CKD-EPI 2021	CKD-EPI 2021 – CKD-EPI 2009	p-value		CKD-EPI 2009	CKD-EPI 2021	CKD-EPI 2021 - CKD-EPI 2009	p-value
Overall	8579	35.96 (21.03)	39.11 (22.06)	3.15 (1.30)	<0.0001	7458	38.14 (23.72)	40.66 (24.39)	2.52 (1.03)	<0.0001
19-29	151	83.46 (39.00)	86.52 (39.81)	3.06 (1.29)	<0.0001	137	83.01 (38.36)	84.81 (38.70)	1.80 (0.94)	<0.0001
30-39	272	64.57 (33.38)	67.90 (34.63)	3.33 (1.46)	<0.0001	303	75.89 (35.48)	78.15 (35.97)	2.25 (1.05)	<0.0001
40-49	413	54.62 (31.28)	57.93 (32.56)	3.32 (1.79)	<0.0001	428	62.21 (34.07)	64.73 (34.93)	2.52 (1.18)	<0.0001
50-59	743	42.72 (24.19)	45.90 (25.61)	3.18 (1.51)	<0.0001	655	48.65 (27.46)	51.25 (28.50)	2.60 (1.23)	<0.0001
60-69	1593	37.70 (18.77)	40.94 (20.12)	3.24 (1.38)	<0.0001	1298	37.49 (19.78)	39.99 (20.85)	2.51 (1.10)	<0.0001
70-79	2799	32.36 (14.55)	35.50 (15.76)	3.14 (1.24)	<0.0001	2317	32.95 (14.64)	35.50 (15.59)	2.55 (0.97)	<0.0001
80-89	2204	28.80 (11.39)	31.88 (12.49)	3.08 (1.11)	<0.0001	1903	29.08 (11.99)	31.62 (12.91)	2.54 (0.93)	<0.0001
≥90	404	24.69 (10.15)	27.55 (11.22)	2.86 (1.08)	<0.0001	417	27.06 (11.19)	29.65 (12.14)	2.59 (0.96)	<0.0001

Supplementary Figure 1: Distribution of patients in various KDIGO risk categories by eGFR calculated using CKD-EPI 2009 verses 2021 equation (sensitivity analysis after including patients with imputed UACR, N = 11,604)

(a) KDIGO heat map using eGFR from CKD-Epi 2009 equation

CGA Stage		ACR (mg/mmol) categories			
		<3 Normal to mildly increased	3-30 Moderately increased	>30 Severely increased	Total
CKD-EPI SCr 2009: GFR Staging	G1	89	123	150	362
	G2	193	277	220	690
	G3a	409	498	291	1198
	G3b	1132	1587	873	3592
	G4	930	2009	1831	4770
	G5	37	289	666	992
	Total	2790	4783	4031	11604

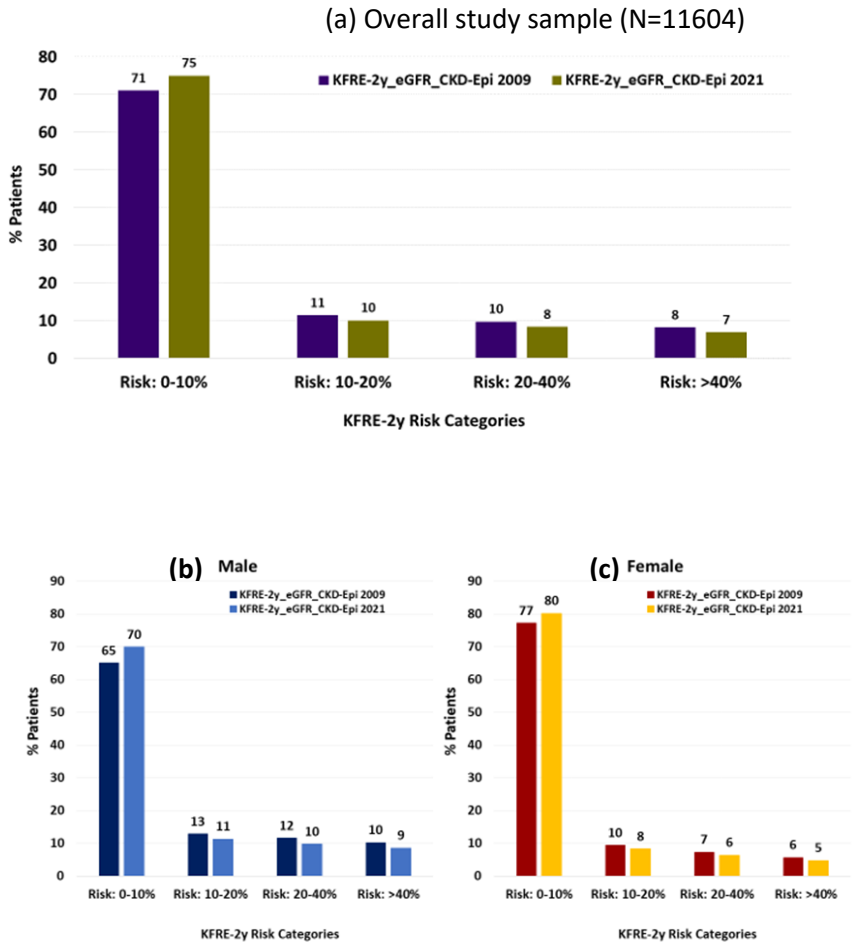
(b) KDIGO heat map using eGFR from CKD-Epi 2021 equation

CGA Stage		ACR (mg/mmol) categories			
		<3 Normal to mildly increased	3-30 Moderately increased	>30 Severely increased	Total
CKD-EPI SCr 2021: GFR Staging	G1	110	157	181	448
	G2	231	346	238	815
	G3a	519	655	346	1520
	G3b	1203	1695	1007	3905
	G4	704	1725	1774	4203
	G5	23	205	485	713
	Total	2790	4783	4031	11604

(c) Re-classification in KDIGO heat map using eGFR from CKD-Epi 2009 versus 2021 equation

Risk category based on CKD-EPI 2009	Risk category based on CKD-EPI 2021				
	Low	Moderate	High	Very high	Total
Low	282	0	0	0	282 (2%)
Moderate	59 (7%)	750 (93%)	0	0	809 (7%)
High	0	272 (14%)	1728 (86%)	0	2000 (17%)
Very high	0	0	549 (6%)	7964 (94%)	8513 (74%)
Total	341 (3%)	1022 (9%)	2277 (19%)	7964 (69%)	11604

Supplementary Figure 2: Distribution of KFRE 2-year risk calculated using eGFR from CKD-EPI 2009 versus CKD-EPI 2021 equations (sensitivity analysis after including patients with imputed UACR, N = 11,604)



Modified STROBE Statement—checklist of items that should be included in reports of observational studies (Cohort/Cross-sectional and case-control studies)

	Item No	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract: Page 1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found: Page 2
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported: Page 3
Objectives	3	State specific objectives, including any prespecified hypotheses: Page 3
Methods		
Study design	4	Present key elements of study design early in the paper: Page 3
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection: Page 3-5
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up: Page 3-5 *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable: Page 3-6
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement).: Page 3-5
Bias	9	Describe any efforts to address potential sources of bias: Page 5-6
Study size	10	Explain how the study size was arrived at (if applicable): Figure 1
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why: Page 5-6
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding: Page 5-6
		(*b*) Describe any methods used to examine subgroups and interactions: Page 5-6

		(*c*) Explain how missing data were addressed: Page 6
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed: N/A *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy
		(*e*) Describe any sensitivity analyses: Page 5-6
Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analyzed: Page 6-7
		(c) **Use of a flow diagram**: Figure 1
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders: Page 6-7
		(b) Indicate number of participants with missing data for each variable of interest: Page 6
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount): Page 7
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time: Page 6-9
		Case-control study—Report numbers in each exposure category, or summary measures of exposure
		Cross-sectional study—Report numbers of outcome events or summary measures
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included: Page 8, Figure 3
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses: Page 8-9
Discussion		
Key results	18	Summarise key results with reference to study objectives: Page 10

Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias: Page 11-12
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence: Page 12
Generalisability	21	Discuss the generalisability (external validity) of the study results: Page 11-12

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.