

SUPPLEMENTAL MATERIAL

Development and Validation of a Pragmatic Electronic Phenotype for CKD

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Supplemental Table 1: eGFR and UACR LOINC Codes Used in the NKDEP ePhenotype for CKD

LOINC Code	Description
eGFR	
33914-3	Glomerular filtration rate/1.73 sq M.predicted [Volume Rate/Area] in Serum or Plasma by Creatinine-based formula (MDRD)
48642-3	Glomerular filtration rate/1.73 sq M predicted among non-blacks [Volume Rate/Area] in Serum or Plasma by Creatinine-based formula (MDRD)
48643-1	Glomerular filtration rate/1.73 sq M predicted among blacks [Volume Rate/Area] in Serum or Plasma by Creatinine-based formula (MDRD)
50044-7	Glomerular filtration rate/1.73 sq M predicted among females [Volume Rate/Area] in Serum or Plasma by Creatinine-based formula (MDRD)
50210-4	Glomerular filtration rate/1.73 sq M.predicted [Volume Rate/Area] in Serum or Plasma by Cystatin-based formula
62238-1	Glomerular filtration rate/1.73 sq M.predicted [Volume Rate/Area] in Serum or Plasma by Creatinine-based formula (CKD-EPI)
69405-9	Glomerular filtration rate/1.73 sq M.predicted [Volume Rate/Area] in Serum or Plasma
70969-1	Glomerular filtration rate/1.73 sq M predicted among males [Volume Rate/Area] in Serum or Plasma by Creatinine-based formula (MDRD)
76633-7	Glomerular filtration rate/1.73 sq M. predicted by Creatinine-based formula (MDRD) in Blood
77147-7	Glomerular filtration rate/1.73 sq M.predicted [Volume Rate/Area] in Serum, Plasma or Blood by Creatinine-based formula (MDRD)
UACR	
44292-1	Microalbumin/Creatinine [Mass Ratio] in 12 hour Urine
14958-3	Microalbumin/Creatinine [Mass Ratio] in 24 hour Urine
14959-1	Microalbumin/Creatinine [Mass Ratio] in Urine
77254-1	Microalbumin/Creatinine [Ratio] in 24 hour Urine by Detection limit <= 1.0 mg/L
59159-4	Microalbumin/Creatinine [Ratio] in 24 hour Urine
77253-3	Microalbumin/Creatinine [Ratio] in Urine by Detection limit <= 1.0 mg/L
30000-4	Microalbumin/Creatinine [Ratio] in Urine
30001-2	Microalbumin/Creatinine [Ratio] in Urine by Test strip
14585-4	Albumin/Creatinine [Molar ratio] in Urine
13705-9	Albumin/Creatinine [Mass Ratio] in 24 hour Urine
9318-7	Albumin/Creatinine [Mass Ratio] in Urine
14585-4	Albumin/Creatinine [Molar ratio] in Urine
76401-9	Albumin/Creatinine [Ratio] in 24 hour Urine
32294-1	Albumin/Creatinine [Ratio] in Urine
UPCR	
60678-0	Protein/Creatinine [Mass Ratio] in 12 hour Urine

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13801-6	Protein/Creatinine [Mass Ratio] in 24 hour Urine
2890-2	Protein/Creatinine [Mass Ratio] in Urine
40486-3	Protein/Creatinine [Ratio] in 24 hour Urine
34366-5	Protein/Creatinine [Ratio] in Urine
UA Dipstick	
50949-7	Albumin [Presence] in Urine by Test strip
20621-9	Albumin/Creatinine [Presence] in Urine by Test strip
11218-5	Microalbumin [Mass/volume] in Urine by Test strip
30001-2	Microalbumin/Creatinine [Ratio] in Urine by Test strip

Supplemental Table 2: Dialysis Codes Used in the NKDEP ePhenotype for ESKD

Dialysis Codes	Description
CPT codes	
3066F	Documentation of treatment for nephropathy
36800, 36810, 36815	Insertion of cannula for hemodialysis, other purpose...
36818 - 36820	Arteriovenous anastomosis, open...
36821, 36831	Thrombectomy, open, arteriovenous fistula...
36832, 36833	Revision, open, arteriovenous fistula...
90935, 90937	Hemodialysis procedure with single evaluation...
90940	Hemodialysis access flow study to determine blood flow...
90945, 90947	Dialysis procedure other than hemodialysis...
90951 - 90962	ESRD related services monthly...
90963 - 90966	ESRD related services for home dialysis per full month...
90967 - 90970	ESRD related services for dialysis less than a full month...
90989, 90993	Dialysis training, patient, including helper...
90997	Hemoperfusion
90999, 99512	Unlisted dialysis procedure, inpatient or outpatient...
G0257	Unscheduled or emergency dialysis treatment for an ESRD...
G9231	Documentation of ESRD, dialysis, renal transplant...
S2065	Simultaneous pancreas kidney transplantation...
S9339	Home therapy; peritoneal dialysis, administrative...
36145	Introduction of needle or intracatheter; arteriovenous shunt created for dialysis...
36147	Introduction of needle and/or catheter, arteriovenous shunt created for dialysis...
90918 - 90921	ESRD related services per full month...
90925	ESRD related services (less than full month)...
G0308 – G0319	ESRD related services during the course of treatment...
G0320 – G0323	ESRD related services for home dialysis patients per full month...
G0324 – G0327	ESRD related services for home dialysis (less than full month)...
G0392, G0393	Transluminal balloon angioplasty, percutaneous; for maintenance of hemodialysis access...
ICD-9 Codes	
38.95	Venous catheterization for renal dialysis
39.27	Arteriovenostomy for renal dialysis
39.42	Revision of arteriovenous shunt for renal dialysis
39.53	Repair of arteriovenous fistula
39.54	Re-entry operation (aorta)
39.95	Hemodialysis

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54.98	Peritoneal dialysis
585.6	End stage renal disease
V45.11	Renal dialysis status
V45.12	Noncompliance with renal dialysis
V56.0	Encounter for extracorporeal dialysis
V56.1	Fitting and adjustment of extracorporeal dialysis catheter
V56.2	Fitting and adjustment of peritoneal dialysis catheter
V56.31	Encounter for adequacy testing for hemodialysis
V56.32	Encounter for adequacy testing for peritoneal dialysis
V56.8	Encounter for other dialysis
V45.1	Postprocedural; renal dialysis status
ICD-10 Codes	
N18.6	End stage renal disease
Z49	Encounter for care involving renal dialysis
Z91.15	Patient's noncompliance with renal dialysis
Z99.2	Dependence on renal dialysis

Supplemental Table 3: Transplant Codes Used in the NKDEP ePhenotype for ESKD

Transplant Code	Description
CPT Codes	
00868	Anesthesia for extraperitoneal procedures in lower abdomen, including urinary tract; renal transplant (recipient) (units: 10)
50340	Recipient nephrectomy (separate procedure)
50360, 50365	Renal allotransplantation; implantation of graft...
50380	Renal autotransplantation, reimplantation of kidney
ICD-9 Codes	
00.91	Transplant from live related donor...
00.92	Transplant from live non-related donor...
00.93	Transplant from cadaver...
55.51	Nephroureterectomy
55.52	Nephrectomy of remaining kidney
55.53	Removal of transplanted or rejected kidney
55.54	Bilateral nephrectomy
55.61	Renal autotransplantation
55.69	Other kidney transplantation
V42.0	Transplant; kidney
Z94.0	Kidney transplant status
ICD-10 Codes	
0TY****	Surgical or Medical / Urinary System / Transplantation / Kidney

Supplemental Table 4: Characteristics of the Christiana Health Care System Population

	Total Population		Group 1: No eGFR		Group 2: eGFR >= 60		Group 3: eGFR 45-60		Group 4: eGFR 30-45		Group 5: eGFR 15-30		Group 6: eGFR < 15	
	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD
Number	380,190		152,954		198,087		16,429		7279		3,327		,114	
Age, years	50	19	44	18	52	17	71	15	74	14	73	15	65	15
Female	228,815	60%	93382	61%	118,826	60%	9,534	58%	4299	59%	1,818	55%	956	45%
Black	87,976	23%	31917	21%	50,002	25%	2,893	18%	1408	19%	818	25%	938	44%
Num eGFR measurements	5	7	N/A	N/A	4	6	7	9	9	11	10	12	12	17
Days to most recent eGFR	537	549	N/A	N/A	554	554	435	522	391	463	415	463	425	466
Prior eGFR <60	22,604	6%	N/A	N/A	6051	3%	7,413	45%	5009	69%	2,480	75%	1651	78%
Prior GFR <60 90+d prior	20,349	5%	N/A	N/A	5446	3%	6,658	41%	4496	62%	2,229	67%	1520	72%
Any UACR, UPCR, or UA	122,696	32%	20,899	14%	88,006	44%	7,312	45%	3661	50%	1,806	54%	1012	48%
Any UACR	30,911	8%	111	0.1%	24,700	13%	3,318	20%	1722	24%	733	22%	327	16%
Num UACR measurements	2.8	2.3	1.2	0.8	2.7	2.2	3.3	2.6	3.4	2.9	2.9	2.6	2.4	2.3
Most recent UACR:														
a <30mg/g	22,958	76%	85	77%	19,793	80%	2,079	63%	804	47%	172	24%	25	8%
b 30 to 300mg/g	5892	20%	22	19%	4121	17%	896	27%	572	33%	219	30%	62	19%
c >300mg/g	2061	7%	4	4%	786	3%	343	10%	346	20%	342	47%	240	73%
Any UPCR	6218	2%	122	0.1%	4010	2%	633	4%	645	9%	538	16%	270	13%
Num UPCR measurements	3.0	6.6	1.3	0.6	2.3	5.0	4.7	9.9	5.0	9.4	4.0	7.2	4.3	8.2
Most recent UPCR:														
a <150mg/g	2833	46%	61	50%	2111	53%	322	51%	234	36%	88	16%	17	6%
b 150 to 500mg/g	1711	28%	31	25%	1177	29%	144	23%	195	30%	135	25%	29	11%
c >500mg/g	1674	27%	30	24%	722	18%	167	26%	216	34%	315	59%	224	83%
Any UA	94,260	25%	20156	13%	66,319	34%	4,499	27%	2016	28%	836	25%	434	21%
Num UA measurements	2.5	3.2	2.4	3.0	2.6	3.2	2.4	3.0	2.27	2.7	2.1	2.2	1.97	1.92
Most recent UA:														
a Neg	62,342	66%	13864	69%	44,598	67%	2,621	58%	940	47%	263	32%	56	13%
b Trace to 30 (Trace, 1+)	22,234	24%	4691	23%	15,583	24%	1,159	26%	554	28%	192	23%	55	13%
c 100 to >300 (2+, 3+, 4+)	9395	10%	1585	8%	5965	9%	691	15%	493	25%	354	42%	307	71%
Dialysis	2716	0.7%	131	0.1%	357	0.2%	159	1%	213	3%	459	14%	1397	66%
Transplant	635	0.2%	25	0.02%	216	0.1%	101	0.6%	115	2%	80	2%	98	5%

Supplemental Table 5: Characteristics of the Columbia University Population

	Total Population		Group 1: No eGFR		Group 2: eGFR >= 60		Group 3: eGFR 45-60		Group 4: eGFR 30-45		Group 5: eGFR 15-30		Group 6: eGFR < 15	
	N	% / SD	N	% /SD	N	% / SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD
Number	338,868		107,977		196,364		18,902		8819		3760		3046	
Age, years	49	20	40	18	50	18	72	13	74	13	72	15	62	16
Female	202,289	60%	65,274	61%	119,481	61%	9860	52%	4456	51%	1873	50%	1345	44%
Black	27,687	8%	7595	7%	17,035	9%	1326	7%	751	9%	427	11%	553	18%
Num eGFR measurements	9	28	N/A	N/A	10	23	25	44	40	66	55	77	59	95
Days to most recent eGFR	665	1152	N/A	N/A	720	1209	388	753	286	529	262	484	389	591
Prior eGFR <60	28,120	8%	N/A	N/A	4923	3%	10,109	54%	7386	84%	3323	88%	2379	78%
Prior GFR <60 at least 90d prior	16,656	5%	N/A	N/A	2671	1%	5573	30%	4306	49%	2332	62%	1774	58%
Any UACR, UPCR, or UA	176,656	52%	17,876	17%	132,779	68%	13,734	73%	6846	78%	3116	83%	2305	76%
Any UACR	18,139	5%	101	0.1%	11,810	6%	2811	15%	1818	21%	987	26%	612	20%
Num UACR measurements	0.2	1.2	0.0	0.0	0.2	1.2	0.6	2.3	0.9	3.0	1.0	3.2	0.6	2.2
Most recent UACR:														
a <30mg/g	12,121	67%	63	62%	9119	77%	1786	64%	854	47%	247	25%	52	9%
b 30 to 300mg/g	4068	22%	26	26%	2184	19%	763	27%	628	35%	338	34%	129	21%
c >300mg/g	1950	11%	12	12%	507	4%	262	9%	336	19%	402	41%	431	70%
Any UPCR	21,375	6%	289	0.3%	12,617	6%	2975	16%	2614	30%	1682	45%	1198	39%
Num UPCR measurements	0.2	1.7	0.0	0.1	0.2	1.6	0.5	2.5	1.1	3.9	2.0	5.4	2.0	5.8
Most recent UPCR:														
a <150mg/g	10,270	48%	207	72%	7238	57%	1496	50%	995	38%	290	17%	44	4%
b 150 to 500mg/g	6122	29%	44.0	15%	3650	29%	896	30%	869	33%	520	31%	143	12%
c >500mg/g	4983	23%	38	13%	1729	14%	583	20%	750	29%	872	52%	1011	84%
Any UA	173,419	51%	17,659	16%	130,353	66%	13,420	71%	6691	76%	3025	81%	2271	75%
Num UA measurements	2.5	6.2	0.3	1.0	3.2	6.6	4.7	8.8	6.2	10.2	7.7	12.4	6.9	12.6
Most recent UA:														

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a Neg	133,323	77%	14,188	80%	103,959	80%	9733	73%	4096	61%	1157	38%	190	8%
b Trace to 30 (Trace, 1+)	27,620	16%	2745	16%	20,003	15%	2395	18%	1405	21%	736	24%	336	15%
c 100 to >300 (2+, 3+, 4+)	12,476	7%	726	4%	6391	5%	1292	10%	1190	18%	1132	37%	1745	77%
Dialysis	4575	1%	58	0.1%	715	0.4%	596	3%	672	8%	644	17%	1890	62%
Transplant	2942	0.9%	6	0.0%	851	0.4%	670	4%	684	8%	389	10%	342	11%
Diabetes	29,614	9%	1159	1%	20,413	10%	3499	19%	2391	27%	1255	33%	897	29%
Hypertension	47,658	14%	397	0.4%	33,054	17%	7522	40%	4064	46%	1658	44%	963	32%

Supplemental Table 6: Characteristics of the University of California, San Francisco Population

	Total Population		Group 1: No eGFR		Group 2: eGFR >= 60		Group 3: eGFR 45-60		Group 4: eGFR 30-45		Group 5: eGFR 15-30		Group 6: eGFR < 15	
	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD
Number	311,122		184,317		112,237		8411		3497		1474		1186	
Age, years	51 (n=311,087)	18	48 (n=184,291)	18	53 (n=112,231)	17	70	14	71 (n=3495)	15	68	16	59	16
Female	179,455	58%	109,822	60%	62,429	56%	4173	50%	1786	51%	735	50%	510	43%
Black	16,181	5%	7195	4%	7730	7%	560	7%	294	8%	165	11%	237	20%
Num eGFR measurements	4	15	N/A	N/A	9	19	17	29	25	38	29	39	32	44
Days to most recent eGFR	572	696	N/A	N/A	585	701	511	685	435	622	387	576	420	559
Prior eGFR <60	23,902	8%	N/A	N/A	12,550	11%	6035	72%	2993	86%	1301	88%	1023	86%
Prior GFR <60 at least 90d prior	11,840	5%	N/A	N/A	4520	4%	3730	44%	2061	59%	870	59%	659	56%
Any UACR, UPCR, or UA	62,850	20%	7294	4%	46,416	41%	4980	59%	2384	68%	1064	72%	712	60%
Any UACR	8966	3%	392	0.2%	6208	6%	1145	14%	681	20%	337	23%	203	17%
Num UACR measurements	3.5	4.3	2.0	1.5	3.2	3.6	4.1	5.0	4.7	5.4	6.5	7.7	5.4	6.6
Most recent UACR:														
a <30mg/g	6293	70%	338	86%	4833	78%	720	63%	312	46%	77	23%	13	6%
b 30 to 300mg/g	1817	20%	38	10%	1073	17%	315	28%	233	34%	117	35%	41	20%
c >300mg/g	856	10%	16	4%	302	5%	110	10%	136	20%	143	42%	149	73%
Any UPCR	11,716	4%	228	0.1%	7484	7%	1635	19%	1212	35%	720	49%	437	37%
Num UPCR measurements	3.7	5.2	2.7	6.3	3.2	4.9	4.1	5.2	4.6	5.5	5.6	6.3	5.3	5.8
Most recent UPCR:														
a <150mg/g	4878	42%	122	54%	3623	48%	684	42%	364	30%	74	10%	11	3%
b 150 to 500mg/g	4211	36%	62	27%	2822	38%	617	38%	451	37%	204	28%	55	13%
c >500mg/g	2627	22%	44	19%	1039	14%	334	20%	397	33%	442	61%	371	85%
Any UA	57,547	19%	6984	4%	42,256	38%	4572	54%	2164	62%	932	63%	639	54%
Num UA measurements	3.3	5.7	1.8	2.7	3.1	5.3	4.4	6.8	5.5	8.5	6.5	9.2	9.0	14.7
Most recent UA:														
a Neg	48,173	84%	6036	86%	36,723	87%	3454	76%	1390	64%	432	46%	138	22%
b Trace to 30 (Trace, 1+)	8396	15%	841	12%	5117	12%	1004	22%	690	32%	410	44%	334	52%
c 100 to >300 (2+, 3+, 4+)	978	2%	107	2%	416	1%	114	3%	84	4%	90	10%	167	26%
Dialysis	11,517	4%	3316	2%	2766	3%	1773	21%	1525	44%	1020	69%	1117	94%
Transplant	4646	2%	541	0.3%	2105	2%	865	10%	574	16%	304	21%	257	22%

Supplemental Table 7: Characteristics of the University of Minnesota Population

	TOTAL POPULATION		Group 1: No eGFR		Group 2: eGFR >= 60		Group 3: eGFR 45-60		Group 4: eGFR 30-45		Group 5: eGFR 15-30		Group 6: eGFR < 15	
	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD
Number	650,154		238,989		367,115		29,705		9498		2,845		2,002	
Age, years	49	18	44	17	50	17	70	14	74	14	70	16	60	16
Female	375,510	8%	140,669	59%	208,504	57%	18,070	61%	5811	61%	1,569	55%	887	44%
Black	43,371	7%	14,972	6%	26,969	7%	697	2%	264	3%	171	6%	297	15%
Num eGFR measurements	9	18	N/A	N/A	7	14	17	28	28	43	37	54	34	63
Days to most recent eGFR	716	907	N/A	N/A	741	915	526	822	411	693	462	742	770	1012
Prior eGFR <60	80,610	12%	N/A	N/A	46102	13%	21,954	74%	8509	90%	2512	88%	1533	77%
Prior GFR <60 at least 90d prior	73,634	11%	N/A	N/A	41979	11%	20222	68%	7828	82%	2267	80%	1338	67%
Any UACR, UPCR, or UA	320,068	49%	37,952	16%	247,014	67%	23,008	78%	8023	85%	2494	88%	1,577	79%
Any UACR	61,080	9%	277	0.1%	45,918	13%	8888	30%	4049	43%	1273	45%	675	34%
Num UACR measurements	3	2.7	1.4	1.1	2.9	2.5	3.4	2.9	3.9	3.3	4.0	3.6	3.3	4.3
Most recent UACR:														
a <30mg/g	44,515	73%	221	80%	36,082	79%	,827	66%	2027	50%	322	25%	36	5%
b 30 to 300mg/g	12,561	21%	42	15%	8250	18%	2329	26%	1361	34%	452	36%	127	19%
c >300mg/g	4004	7%	14	5%	1586	4%	732	8%	661	16%	499	39%	512	76%
Any UPCR	18,092	3%	258	0.1%	11,232	3%	2717	9%	2012	21%	1109	39%	764	38%
Num UPCR measurements	3.7	6.2	1.4	1.0	2.9	4.9	4.4	6.3	5.4	10.0	5.8	7.7	4.9	6.7
Most recent UPCR:														
a <150mg/g	8,197	45%	108	42%	5789	52%	1388	51%	713	35%	168	15%	31	4%
b 150 to 500mg/g	5984	33%	108	42%	3888	35%	860	32%	713	35%	340	31%	75	10%
c >500mg/g	3911	22%	42	16%	1555	14%	469	17%	586	29%	601	54%	658	86%
Any UA	307,324	47%	37,732	16%	236,288	64%	21,767	73%	7625	80%	2385	84%	1527	76%
Num UA measurements	4	5.7	2.3	3.2	4.1	5.7	5.1	6.8	6.3	7.8	7.1	9.4	5.9	9.9
Most recent UA:														
a Neg	251,592	82%	30,861	82%	197,657	84%	16,768	77%	5062	66%	1093	46%	151	10%
b Trace to 30 (Trace, 1+)	41,182	13%	5091	14%	30,159	13%	3502	16%	1602	21%	568	24%	260	17%
c 100 to >300 (2+, 3+, 4+)	14,550	5%	1780	5%	8472	4%	1497	7%	961	13%	724	30%	1116	73%
Dialysis	4217	0.6%	183	0.1%	780	0.2%	556	2%	454	5%	614	22%	1630	81%
Transplant	2973	0.5%	94	0.04%	919	0.3%	723	2%	574	6%	331	12%	332	17%
Diabetes	58,224	9%	4343	2%	41,273	11%	6848	23%	3439	36%	1330	47%	991	50%
Hypertension	163,280	25%	9675	4%	121,556	33%	20,075	68%	7781	82%	2464	87%	1729	86%

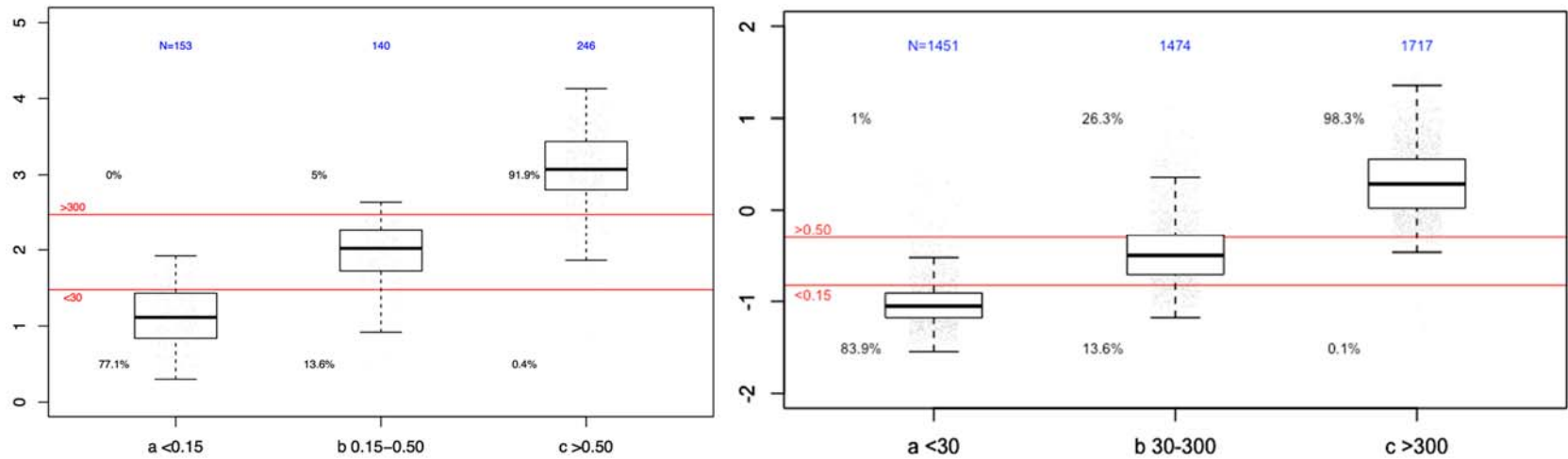
Supplemental Table 8: Characteristics of the University of Utah Population

	TOTAL POPULATION		Group 1: No eGFR		Group 2: eGFR >= 60		Group 3: eGFR 45-60		Group 4: eGFR 30-45		Group 5: eGFR 15-30		Group 6: eGFR < 15	
	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD	N	% /SD
Number	401,683		255,986		127,410		10,901		4952		1603		822	
Age, years	48	19	46	19	49	17	70	13	73	13	71	15	60	15
Female	223,211	56%	140,387	55%	72,558	57%	6249	5%	2802	57%	859	54%	351	43%
Black	6527	2%	3802	2%	2531	2%	91	0.8%	51	1%	22	1%	30	4%
Num eGFR measurements	2	5	0	0	4	7	7	12	10	14	11	15	11	17
Days to most recent eGFR	457	535	NA	NA	476	546	369	460	262	361	226	337	359	512
Prior eGFR <60	22863	6%	NA	NA	10186	8%	6703	62%	4008	81%	1344	84%	613	75%
Prior GFR <60 at least 90d prior	21,008	5%	NA	NA	9333	7%	6160	57%	3698	75%	1243	78%	573	70%
Any UACR, UPCR, or UA	129,192	32%	44,223	17%	71,721	56%	7271	67%	3875	78%	1397	87%	699	85%
Any UACR	21,160	5%	1370	0.5%	14,222	11%	2596	24%	1954	40%	743	46%	273	33%
Num UACR measurements	0.1	0.8	0	0.2	0.3	1.1	0.7	1.8	1.4	2.3	1.7	2.7	1.0	2.1
Most recent UACR:														
a <30mg/g	15,250	72%	1066	78%	11,188	79%	1727	67%	1036	53%	212	29%	20	7%
b 30 to 300mg/g	4299	20%	229	17%	2477	17%	660	25%	626	32%	254	34%	53	19%
c >300mg/g	1611	8%	75	6%	557	4%	209	8%	292	15%	277	37%	200	73%
Any UPCR	10,730	3%	1013	0.4%	6303	5%	1285	12%	1175	24%	624	39%	329	40%
Num UPCR measurements	0.1	1.0	0.0	0.1	0.1	1.0	0.4	2.1	0.9	3.0	1.5	3.8	2.3	11.0
Most recent UPCR:														
a <150mg/g	4754	44%	340	34%	2994	48%	710	55%	514	44%	160	26%	35	11%
b 150 to 500mg/g	3924	37%	393	39%	2490	40%	390	30%	411	35%	199	32%	41	13%
c >500mg/g	2052	19%	280	28%	819	13%	185	14%	250	21%	265	43%	253	77%
Any UA	121,829	30%	43,261	17%	66,545	52%	6594	61%	3471	70%	1283	80%	670	82%
Num UA measurements	1	3.6	0.3	1.2	2	4.8	3.3	7.8	4.5	9.6	5.6	10.5	6.8	16.5
Most recent UA:														
a Neg	94,182	77%	32,804	76%	53,668	81%	4848	74%	2229	64%	571	45%	59	9%
b Trace to 30 (Trace, 1+)	19,438	16%	7583	18%	9576	14%	1166	18%	726	21%	300	23%	86	13%
c 100 to >300 (2+, 3+, 4+)	8209	7%	2874	7%	3301	5%	580	9%	516	15%	412	32%	525	78%
Dialysis	3741	0.9%	874	0.3%	,078	0.8%	434	4%	394	8%	322	20%	638	78%
Transplant	1569	0.4%	144	0.1%	727	0.6%	340	3%	219	4%	78	5%	60	7%
Diabetes	43,122	11%	15,724	6%	20,599	16%	3241	30%	2206	45%	845	53%	506	62%
Hypertension	93,805	23%	33,301	13%	46,166	36%	7782	71%	4328	87%	1461	91%	1461	91%

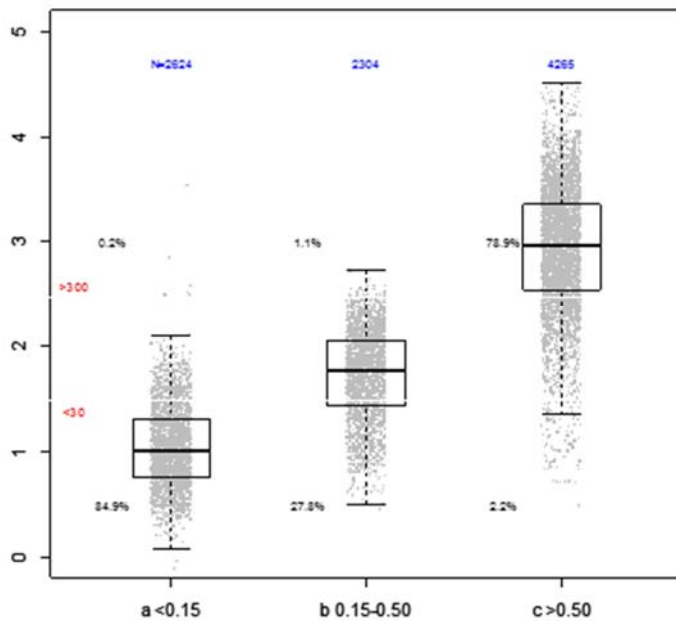
Supplemental Table 9: Characteristics of the Validation Population

	Total Population		Group 1: No eGFR		Group 2: eGFR ≥ 60		Group 3: eGFR 45-60		Group 4: eGFR 30-45		Group 5: eGFR 15-30		Group 6: eGFR < 15	
	N	% / SD	N	% / SD	N	% / SD	N	% / SD	N	% / SD	N	% / SD	N	% / SD
Number	1,680,334		684,237		873,803		73,447		29,093		11,406		8348	
Age, years	50	19	44	18	51	17	70	14	74	14	71	15	62	16
Female	986,069	59%	409,147	60%	509,240	58%	41,637	57%	16,352	56%	5995	53%	3698	44%
Black	175,215	10%	61,679	9%	101,736	12%	5,476	8%	2717	9%	1581	14%	2025	24%
Num eGFR measurements	7	18	N/A	N/A	7	16	17	31	27	47	34	57	37	70
Days to most recent eGFR	639	866	N/A	N/A	674	905	468	733	371	587	373	571	494	642
Prior eGFR <60	155,236	9%	N/A	N/A	69,626	8%	45,511	62%	23,897	82%	9616	84%	6586	79%
Prior GFR <60 90+d prior	122,479	7%	N/A	N/A	54,616	6%	36,183	49%	18,691	64%	7698	68%	5291	63%
Any UACR, UPCR, or UA	682,270	41%	84,021	12%	514,215	59%	49,034	67%	20,914	72%	8480	74%	5606	67%
Any UACR	118,363	7%	881	0.1%	88,636	10%	16,162	22%	8270	28%	3330	29%	1817	22%
Num UACR measurements	2.5	3.0	1.3	1.2	2.3	2.7	2.7	3.3	3.0	3.7	3.0	4.4	2.4	4.0
Most recent UACR:														
a <30mg/g	85,887	73%	707	80%	69,827	79%	10,412	64%	3997	48%	818	25%	126	3%
b 30 to 300mg/g	24,338	21%	128	15%	15,628	18%	4303	27%	2794	34%	1126	34%	359	8%
c >300mg/g	8871	8%	46	5%	3181	4%	1447	9%	1479	18%	1386	42%	1332	29%
Any UPCR	57,401	3%	897	0.1%	35,343	4%	7960	11%	6483	22%	4049	36%	2669	32%
Num UPCR measurements	2.8	5.7	1.3	3.4	2.2	4.5	3.4	6.7	3.9	8.2	4.0	6.9	3.7	6.8
Most recent UPCR:														
a <150mg/g	26,178	46%	498	56%	18,761	53%	3890	49%	2306	36%	620	15%	103	4%
b 150 to 500mg/g	18,028	31%	245	27%	11,537	33%	2517	32%	2228	34%	1199	30%	302	11%
c >500mg/g	13,195	23%	154	17%	5045	14%	1553	19%	1949	30%	2230	55%	2264	85%
Any UA	632,550	38%	82,531	12%	475,216	54%	44,258	60%	18,496	64%	7178	63%	4871	58%
Num UA measurements	3.2	5.4			3.4	5.5	4.3	6.9	5.2	8.0	5.8	9.5	5.7	10.9
Most recent UA:														
a Neg	495,430	78%	64,949	79%	382,937	81%	32,576	74%	11,488	62%	2945	41%	535	11%
b Trace to 30 (Trace, 1+)	99,432	16%	13,368	16%	70,862	15%	8060	18%	4251	23%	1906	27%	985	20%
c 100 to >300 (2+, 3+, 4+)	37,399	6%	4198	5%	21,244	5%	3594	8%	2728	15%	2300	32%	3335	69%
Dialysis	23,025	1%	3688	0.5%	4618	0.5%	3084	4%	,864	10%	2737	24%	6034	72%
Transplant	11,196	0.7%	666	0.1%	4091	0.5%	2359	3%	1947	7%	1104	10%	1029	12%

**Supplemental Figure 1: Correlation between Same-day UACR and UPCR Results at Three Sites
Cleveland Clinic**



Minnesota



Supplemental Figure 2: Correlation between Same-day UPCR and UA Results at Three Sites

