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Dataset Integrity Check for Chronic Renal Insufficiency Cohort (CRIC): DSIC 1 --- Baseline Analysis Dataset (MS004)

As a partial check of the integrity of the CRIC datasets archived in the NIDDK data repository, a set of tabulations was performed to verify that published results from the CRIC study can be reproduced using the archived datasets. Analyses were performed to duplicate published results for two CRIC datasets. The present Dataset Integrity Check (DSIC) reports results for the baseline analysis dataset (MS004). This dataset supports findings reported in 2009 by Lash et al. in an article in the *Clinical Journal of the American Society of Nephrology.*[1] Initial analyses of these data revealed that there were a few inaccuracies in the published tables. The DCC provided a new set of corrected tables which have been used in this Dataset Integrity Check. The "published" values shown in our tables are the corrected values provided by the DCC not the originally published values. We replicate the two major tables from the baseline analysis: Table 3, "Baseline demographic and clinical characteristics of participants"; and Table 4, "Baseline characteristics by eGFR level.")

Purpose. The intent of this dataset integrity check is to provide confidence that the dataset distributed by the NIDDK repository is a true copy of the study data. Our intent is not to assess the integrity of the statistical analyses reported by study investigators. As with all statistical analyses of complex datasets, complete replication of a set of statistical results should not be expected on a first (or second) exercise in secondary analysis. This occurs for a number of reasons including differences in the handling of missing data, restrictions on cases included in samples for a particular analysis, software coding used to define

[1] Lash JP, Go AS, Appel LJ, He J, Ojo A, Rahman M, Townsend RR, Xie D, Cifelli D, Cohan J, Fink JC, Fischer MJ, Gadegbeku C, Hamm LL, Kusek JW, Landis JR, Narva A, Robinson N, Teal V, Feldman HI; Chronic Renal Insufficiency Cohort (CRIC) Study Group. Chronic Renal Insufficiency Cohort (CRIC) Study: baseline characteristics and associations with kidney function. *Clin J Am Soc Nephrol.* 2009 Aug;4(8):1302-11.

complex variables, etc. Experience suggests that most discrepancies can ordinarily be resolved by consultation with the study DCC, however this process is labor-intensive for both DCC and Repository staff. It is thus not our policy to resolve every discrepancy that is observed in a dataset integrity check. Thus, we do not attempt to resolve minor or inconsequential discrepancies with published results or discrepancies that involve complex analyses unless staff of the NIDDK Repository suspect that the observed discrepancy suggests that the dataset may have been corrupted in storage, transmission, or processing by repository staff.

Datasets. The dataset used for these analyses was ms004_analytical_data_final.sas7bdat received from the DCC (with date stamp of 7-19-2011). This SAS dataset was converted to Stata format using Stat/Transfer and output as a Stata data file ms004_analytical_data_final.dta (with date stamp of 8-9-2011). The SAS format file(formats.sas7bcat) provided by the DCC was processed by Stat/Transfer to construct value labels.

Baseline Demographic Characteristics. Table 1 (published table 3) displays more than 30 baseline sociodemographic and medical characteristics of respondents for: (1) the entire cohort, (2) the subcohort with iGFR, and (3 & 4) subcohorts with and without diabetes. There is perfect agreement between both the basic values (Ns, means and SDs for metric variables; Ns and percent distributions for categorical variables) and p-values provided by the DCC and those calculated from the archived dataset.

Baseline Demographic Characteristics by eGFR. Table 2 (published table 4) displays the same 30+ baseline sociodemographic and medical characteristics of respondents at 5 levels of eGFR (estimated glomerular filtration rate). There are no noteworthy discrepancies between the values calculated from the archived dataset and those reported in the DCC's tables. Some substantively unimportant discrepancies in p-values were found.[2]

Conclusion. Our results fully replicate the two major baseline tables provided by the DCC. As noted previously, these tables corrected a small number of errors in the published article.

[2] The DCC has noted that "[for this table] we treated eGFR as a continuous variable in calculating the p values. That is, the p value was from a linear regression where eGFR is the dependent variable and the row variables as independent variables. So the p values for categorical row variables is from ANOVA where the dependent variable is eGFR and row variable defining the groups. For continuous variables the p values are the same as the p value in correlation analysis between eGFR and the continuous row variable. This might explain the [observed] differences." (Email from Dawei Xie, September 15, 2011)

TABLE 1: Comparison of results provided by DCC for CRIC published Table 3 and results calculated from analysis dataset MS004. Calculated values are shown in italics underneath DCC's reported values.(a)

Variable	Cohort	Subcohort with iGFR	Diabetes	No Diabetes	P Diabetes vs. No Diabetes
n	3612	1288	1685	1927	
	3612	*1288*	*1685*	*1927*	
Age (yr; mean ±SD)	58.2 +/- 11.0	56.1 +/- 12.5	59.5 +/- 9.8	57.1 +/- 11.8	0.0001
	58.2 +/- 11.0	*56.1 +/- 12.5*	*59.5 +/- 9.8*	*57.1 +/- 11.8*	*< 0.0001*
Gender (n [%])					0.2516
Male	1959 (54%)	713 (55%)	931 (55%)	1028 (53%)	*0.252*
	1959 (54%)	*713 (55%)*	*931 (55%)*	*1028 (53%)*	
Female	1653 (46%)	575 (45%)	754 (45%)	899 (47%)	
	1653 (46%)	*575 (45%)*	*754 (45%)*	*899 (47%)*	
Race/Ethnicity group (n [%])					0.0001
Non-Hispanic White	1638 (45%)	588 (46%)	649 (39%)	989 (51%)	*<0.001*
	1638 (45%)	*588 (46%)*	*649 (39%)*	*989 (51%)*	
Non-Hispanic Black /African American	1651 (46%)	532 (41%)	849 (50%)	802 (42%)	
	1651 (46%)	*532 (41%)*	*849 (50%)*	*802 (42%)*	
Hispanic	169 (5%)	69 (5%)	111 (7%)	58 (3%)	
	169 (5%)	*69 (5%)*	*111 (7%)*	*58 (3%)*	
Other[b]	154 (4%)	99 (8%)	76 (5%)	78 (4%)	
	154 (4%)	*99 (8%)*	*76 (5%)*	*78 (4%)*	
Annual Household Income (n [%])					0.0001
$20,000 or under	1009 (28%)	297 (23%)	565 (34%)	444 (23%)	*<0.001*
	1009 (28%)	*297 (23%)*	*565 (34%)*	*444 (23%)*	
$20,001 - $50,000	906 (25%)	338 (26%)	432 (26%)	474 (25%)	
	906 (25%)	*338 (26%)*	*432 (26%)*	*474 (25%)*	
$50,001 - $100,000	725 (20%)	306 (24%)	281 (17%)	444 (23%)	
	725 (20%)	*306 (24%)*	*281 (17%)*	*444 (23%)*	
More than $100,000	389 (11%)	154 (12%)	136 (8%)	253 (13%)	
	389 (11%)	*154 (12%)*	*136 (8%)*	*253 (13%)*	
No Response	583 (16%)	193 (15%)	271 (16%)	312 (16%)	
	583 (16%)	*193 (15%)*	*271 (16%)*	*312 (16%)*	

Variable	Cohort	Subcohort with iGFR	Diabetes	No Diabetes	P Diabetes vs. No Diabetes
Educational attainment (n [%])					0.0001
<7th grade	60 (2%)	16 (1%)	41 (2%)	19 (1%)	*<0.001*
	60 (2%)	*16 (1%)*	*41 (2%)*	*19 (1%)*	
7th to 12th grade	545 (15%)	153 (12%)	319 (19%)	226 (12%)	
	545 (15%)	*153 (12%)*	*319 (19%)*	*226 (12%)*	
High school diploma	695 (19%)	239 (19%)	339 (20%)	356 (18%)	
	695 (19%)	*239 (19%)*	*339 (20%)*	*356 (18%)*	
Vocational degree	184 (5%)	64 (5%)	98 (6%)	86 (4%)	
	184 (5%)	*64 (5%)*	*98 (6%)*	*86 (4%)*	
Some college	921 (26%)	319 (25%)	440 (26%)	481 (25%)	
	921 (26%)	*319 (25%)*	*440 (26%)*	*481 (25%)*	
College graduate	696 (19%)	298 (23%)	281 (17%)	415 (22%)	
	696 (19%)	*298 (23%)*	*281 (17%)*	*415 (22%)*	
Graduate degree	510 (14%)	198 (15%)	167 (10%)	343 (18%)	
	510 (14%)	*198 (15%)*	*167 (10%)*	*343 (18%)*	
Tobacco use (n [%])					
Current Smoker	494 (14%)	152 (12%)	212 (13%)	282 (15%)	0.0733
	494 (14%)	*152 (12%)*	*212 (13%)*	*282 (15%)*	*0.073*
>100 Cigarettes during lifetime	2019 (56%)	667 (52%)	983 (58%)	1036 (54%)	0.0057
	2019 (56%)	*667 (52%)*	*983 (58%)*	*1036 (54%)*	*0.006*
Medical History (n [%])					
hypertension	3094 (86%)	1091 (85%)	1552 (92%)	1542 (80%)	0.0001
	3094 (86%)	*1091 (85%)*	*1552 (92%)*	*1542 (80%)*	*<0.001*
MI or coronary revascularization	810 (22%)	225 (17%)	493 (29%)	317 (16%)	0.0001
	810 (22%)	*225 (17%)*	*493 (29%)*	*317 (16%)*	*<0.001*

Variable	Cohort	Subcohort with iGFR	Diabetes	No Diabetes	P Diabetes vs. No Diabetes
Chronic heart failure	357 (10%)	86 (7%)	245 (15%)	112 (6%)	0.0001
	357 (10%)	*86 (7%)*	*245 (15%)*	*112 (6%)*	*<0.001*
PAD	250 (7%)	80 (6%)	181 (11%)	69 (4%)	0.0001
	250 (7%)	*80 (6%)*	*181 (11%)*	*69 (4%)*	*<0.001*
BP variables					
SBP(mmHg; mean ±SD)	127.7 +/- 21.9	127.8 +/- 21.3	132.4 +/- 22.5	123.6 +/- 20.5	0.0001
	127.7 +/- 21.9	*127.8 +/- 21.3*	*132.4 +/- 22.5*	*123.6 +/- 20.5*	*<0.001*
DBP (mmHg; mean ±SD)	71.4 +/- 12.8	72.4 +/- 12.7	69.4 +/- 12.8	73.1 +/- 12.6	*<0.001*
	71.4 +/- 12.8	*72.4 +/- 12.7*	*69.4 +/- 12.8*	*73.1 +/- 12.6*	*<0.001*
MAP (mmHg; mean ±SD)	90.2 +/- 13.8	90.9 +/- 13.2	90.4 +/- 13.9	89.9 +/- 13.6	0.3113
	90.2 +/- 13.8	*90.9 +/- 13.2*	*90.4 +/- 13.9*	*89.9 +/- 13.6*	*0.3113*
BP>130/80 mmHg	1686 (47%)	626 (49%)	882 (53%)	804 (42%)	0.0001
	1686 (47%)	*626 (49%)*	*882 (53%)*	*804 (42%)*	*<0.001*
Weight (kg; mean ±SD)	92.0 +/- 23.7	89.9 +/- 21.2	97.7 +/- 24.2	87.1 +/- 22.1	0.0001
	92.0 +/- 23.7	*89.9 +/- 21.2*	*97.7 +/- 24.2*	*87.1 +/- 22.1*	*<0.001*
BMI (kg/m^2; mean ±SD)	32.1 +/- 7.9	31.3 +/- 7.0	34.1 +/- 8.2	30.3 +/- 7.2	0.0001
	32.1 +/- 7.9	*31.3 +/- 7.0*	*34.1 +/- 8.2*	*30.3 +/- 7.2*	*<0.001*
BMI (kg/m^2; n [%]))					0.0001
<25.0	607 (17%)	234 (18%)	179 (11%)	428 (22%)	*<0.001*
	607 (17%)	*234 (18%)*	*179 (11%)*	*428 (22%)*	
25.0-29.9	1018 (28%)	381 (30%)	388 (23%)	630 (33%)	
	1018 (28%)	*381 (30%)*	*388 (23%)*	*630 (33%)*	
>=30.0	1987 (55%)	673 (52%)	1118 (66%)	869 (45%)	
	1987 (55%)	*673 (52%)*	*1118 (66%)*	*869 (45%)*	

Variable	Cohort	Subcohort with iGFR	Diabetes	No Diabetes	P Diabetes vs. No Diabetes
ABI<0.9 (n [%])	584 (16%)	194 (15%)	371 (23%)	213 (11%)	0.0001
	584 (16%)	*194 (15%)*	*371 (23%)*	*213 (11%)*	*<0.001*
Kidney Function Measures					
Adjusted serum creatinine (mg/dl; mean ±SD)	1.73 +/- 0.57	1.68 +/- 0.56	1.80 +/- 0.56	1.67 +/- 0.57	0.0001
	1.73 +/- 0.57	*1.68 +/- 0.56*	*1.80 +/- 0.56*	*1.67 +/- 0.57*	*<0.0001*
eGFR (mL/min/1.73m^2; mean ±SD)	43.4 +/- 13.5	45.2 +/- 14.1	41.4 +/- 12.9	45.1 +/- 13.8	0.0001
	43.4 +/- 13.5	*45.2 +/- 14.1*	*41.4 +/- 12.9*	*45.1 +/- 13.8*	*<0.0001*
eGFR (mL/min/1.73m^2; n [%]))					0.0001
<15	3 (0%)	2 (0%)	1 (0%)	2 (0%)	*<0.001*
	3 (0%)	*2 (0%)*	*1 (0%)*	*2 (0%)*	
15-29	664 (18%)	206 (16%)	351 (21%)	313 (16%)	
	664 (18%)	*206 (16%)*	*351 (21%)*	*313 (16%)*	
30-59	2532 (70%)	887 (69%)	1197 (71%)	1335 (70%)	
	2532 (70%)	*887 (69%)*	*1197 (71%)*	*1335 (70%)*	
60-89	389 (11%)	187 (15%)	126 (8%)	263 (14%)	
	389 (11%)	*187 (15%)*	*126 (8%)*	*263 (14%)*	
>90	8 (0%)	4 (0%)	4 (0%)	4 (0%)	
	8 (0%)	*4 (0%)*	*4 (0%)*	*4 (0%)*	
Urine Protein/24 h (g; median [IQR])	0.17 (0.07 to 0.81)	0.18 (0.07 to 0.90)	0.32 (0.09 to 1.49)	0.11 (0.06 to 0.43)	0.0001
	0.17 (0.07 to 0.81)	*0.18 (0.07 to 0.90)*	*0.32 (0.09 to 1.49)*	*0.11 (0.06 to 0.43)*	*<0.001*
ACEI or ARB therapy (n [%])	2462 (68%)	880 (68%)	1336 (79%)	1126 (58%)	0.0001
	2462 (68%)	*880 (68%)*	*1336 (79%)*	*1126 (58%)*	*<0.001*
Lipoproteins (mg/dl; mean ±SD)					
Total cholesterol	183.1 +/- 44.5	183.6 +/- 47.0	177.0 +/- 47.1	188.4 +/- 41.5	0.0001
	183.1 +/- 44.5	*183.6 +/- 47.0*	*177.0 +/- 47.1*	*188.4 +/- 41.5*	*<0.001*
LDL cholesterol	102.6 +/- 35.3	103.4 +/- 36.5	96.4 +/- 35.4	108.1 +/- 34.2	0.0001
	102.6 +/- 35.3	*103.4 +/- 36.5*	*96.4 +/- 35.4*	*108.1 +/- 34.2*	*<0.001*

Variable	Cohort	Subcohort with iGFR	Diabetes	No Diabetes	P Diabetes vs. No Diabetes
HDL cholesterol	48.1 +/- 15.6	47.5 +/- 15.7	45.7 +/- 13.9	50.1 +/- 16.7	0.0001
	48.1 +/- 15.6	*47.5 +/- 15.7*	*45.7 +/- 13.9*	*50.1 +/- 16.7*	*<0.001*
Triglycerides	153.7 +/- 115.2	151.5 +/- 111.9	166.0 +/- 129.8	142.9 +/- 99.3	0.0001
	153.7 +/- 115.2	*151.5 +/- 111.9*	*166.0 +/- 129.8*	*142.9 +/- 99.3*	*<0.001*
Hemoglobin (g/dl; mean ±SD)	12.7 +/- 1.8	12.6 +/- 1.7	12.1 +/- 1.7	13.2 +/- 1.7	0.0001
	12.7 +/- 1.8	*12.6 +/- 1.7*	*12.1 +/- 1.7*	*13.2 +/- 1.7*	*<0.001*
Serum calcium (mg/dl; mean ±SD)	9.2 +/- 0.5	9.2 +/- 0.5	9.1 +/- 0.5	9.2 +/- 0.5	0.0001
	9.2 +/- 0.5	*9.2 +/- 0.5*	*9.1 +/- 0.5*	*9.2 +/- 0.5*	*<0.001*
Serum phosphate (mg/dl; mean ±SD)	3.7 +/- 0.7	3.7 +/- 0.7	3.9 +/- 0.7	3.5 +/- 0.6	0.0001
	3.7 +/- 0.7	*3.7 +/- 0.7*	*3.9 +/- 0.7*	*3.5 +/- 0.6*	*<0.001*
Total PTH (pg/ml; median [IQR])	53.0 (34.0 to 88.0)	52.9 (34.0 to 85.0)	60.0 (37.1 to 102.4)	48.5 (32.5 to 78.0)	0.0001
	53.0 (34.0 to 88.0)	*52.9 (34.0 to 85.0)*	*60.0 (37.1 to 102.4)*	*48.5 (32.5 to 78.0)*	*<0.001*
Blood glucose (mg/dl; median [IQR])	97.0 (86.0 to 124.0)	97.0 (86.0 to 121.0)	127.0 (100.0 to 163.0)	90.0 (84.0 to 98.0)	0.0001
	97.0 (86.0 to 124.0)	*97.0 (86.0 to 121.0)*	*127.0 (100.0 to 163.0)*	*90.0 (84.0 to 98.0)*	*<0.001*
Glycosylated hemoglobin (%; mean ±SD)	6.6 +/- 1.6	6.5 +/- 1.6	7.7 +/- 1.7	5.7 +/- 0.5	0.0001
	6.6 +/- 1.6	*6.5 +/- 1.6*	*7.7 +/- 1.7*	*5.7 +/- 0.5*	*<0.001*

(a) ABI, ankle-brachial index; ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; BMI, body mass index; DBP, diastolic BP; eGFR, estimated GFR; iPTH, intact parathyroid hormone; IQR, interquartile range; MAP, mean arterial pressure; MI, myocardial infarction; PAD, peripheral arterial disease; SBP, systolic BP.

(b) Includes Asian/Pacific Islander and Native American individuals.

TABLE 2: Comparison of results provided by DCC for CRIC published Table 4 and results calculated from analysis dataset MS004. Calculated values are shown in italics underneath DCC's reported values.

VARIABLE	eGFR (ml/min per 1.73 m2)					P
	<30	30-<40	40-<50	50-<60	>=60	
n	667	844	968	720	397	
Age (yr; mean ±SD)	58.7 +/- 11.2	59.6 +/- 11.0	60.0 +/- 10.4	57.7 +/- 10.1	51.5 +/- 11.0	0.0001
	58.7 +/- 11.2	*59.6 +/- 11.0*	*60.0 +/- 10.4*	*57.7 +/- 10.1*	*51.5 +/- 11.0*	*<0.0001*
Gender (n [%])						0.0001
Male	311 (47%)	440 (52%)	568 (59%)	406 (56%)	226 (57%)	*<0.0001*
	311 (47%)	*440 (52%)*	*568 (59%)*	*406 (56%)*	*226 (57%)*	
Female	356 (53%)	404 (48%)	400 (41%)	314 (44%)	171 (43%)	
	356 (53%)	*404 (48%)*	*400 (41%)*	*314 (44%)*	*171 (43%)*	
Race/Ethnicity group (n [%])						0.0012
Non-Hispanic White	277 (42%)	386 (46%)	461 (48%)	348 (48%)	160 (40%)	*<0.001*
	277 (42%)	*386 (46%)*	*461 (48%)*	*348 (48%)*	*160 (40%)*	
Non-Hispanic Black /African American	303 (45%)	387 (46%)	430 (44%)	319 (44%)	202 (51%)	
	303 (45%)	*387 (46%)*	*430 (44%)*	*319 (44%)*	*202 (51%)*	
Hispanic	55 (8%)	43 (5%)	32 (3%)	21 (3%)	18 (5%)	
	55 (8%)	*43 (5%)*	*32 (3%)*	*21 (3%)*	*18 (5%)*	
Other[a]	32 (5%)	28 (3%)	45 (5%)	32 (4%)	17 (4%)	
	32 (5%)	*28 (3%)*	*45 (5%)*	*32 (4%)*	*17 (4%)*	

VARIABLE	eGFR (ml/min per 1.73 m2)					P
	<30	30-<40	40-<50	50-<60	>=60	
Annual Household Income (n [%])						0.0001
$20,000 or under	249 (37%)	292 (35%)	232 (24%)	155 (22%)	72 (18%)	*<0.001*
	249 (37%)	*292 (35%)*	*232 (24%)*	*155 (22%)*	*72 (18%)*	
$20,001 - $50,000	179 (27%)	199 (24%)	267 (28%)	162 (23%)	96 (24%)	
	179 (27%)	*199 (24%)*	*267 (28%)*	*162 (23%)*	*96 (24%)*	
$50,001 - $100,000	108 (16%)	150 (18%)	187 (19%)	171 (24%)	108 (27%)	
	108 (16%)	*150 (18%)*	*187 (19%)*	*171 (24%)*	*108 (27%)*	
More than $100,000	38 (6%)	69 (8%)	117 (12%)	115 (16%)	49 (12%)	
	38 (6%)	*69 (8%)*	*117 (12%)*	*115 (16%)*	*49 (12%)*	
No Response	93 (14%)	134 (16%)	165 (17%)	117 (16%)	72 (18%)	
	93 (14%)	*134 (16%)*	*165 (17%)*	*117 (16%)*	*72 (18%)*	
Educational attainment (n [%])						0.0001
<7th grade	27 (4%)	15 (2%)	10 (1%)	4 (1%)	4 (1%)	*<0.001*
	27 (4%)	*15 (2%)*	*10 (1%)*	*4 (1%)*	*4 (1%)*	
7th to 12th grade	126 (19%)	160 (19%)	143 (15%)	82 (11%)	27 (7%)	
	126 (19%)	*160 (19%)*	*143 (15%)*	*82 (11%)*	*27 (7%)*	
High school diploma	145 (22%)	177 (21%)	189 (20%)	112 (16%)	69 (17%)	
	145 (22%)	*177 (21%)*	*189 (20%)*	*112 (16%)*	*69 (17%)*	
Vocational degree	36 (5%)	38 (5%)	48 (5%)	36 (5%)	26 (7%)	
	36 (5%)	*38 (5%)*	*48 (5%)*	*36 (5%)*	*26 (7%)*	
Some college	162 (24%)	224 (27%)	228 (24%)	192 (27%)	112 (28%)	
	162 (24%)	*224 (27%)*	*228 (24%)*	*192 (27%)*	*112 (28%)*	
College graduate	106 (16%)	146 (17%)	188 (19%)	172 (24%)	82 (21%)	
	106 (16%)	*146 (17%)*	*188 (19%)*	*172 (24%)*	*82 (21%)*	
Graduate degree	65 (10%)	84 (10%)	162 (17%)	122 (17%)	76 (19%)	
	65 (10%)	*84 (10%)*	*162 (17%)*	*122 (17%)*	*76 (19%)*	

VARIABLE	eGFR (ml/min per 1.73 m2)					P
	<30	30-<40	40-<50	50-<60	>=60	
Tobacco use (n [%])						
Current Smoker	110 (16%)	123 (15%)	117 (12%)	84 (12%)	54 (14%)	0.01
	110 (16%)	*123 (15%)*	*117 (12%)*	*84 (12%)*	*54 (14%)*	*0.05*
>100 Cigarettes during lifetime	405 (61%)	500 (59%)	542 (56%)	375 (52%)	189 (48%)	0.0001
	405 (61%)	*500 (59%)*	*542 (56%)*	*375 (52%)*	*189 (48%)*	*<0.001*
Medical History (n [%])						
Hypertension	612 (92%)	767 (91%)	848 (88%)	587 (82%)	267 (67%)	0.0001
	612 (92%)	*767 (91%)*	*848 (88%)*	*587 (82%)*	*267 (67%)*	*<0.001*
Diabetes	352 (53%)	459 (54%)	448 (46%)	290 (40%)	130 (33%)	0.0001
	352 (53%)	*459 (54%)*	*448 (46%)*	*290 (40%)*	*130 (33%)*	*<0.001*
MI or coronary revascularization	170 (25%)	227 (27%)	227 (23%)	131 (18%)	51 (13%)	0.0001
	170 (25%)	*227 (27%)*	*227 (23%)*	*131 (18%)*	*51 (13%)*	*<0.001*
Chronic heart failure	97 (15%)	103 (12%)	91 (9%)	43 (6%)	19 (5%)	0.0001
	97 (15%)	*103 (12%)*	*91 (9%)*	*43 (6%)*	*19 (5%)*	*<0.001*
PAD	75 (11%)	85 (10%)	47 (5%)	31 (4%)	11 (3%)	0.0001
	75 (11%)	*85 (10%)*	*47 (5%)*	*31 (4%)*	*11 (3%)*	*<0.001*
BP variables						
SBP(mmHg; mean ±SD)	130.5 +/- 23.6	129.4 +/- 23.2	127.7 +/- 21.3	125.4 +/- 20.2	123.5 +/- 20.0	0.0001
	130.5 +/- 23.6	*129.4 +/- 23.2*	*127.7 +/- 21.3*	*125.4 +/- 20.2*	*123.5 +/- 20.0*	*<0.0001*
DBP (mmHg; mean ±SD)	69.9 +/- 13.3	70.1 +/- 12.6	71.5 +/- 12.7	72.3 +/- 12.3	74.9 +/- 12.8	0.0001
	69.9 +/- 13.3	*70.1 +/- 12.6*	*71.5 +/- 12.7*	*72.3 +/- 12.3*	*74.9 +/- 12.8*	*<0.0001*
MAP (mmHg; mean ±SD)	90.1 +/- 14.4	89.8 +/- 14.0	90.2 +/- 13.7	90.0 +/- 13.1	91.1 +/- 13.7	0.574
	90.1 +/- 14.4	*89.8 +/- 14.0*	*90.2 +/- 13.7*	*90.0 +/- 13.1*	*91.1 +/- 13.7*	*0.682*
BP>130/80 mmHg	335 (50%)	394 (47%)	466 (48%)	319 (45%)	164 (42%)	0.0004
	335 (50%)	*394 (47%)*	*466 (48%)*	*319 (45%)*	*164 (42%)*	*0.037*
Weight (kg; mean ±SD)	89.8 +/- 24.8	92.3 +/- 23.2	92.5 +/- 23.3	93.3 +/- 24.1	92.3 +/- 22.6	0.0311
	89.8 +/- 24.8	*92.3 +/- 23.2*	*92.5 +/- 23.3*	*93.3 +/- 24.1*	*92.3 +/- 22.6*	*0.081*

VARIABLE	eGFR (ml/min per 1.73 m2)					P
	<30	30-<40	40-<50	50-<60	>=60	
BMI (kg/m^2; mean ±SD)	31.9 +/- 8.4	32.5 +/- 7.9	32.1 +/- 7.8	32.2 +/- 8.1	31.3 +/- 7.1	0.2129
	31.9 +/- 8.4	*32.5 +/- 7.9*	*32.1 +/- 7.8*	*32.2 +/- 8.1*	*31.3 +/- 7.1*	*0.187*
BMI (kg/m^2; n [%]))						0.9501
<25.0	132 (20%)	126 (15%)	149 (15%)	121 (17%)	73 (18%)	*0.352*
	132 (20%)	*126 (15%)*	*149 (15%)*	*121 (17%)*	*73 (18%)*	
25.0-29.9	182 (27%)	238 (28%)	275 (28%)	207 (29%)	112 (28%)	
	182 (27%)	*238 (28%)*	*275 (28%)*	*207 (29%)*	*112 (28%)*	
>=30.0	353 (53%)	480 (57%)	544 (56%)	392 (54%)	212 (53%)	
	353 (53%)	*480 (57%)*	*544 (56%)*	*392 (54%)*	*212 (53%)*	
ABI<0.9 (n [%])	155 (24%)	165 (20%)	143 (15%)	101 (14%)	18 (5%)	0.0001
	155 (24%)	*165 (20%)*	*143 (15%)*	*101 (14%)*	*18 (5%)*	*<0.0001*
Kidney function measures						
Adjusted serum creatinine□ (mg/dl; mean ±S	2.56 +/- 0.56	1.90 +/- 0.32	1.56 +/- 0.23	1.32 +/- 0.20	1.14 +/- 0.20	0.0001
	2.56 +/- 0.56	*1.90 +/- 0.32*	*1.56 +/- 0.23*	*1.32 +/- 0.20*	*1.14 +/- 0.20*	*<0.0001*
Urine Protein/24 h (g; median [IQR])	0.57 (0.14 to 2.14)	0.26 (0.08 to 1.22)	0.13 (0.07 to 0.60)	0.10 (0.06 to 0.36)	0.10 (0.06 to 0.22)	0.0001
	0.57 (0.14 to 2.14)	*0.26 (0.08 to 1.22)*	*0.13 (0.07 to 0.60)*	*0.10 (0.06 to 0.36)*	*0.10 (0.06 to 0.22)*	*<0.0001*

VARIABLE	eGFR (ml/min per 1.73 m2)					P
	<30	30-<40	40-<50	50-<60	>=60	
Lipoproteins (mg/dl; mean ±SD)						
Total cholesterol	183.3 +/- 51.6	182.5 +/- 46.3	183.3 +/- 42.1	183.2 +/- 41.2	183.5 +/- 39.2	0.7674
	183.3 +/- 51.6	*182.5 +/- 46.3*	*183.3 +/- 42.1*	*183.2 +/- 41.2*	*183.5 +/- 39.2*	*>0.5*
LDL cholesterol	99.9 +/- 38.6	100.4 +/- 35.6	103.3 +/- 34.8	104.5 +/- 33.2	107.2 +/- 32.6	0.0001
	99.9 +/- 38.6	*100.4 +/- 35.6*	*103.3 +/- 34.8*	*104.5 +/- 33.2*	*107.2 +/- 32.6*	*0.0026*
HDL cholesterol	46.7 +/- 15.5	47.4 +/- 15.7	48.2 +/- 14.8	48.8 +/- 16.0	50.2 +/- 16.4	0.0003
	46.7 +/- 15.5	*47.4 +/- 15.7*	*48.2 +/- 14.8*	*48.8 +/- 16.0*	*50.2 +/- 16.4*	*0.0034*
Triglycerides	167.8 +/- 126.8	162.3 +/- 123.0	150.8 +/- 99.0	148.3 +/- 127.4	128.6 +/- 81.5	0.0001
	167.8 +/- 126.8	*162.3 +/- 123.0*	*150.8 +/- 99.0*	*148.3 +/- 127.4*	*128.6 +/- 81.5*	*<0.0001*
Hemoglobin (g/dl; mean ±SD)	11.8 +/- 1.7	12.3 +/- 1.7	12.8 +/- 1.7	13.2 +/- 1.6	13.4 +/- 1.6	0.0001
	11.8 +/- 1.7	*12.3 +/- 1.7*	*12.8 +/- 1.7*	*13.2 +/- 1.6*	*13.4 +/- 1.6*	*<0.0001*
Serum calcium (mg/dl; mean ±SD)	9.1 +/- 0.6	9.2 +/- 0.5	9.2 +/- 0.5	9.2 +/- 0.5	9.2 +/- 0.4	0.0002
	9.1 +/- 0.6	*9.2 +/- 0.5*	*9.2 +/- 0.5*	*9.2 +/- 0.5*	*9.2 +/- 0.4*	*<0.0001*
Serum phosphate (mg/dl; mean ±SD)	4.1 +/- 0.8	3.8 +/- 0.6	3.6 +/- 0.6	3.5 +/- 0.6	3.4 +/- 0.5	0.0001
	4.1 +/- 0.8	*3.8 +/- 0.6*	*3.6 +/- 0.6*	*3.5 +/- 0.6*	*3.4 +/- 0.5*	
Total PTH (pg/ml; median [IQR])	104.5 (64.0 to 172.2)	63.9(41.0 to 100.2)	47.8(32.0 to 74.0)	40.9 (29.6 to 59.1)	36.0 (27.3 to 50.3)	0.0001
	104.5 (64.0 to 172.2)	*63.9(41.0 to 100.2)*	*47.8(32.0 to 74.0)*	*40.9 (29.6 to 59.1)*	*36.0 (27.3 to 50.3)*	
Blood glucose (mg/dl; median [IQR])	96.5 (85.0 to 124.0)	98.0 (87.0 to 131.0)	100.0 (88.0 to 127.0)	95.0 (85.0 to 119.0)	94.0 (84.0 to 110.0)	0.0003
	96.5 (85.0 to 124.0)	*98.0 (87.0 to 131.0)*	*100.0 (88.0 to 127.0)*	*95.0 (85.0 to 119.0)*	*94.0 (84.0 to 110.0)*	*0.0002*
Glycosylated hemoglobin (%; mean ±SD)	6.7 +/- 1.5	6.8 +/- 1.6	6.7 +/- 1.5	6.5 +/- 1.4	6.3 +/- 1.7	0.0001
	6.7 +/- 1.5	*6.8 +/- 1.6*	*6.7 +/- 1.5*	*6.5 +/- 1.4*	*6.3 +/- 1.7*	*<0.0001*
Serum uric acid (mg/dl; mean ±SD)	8.2 +/- 2.0	7.9 +/- 1.9	7.3 +/- 1.8	6.8 +/- 1.6	6.1 +/- 1.7	0.0001
	8.2 +/- 2.0	*7.9 +/- 1.9*	*7.3 +/- 1.8*	*6.8 +/- 1.6*	*6.1 +/- 1.7*	*<0.0001*

(a) Includes Asian/Pacific Islander and Native American individuals.

Appendix A

PUBLISHED ARTICLE

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Chronic Renal Insufficiency Cohort (CRIC) Study: Baseline Characteristics and Associations with Kidney Function

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Background and objectives: The Chronic Renal Insufficiency Cohort (CRIC) Study was established to examine risk factors for the progression of chronic kidney disease (CKD) and cardiovascular disease (CVD) in patients with CKD. We examined baseline demographic and clinical characteristics.

Design, setting, participants, & measurements: Seven clinical centers recruited adults who were aged 21 to 74 yr and had CKD using age-based estimated GFR (eGFR) inclusion criteria. At baseline, blood and urine specimens were collected and information regarding health behaviors, diet, quality of life, and functional status was obtained. GFR was measured using radiolabeled iothalamate in one third of participants.

Results: A total of 3612 participants were enrolled with mean age ± SD of 58.2 ± 11.0 yr; 46% were women, and 47% had diabetes. Overall, 45% were non-Hispanic white, 46% were non-Hispanic black, and 5% were Hispanic. Eighty-six percent reported hypertension, 22% coronary disease, and 10% heart failure. Mean body mass index was 32.1 ± 7.9 kg/m^2, and 47% had a BP >130/80 mmHg. Mean eGFR was 43.4 ± 13.5 ml/min per 1.73 m^2, and median (interquartile range) protein excretion was 0.17 g/24 h (0.07 to 0.81 g/24 h). Lower eGFR was associated with older age, lower socioeconomic and educational level, cigarette smoking, self-reported CVD, peripheral arterial disease, and elevated BP.

Conclusions: Lower level of eGFR was associated with a greater burden of CVD as well as lower socioeconomic and educational status. Long-term follow-up of participants will provide critical insights into the epidemiology of CKD and its relationship to adverse outcomes.

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The prevalence of ESRD that requires renal replacement therapy has risen dramatically in the United States during the past three decades (1). Non–dialysis-requiring chronic kidney disease (CKD) is substantially more common than ESRD, with an estimated 15 million adults in the United States having CKD of stage 3 or worse (as defined by an estimated GFR [eGFR] of <60 ml/min per 1.73 m^2) (2) Furthermore, CKD frequently progresses in severity, but the factors that are responsible for accelerated decline need further elucidation. In addition, recent studies have highlighted an important association between even mild CKD and increased risk for cardiovascular disease (CVD) (3), but the mechanisms for this association remain unclear.

In response to the epidemic of CKD and our incomplete understanding of factors that govern its progression and associated morbidity, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) established the Chronic Renal Insufficiency Cohort (CRIC) Study in 2001. The broad

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aims of the CRIC Study are to examine risk factors for the progression of kidney disease and CVD in patients with CKD and to develop predictive models to identify high-risk subgroups. The design and methods of the CRIC Study have been previously reported (4). In this article, we characterize the eligibility and recruitment methods, describe the baseline characteristics of patients enrolled in the cohort, and report initial analyses of correlates of level of eGFR.

Materials and Methods

Study Organization

The CRIC Study consists of a Scientific and Data Coordinating Center; seven clinical centers, central laboratories, and reading centers; a Scientific Advisory Committee; and NIDDK project scientists as described previously (4). The study protocol was approved by institutional review boards at participating institutions, and the research was conducted in accordance with the ethical principles of the Declaration of Helsinki.

Study Design

The CRIC Study was designed as a prospective cohort of approximately 3600 participants who were enrolled through seven clinical centers. A weighted random sample of approximately one third of the cohort (referred to as the subcohort) was assigned to undergo additional, more intensive testing (including iothalamate clearance studies to measure GFR and electron-beam tomography) that would also facilitate use of nested case-cohort substudies (4). CRIC participants are followed until death or withdrawal of informed consent. Follow-up continues even after ESRD occurs with initiation of chronic dialysis or receipt of a kidney transplant. Outcomes regarding progression of kidney dysfunction will focus principally on reductions in GFR as well as the occurrence of clinically relevant declines in renal function. Evaluation of subclinical CVD is assessed annually (*via* standard 12-lead electrocardiography and measurements of ankle-brachial index [ABI]), and transthoracic echocardiography is performed at years 1 and 4 of follow-up for all participants. Coronary artery calcium burden assessment using electron-beam tomography or multidetector computed tomography will be performed in the subcohort at years 1 and 4. Clinical cardiovascular outcomes (including acute myocardial infarction, heart failure, arrhythmias, stroke, and peripheral arterial disease [PAD]) will be ascertained every 6 mo during follow-up, and relevant medical records will be centrally adjudicated. Hypertension at entry was defined as either systolic BP ≥140 mmHg, diastolic BP ≥90 mmHg, or use of antihypertensive medications (5). Diabetes was defined as either fasting glucose ≥126 mg/dl, random glucose ≥200 mg/dl, or use of insulin or antidiabetic medication (6).

Study Population and Recruitment

Eligibility criteria. The CRIC Study was designed to include a racially and ethnically diverse group of adult patients who were aged 21 to 74 yr and had mild to moderate CKD and approximately half of whom had diabetes (Table 1). The age and eGFR criteria were specifically designed to facilitate evaluation of the progression and implications of CKD across a wide spectrum of mild to moderate kidney dysfunction and age. Age-based eGFR entry criteria were established to limit the proportion of older individuals who were recruited with age-related diminutions of GFR but otherwise nonprogressive CKD. The level of eGFR used to define eligibility was based on the four-variable Modification of Diet in Renal Disease (MDRD) estimating equation (7), using locally measured serum creatinine calibrated to the Cleveland Clinic laboratory (8).

Exclusion criteria. Selected exclusion criteria were implemented (Table 2). Patients with polycystic kidney disease were excluded because of its distinct pathophysiology and its exclusive focus by another ongoing NIDDK-sponsored study (9). Patients with additional primary renal diseases were excluded when active immunosuppression had been used within 6 mo of enrollment. Patients with significant coexisting illnesses were also excluded, as detailed in Table 2.

Recruitment. The initial protocol called for each of the seven clinical centers to enroll approximately 450 participants each during a 33-mo period (May 2003 through March 2006). In August 2005, after Hurricane Katrina, enrollment at Tulane was halted after 405 participants had been enrolled. Consequently, the recruitment period was extended and recruitment targets at the other six clinical centers were increased. Study enrollment was completed on March 31, 2007. Recruitment strategies varied from center to center and included computerized searches of laboratory databases and hand searches of medical records and referrals from health care providers.

Screening, Enrollment, Follow-up, and Study Data Collection

A total of 5319 participants completed screening visits, at which time consent was obtained and eligibility was determined (Figure 1, Table 1). Of those screened, 4073 were found to be eligible and 3612 completed a baseline visit, defining membership in the cohort. Five individuals with an eGFR above the exclusion level completed the baseline visit in error and are included in our analyses. At the baseline visit, sociodemographic characteristics, medical history, lifestyle behaviors, and current medications were recorded. Standardized BP measurements were obtained using a previously validated protocol (10). Anthropometric measures (height, weight, and mid-abdominal waist circumference) were obtained, and body composition was assessed using bioelectrical impedance analysis techniques. ABI was measured using standard methods (11). A 12-lead electrocardiogram was obtained using standardized methods (12). GFR was assessed by the renal clearance of 125-iodine iothalamate (13) in the subcohort. As detailed in Table 1, a series of questionnaires were administered regarding quality of life, diet, cognitive function, depressive symptoms, and physical activity level. Plasma, urine, and nail samples were collected for initial study measures, and aliquots were also stored for future studies. Additional details regarding visit and contact schedule are provided in Table 1.

Statistical Analysis

The analytical plan for the CRIC Study has been previously described (4). Baseline characteristics are described using means with SD or medians and interquartile ranges for continuous variables, and frequency distribution is described with percentages for categorical variables. Missing values occurred when a participant failed to answer a question on a case report form or when a physical measure was not obtained or a laboratory test was not performed. The analysis for each variable is based on the observed values only. Baseline characteristics are compared between groups using t tests, ANOVA, or χ^2 tests, as appropriate. A two-sided $P \leq 0.05$ was considered statistically significant.

Results

Baseline Demographic and Clinical Characteristics of Participants

The final enrolled cohort has a mean ± SD age of 58.2 ± 11.0 yr with excellent representation of women (46%) and patients

Table 1. Sequence and schedule of CRIC Study clinic visits/contacts and procedures[a]

Parameter	Visit												
	Screening	Baseline	6 mo	12 mo	18 mo	24 mo	30 mo	36 mo	42 mo	48 mo	54 mo	60 mo	
Type of contact	Visit	Visit	Phone	Visit	Phone	Visit	Phone	Visit	Phone	Visit	Phone	Visit	
Informed consent	•												
Medical record consent				•		•		•		•			
Contact information	•	•	•	•	•	•	•	•	•	•	•	•	
Labs: creatinine, glucose	•												
Demographic information	•												
Eligibility confirmation	•												
Medical history		•		•		•		•		•		•	
Genetic blood sample		•		•		•		•		•		•	
Labs: CBC, metabolic panel, lipids		•		•		•		•		•		•	
24-h urine		•		•		•		•		•		•	
BP		•		•		•		•		•		•	
Anthropometric measures		•		•		•		•		•		•	
Ankle brachial index		•		•		•		•		•		•	
Bioelectric impedance assessment		•		•		•		•		•		•	
Nail clippings		•		•		•		•		•		•	
Electrocardiogram		•		•		•		•		•		•	
Echocardiogram				•						•			
EBT or MDCT (one third subcohort)				•						•			
Iothalamate-GFR (one third subcohort)		•				•				•			
Pulse wave velocity						•				•			
Physical assessment		•				•				•			
Medications		•	•	•		•		•		•		•	
KDQOL quality of life (43)		•		•		•		•		•		•	
Diet History Questionnaire (44)		•				•				•			
Mini Mental Status Exam (45)		•				•				•			
MDRD Symptom Index (46)		•		•		•		•		•		•	
Beck Depression Inventory (47)		•				•				•			
Physical Activity (48,49)		•				•				•			
Kansas City Questionnaire (50)				•		•		•		•		•	
Recent medical history		•	•	•	•	•	•	•	•	•	•	•	

[a]CBC, complete blood count; CRIC, Chronic Renal Insufficiency Cohort; EBT, electron-beam tomography; MDCT, multidetector computed tomography; MDRD, Modification of Diet in Renal Disease; KDQOL, Kidney Disease Quality of Life.

with diabetes (47%), consistent with the targeted enrollment goals (Table 3). The cohort is racially and ethnically diverse with 1638 (45%) non-Hispanic white patients, 1651 (46%) non-Hispanic black/African American patients, 169 (5%) Hispanic patients, and 154 (4%) Asian/Pacific Islander/Native American patients. Approximately 33% of the cohort had completed a college education, and 28% had annual incomes <$20,000 (US). Nearly 90% of the cohort had a history of hypertension. Fewer than 25% of the cohort had a self-reported history of coronary disease or PAD. Although the mean systolic and diastolic BPs were approximately 128 mmHg and approximately 71 mmHg, respectively, 47% of participants had a baseline BP >130/80 mmHg at entry. Mean body mass index (BMI) was elevated at 32.1 ± 7.9 kg/m^2 with more than one half of all participants having a BMI >30 kg/m^2. Mean eGFR for the entire cohort was 43.4 ± 13.5 ml/min per 1.73 m^2, and median (IQR) proteinuria was 0.17 g per 24 h (0.07 to 0.81 g per 24 h). Almost 70% of the cohort was taking an angiotensin-converting enzyme inhibitor or an angiotensin receptor blocker. Most participants had an eGFR consistent with National Kidney Foundation's stages 3 and 4 CKD (70 and 18%, respectively) (14).

Several differences also existed between participants with and without diabetes (Table 3). Compared with participants without diabetes, those with diabetes were more likely to be nonwhite and Hispanic and to earn annual incomes <$20,000 but were less likely to have a college education ($P = 0.0001$).

Table 2. Eligibility and exclusion criteria

Eligibility criteria
Age stratum (yr)/eligible eGFR range (ml/min per 1.73 m^2)[a]
21 to 44/20 to 70
45 to 64/20 to 60
65 to 74/20 to 50
Exclusion criteria
institutionalized (*e.g.*, prisoner, nursing home or skilled nursing facility resident)
unable or unwilling to give consent
unlikely or unable to participate in required study procedures
New York Heart Association class III or IV heart failure (baseline)
known cirrhosis
known HIV infection and/or AIDS
pregnant women
previously received dialysis for {my]1 mo
previous organ or bone marrow transplant
received immunosuppressive or other immunotherapy for primary renal disease or systemic vasculitis within the past 6 mo
previous chemotherapy or alkylating agents for systemic cancer other than non-melanoma skin cancer within 2 yr
previous diagnosis of multiple myeloma or renal carcinoma
polycystic kidney disease
current participation in interventional clinical trial or in a research study

[a]Based on simplified Modification of Diet in Renal Disease (MDRD) equation.

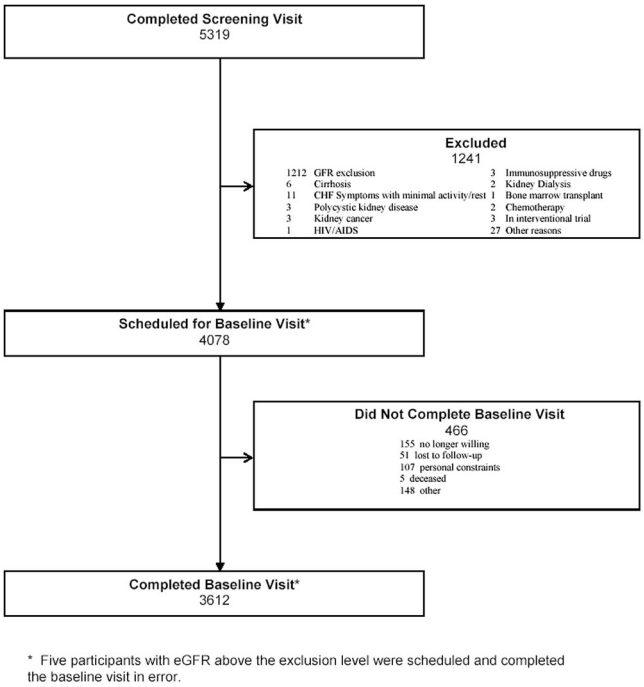

Figure 1. Particpant recruitment and follow-up flow diagram. *Five participants with estimated GFR above the exclusion level were scheduled and completed the baseline visit in error.

Self-reported myocardial infarction/coronary revascularization, congestive heart failure, and PAD were nearly twice as common among participants with diabetes. Participants with diabetes were also more likely to have a history of hypertension, have mean baseline BP >130/80 mmHg, and have a BMI ≥30 ($P = 0.0001$). Furthermore, these participants had a two-fold greater prevalence of an ABI <0.9. Mean eGFR was lower and urine protein higher among participants with diabetes than among those without diabetes.

Baseline Characteristics by eGFR Level

As a result of enrollment strategies, there was relatively even distribution by race across eGFR strata (Table 4). In comparison with those who had higher eGFR, participants with lower eGFR tended to older, female, and Hispanic ($P = 0.0001$). Also, a trend existed between lower eGFR and a higher proportion of annual incomes <$20,000, having only high school level education, BMI >30 kg/m^2, and history of >100 cigarettes. The prevalence of hypertension (and those with mean BP >130/80 mmHg), diabetes, CVD, PAD, and proteinuria were also significantly higher in lower eGFR groups ($P = 0.0001$). With lower eGFR, there were progressive decreases in mean hemoglobin and increases in mean serum phosphorus and total parathyroid hormone ($P = 0.0001$).

Select Anticipated and Actual Recruitment Targets

Recruitment by racial and ethnic groups was similar to anticipated target goals (Table 5). In contrast, the actual recruitment of young participants with (3.99%) and without diabetes (9.51%) was less than the targeted goal of 12.5% for both subgroups (Table 6).

Discussion

The CRIC Study was designed to examine risk factors for CKD progression and CVD incidence and progression among a large, representative cohort of individuals with CKD. The CRIC cohort enrolled a diverse set of participants who had CKD and possessed a broad range of kidney dysfunction and other potentially important prognostic attributes. Recruitment goals regarding race/ethnicity, gender, age, and diabetes status were largely met. The strength of the CRIC Study lies in the diverse characteristics of the assembled cohort and the comprehensive data collection activities that have been designed to address gaps in our understanding of CKD-associated morbidity and mortality and to identify potential targets for trials of preventive therapies.

The baseline findings regarding diabetic status and level of kidney function support that the assembled cohort has characteristics representative of the broader CKD population. As expected, participants with diabetes in the cohort were more likely to have self-reported CVD than those without diabetes.

Table 3. Baseline demographic and clinical characteristics of participants[a]

Variable	Cohort (n = 3612)	Subcohort with iGFR (n = 1288)	Diabetes (n = 1683)	No Diabetes (n = 1929)	P for Diabetes *versus* No Diabetes
Age (yr; mean ± SD)	58.2 ± 11.0	56.1 ± 12.5	59.5 ± 9.8	57.1 ± 11.8	0.0001
Gender (n [%])					0.2516
male	1959 (54)	713 (55)	931 (55)	1028 (53)	
female	1653 (46)	575 (45)	754 (45)	899 (47)	
Racial/ethnic group (n [%])					0.0001
non-Hispanic white	1638 (45)	713 (46)	931 (39)	1028 (51)	0.2516
non-Hispanic black/ African American	1651 (46)	532 (41)	849 (50)	802 (42)	
Hispanic	169 (5)	69 (5)	111 (7)	58 (3)	
other[b]	154 (4)	99 (8)	76 (5)	78 (4)	0.0001
Annual household income (n [%])					0.0001
≤$20,000	1009 (28)	297 (23)	565 (34)	444 (23)	
$20,001 to $50,000	906 (25)	338 (26)	432 (26)	474 (24)	
$50,001 to $100,000	725 (20)	306 (24)	281 (17)	444 (23)	
>$100,000	389 (11)	153 (12)	134 (8)	255 (13)	
no response	583 (16)	193 (15)	271 (16)	312 (16)	
Educational attainment (n [%])					0.0001
<7th grade	60 (2)	16 (1)	41 (2)	19 (1)	
7th to 12th grade	545 (15)	153 (12)	319 (19)	226 (12)	
high school diploma	695 (19)	239 (19)	339 (20)	356 (18)	
vocational degree	184 (5)	64 (5)	98 (6)	86 (4)	
some college	921 (26)	319 (25)	440 (26)	481 (25)	
college graduate	696 (19)	298 (23)	281 (17)	415 (22)	
graduate degree	510 (14)	198 (15)	167 (10)	343 (18)	
Tobacco use (n [%])					
current smoker	494 (14)	151 (12)	212 (13)	282 (15)	0.0733
>100 cigarettes during lifetime	2019 (56)	667 (52)	983 (58)	1036 (54)	0.0057
Medical history (n [%])					
hypertension	3094 (86)	1091 (85)	1552 (92)	1542 (80)	0.0001
MI or coronary revascularization	810 (22)	225 (17)	493 (29)	317 (17)	0.0001
chronic heart failure	357 (10)	86 (7)	245 (15)	112 (6)	0.0001
PAD	250 (7)	80 (6)	181 (11)	69 (4)	0.0001
BP variables					
SBP (mmHg; mean ± SD)	127.7 ± 21.9	127.8 ± 21.3	132.4 ± 22.5	123.6 ± 20.5	0.0001
DBP (mmHg; mean ± SD)	71.4 ± 12.8	72.4 ± 12.7	69.4 ± 12.9	73.1 ± 12.8	0.0001
MAP (mmHg; mean ± SD)	90.2 ± 13.8	90.9±13.2	90.4 ± 13.9	89.9 ± 13.6	0.3113
BP >130/80 mmHg (n [%])	1686 (47)	626 (49)	882 (53)	804 (42)	0.0001
Weight (kg; mean ± SD)	92.0 ± 23.7	89.9 ± 21.2	97.7 ± 24.2	87.1 ± 22.1	0.0001
BMI (kg/m^2; mean ± SD)	32.1 ± 7.9	31.3 ± 7.0	34.1 ± 8.2	30.3 ± 7.2	0.0001
BMI (kg/m^2; n [%])					0.0001
<25.0	607 (17)	234 (18)	179 (11)	428 (22)	
25.0 to 29.9	1017 (28)	380 (30)	388 (23)	629 (33)	0.0001
>30.0	1987 (55)	673 (52)	1118 (67)	869 (45)	
ABI<0.9 (n [%])	526 (15)	173 (14)	335 (20)	191 (10)	0.0001
Kidney function measures					
adjusted serum creatinine (mg/dl; mean ± SD)	1.73 ± 0.57	1.68 ± 0.56	1.80 ± 0.56	1.66 ± 0.56	0.0001
eGFR (ml/min/1.73 m^2; mean ± SD)	43.4 ± 13.5	45.2 ± 14.1	41.4 ± 12.9	45.1 ± 13.8	0.0001
eGFR (ml/min/1.73 m^2; n [%])					
<15	3 (0)	2 (0)	1 (0)	2 (0)	0.0001
15 to 29	664 (18)	206 (16)	351 (21)	313 (16)	
30 to 59	2532 (70)	887 (69)	1197 (71)	1335 (70)	
60 to 89	389 (11)	187 (15)	126 (8)	263 (14)	
>90	8 (0)	4 (0)	4 (0)	4 (0)	
urine protein/24 h (g; median (IQR)	0.17 (0.07 to 0.81)	0.18 (0.07 to 0.90)	0.32 (0.09 to 1.49)	0.11 (0.06 to 0.43)	0.0001
ACEI or ARB therapy (n [%])	2462 (68)	880 (68)	1336 (79)	1126 (58)	0.0001
Lipoproteins (mg/dl; mean ± SD)					
total cholesterol	183.0 ± 44.5	183.8 ± 47.1	177.0 ± 47.2	188.2 ± 41.3	0.0001
LDL cholesterol	102.5 ± 35.0	103.4 ± 36.6	96.4 ± 36.4	107.8 ± 33.7	0.0001
HDL cholesterol	48.1 ± 15.6	47.5 ± 15.7	45.7 ± 13.9	50.2 ± 16.8	0.0001
triglycerides	154.2 ± 115.6	152.2 ± 112.5	166.2 ± 130.3	143.6 ± 99.8	0.0001
Hemoglobin (g/dl; mean ± SD)	12.7 ± 1.8	12.6 ± 1.7	12.1 ± 1.7	13.2 ± 1.7	0.0001
Serum calcium (mg/dl; mean ± SD)	9.2 ± 0.5	9.2 ± 0.5	9.1 ± 0.5	9.2 ± 0.5	0.0001
Serum phosphorus (mg/dl; mean ± SD)	3.7 ± 0.7	3.7 ± 0.7	3.9 ± 0.7	3.6 ± 0.6	0.0001
Total PTH (pg/ml; median [IQR])	53.0 (34.0 to 88.0)	52.9 (34.0 to 85.0)	60.0 (37.1 to 102.4)	48.5 (32.5 to 78.0)	0.0001
Blood glucose (mg/dl; median [IQR])	97.0 (86.0 to 124.0)	97.0 (86.0 to 121.0)	127.0 (100.0 to 163.0)	90.0 (84.0 to 98.0)	0.0001
Glycosylated hemoglobin (%; mean ± SD	6.6 ± 1.6	6.6 ± 1.6	7.7 ± 1.7	5.7 ± 0.5	0.0001

[a]ABI, ankle-brachial index; ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; BMI, body mass index; DBP, diastolic BP; eGFR, estimated GFR; iPTH, intact parathyroid hormone; IQR, interquartile range; MAP, mean arterial pressure; MI, myocardial infarction; PAD, peripheral arterial disease; SB{, systolic BP.
[b]Includes Asian/Pacific Islander and Native American individuals.

Table 4. Baseline characteristics by eGFR level

Variable	eGFR (ml/min per 1.73 m^2)					*P*
	<30	30 to <40	40 to <50	50 to <60	≥60	
n	667	844	968	720	397	
Age (yr; mean ± SD)	58.7 ± 11.2	59.6 ± 11.0	60.0 ± 10.4	57.7 ± 10.1	51.5 ± 11.0	0.0001
Gender (*n* [%])						0.0001
male	311 (47)	440 (52)	568 (59)	406 (56)	226 (57)	
female	356 (53)	404 (48)	400 (41)	314 (44)	171 (43)	
Racial/ethnic group (*n* [%])						0.0673
non-Hispanic white	277 (42)	386 (46)	461 (48)	348 (48)	160 (40)	
non-Hispanic black/African American	303 (45)	387 (46)	430 (44)	319 (44)	202 (51)	
Hispanic	55 (8)	43 (5)	32 (3)	21 (3)	18 (5)	
other[a]	32 (5)	28 (3)	45 (5)	32 (4)	17 (4)	0.0001
Annual household income (*n* [%])						0.1435
≤$20,000	249 (37)	292 (35)	232 (24)	155 (22)	72 (18)	
$20,001 to $50,000	179 (27)	199 (24)	267 (28)	162 (23)	96 (24)	
$50,001 to $100,000	103 (17)	150 (18)	187 (19)	171 (24)	108 (27)	
>$100,000	38 (6)	69 (8)	117 (12)	115 (16)	49 (12)	
no response	93 (14)	134 (16)	165 (17)	117 (16)	72 (18)	
Educational attainment (*n* [%])						0.0001
<7th grade	27 (4)	15 (2)	10 (1)	4 (1)	2 (1)	
7th to 12th grade	126 (18)	160 (19)	143 (15)	82 (11)	27 (7)	
high school diploma	145 (22)	177 (21)	189 (20)	112 (16)	69 (17)	
vocational degree	36 (5)	38 (5)	48 (5)	36 (5)	26 (7)	
some college	162 (24)	224 (27)	228 (24)	192 (27)	112 (28)	
college graduate	106 (16)	146 (17)	188 (19)	172 (24)	82 (21)	
graduate degree	65 (10)	84 (10)	162 (17)	122 (17)	76 (19)	
Tobacco use (*n* [%])						
current smoker	110 (16)	122 (15)	117 (12)	84 (12)	54 (14)	0.0001
>100 cigarettes during lifetime	405 (61)	500 (59)	542 (56)	375 (52)	139 (48)	0.0189
Medical history (*n* [%])						
hypertension	612 (92)	767 (91)	848 (88)	587 (82)	267 (67)	0.0001
diabetes	352 (53)	459 (54)	448 (46)	290 (40)	130 (33)	0.0001
MI or coronary revascularization	170 (26)	227 (27)	227 (23)	131 (18)	51 (13)	0.0001
chronic heart failure	97 (15)	103 (12)	91 (10)	43 (6)	19 (5)	0.0001
PAD	75 (11)	85 (10)	47 (5)	31 (4)	11 (4)	0.0001
BP variables						.
SBP (mmHg; mean ± SD)	130.5 ± 23.6	129.4 ± 23.2	127.7 ± 21.3	125.4 ± 20.2	123.5 ± 20.0	0.0001
DBP (mmHg; mean ± SD)	69.9 ± 13.3	70.0 ± 12.6	71.5 ± 12.7	72.3 ± 12.3	74.9 ± 12.8	0.0001
MAP (mmHg; mean ± SD)	90.1 ± 14.4	89.8 ± 14.0	90.2 ± 13.7	90.0 ± 13.1	91.1 ± 13.6	0.6042
BP >130/80 (mmHg; n [%])	335 (50)	394 (47)	466 (48)	319 (45)	164 (42)	0.0001
Weight (kg; mean ± SD)	89.8 ± 24.8	92.3 ± 23.2	92.5 ± 23.3	93.3 ± 24.1	92.4 ± 22.6	0.0311
BMI (kg/m^2; mean ± SD)	31.9 ± 8.4	32.5 ± 7.9	32.1 ± 7.8	32.2 ± 8.1	31.3 ± 7.1	0.2313
BMI category (kg/m^2; *n* [%])						0.9367
<25.0	134 (20)	128 (15)	150 (15)	121 (17)	74 (19)	
25.0 to 29.9	182 (27)	238 (28)	275 (28)	206 (29)	112 (28)	0.0001
>30	353 (53)	480 (57)	544 (56)	392 (55)	212 (54)	
ABI <0.9	142 (22)	149 (18)	125 (13)	93 (13)	15 (4)	0.0001
Roche adjusted creatinine (mean ± SD)	2.56 ± 0.56	1.90 ± 0.32	1.56 ± 0.23	1.32 ± 0.20	1.14 ± 0.20	0.0001
Urine protein/24 h (g; median [IQR])	0.58 (0.15 to 2.14)	0.26 (0.08 to 1.22)	0.13 (0.07 to 0.60)	0.10 (0.06 to 0.36)	0.10 (0.06 to 0.22)	0.0001
Lipoproteins						
total cholesterol (mg/dl; mean ± SD)	183.3 ± 51.2	182.5 ± 46.2	183.1 ± 42.1	183.2 ± 41.3	183.5 ± 39.6	0.8297
LDL cholesterol (mg/dl; mean ± SD)	99.7 ± 37.9	100.2 ± 35.3	103.1 ± 34.6	104.4 ± 33.3	107.3 ± 32.6	0.0001
HDL cholesterol (mg/dl; mean ± SD)	46.9 ± 15.5	47.4 ± 15.8	48.2 ± 14.9	48.8±16.0	50.2 ± 16.4	0.0004
triglycerides (mg/dl; mean ± SD)	168.1 ± 127.2	163.0 ± 123.4	151.4 ± 99.6	148.5 ± 127.2	129.9 ± 81.6	0.0001
Hemoglobin (g/dl; mean ± SD)	11.8 ± 1.7	12.3 ± 1.7	12.8 ± 1.7	13.2 ± 1.6	13.4 ± 1.6	0.0001
Serum calcium (mg/dl; mean ± SD)	9.1 ± 0.6	9.2 ± 0.5	9.2 ± 0.5	9.2 ± 0.5	9.2 ± 0.4	0.0002
Total iPTH (pg/ml; median [IQR])	105.0 (64.0 to 172.0)	63.9 (41.0 to 100.0)	47.5 (32.0 to 74.0)	41.0 (29.7 to 59.1)	36.0 (27.3 to 50.3)	0.0001
Serum phosphorus (mg/dl; mean ± SD)	4.1 ± 0.8	3.8 ± 0.6	3.6 ± 0.6	3.5 ± 0.6	3.4 ± 0.5	0.0001
Blood glucose (mg/dl; median [IQR])	97.0 (85.0 to 124.0)	98.0 (87.0 to 131.0)	100.0 (88.0 to 127.0)	95.0 (85.0 to 119.0)	94.0 (84.0 to 110.0)	0.0003
Glycosylated hemoglobin (%; mean ± SD)	6.7 ± 1.5	6.8 ± 1.6	6.7 ± 1.5	6.5 ± 1.4	6.3 ± 1.7	0.0001
Serum uric acid (mg/dl; mean ± SD)	8.2 ± 2.0	7.9 ± 1.9	7.3 ± 1.8	6.8 ± 1.6	6.2 ± 1.7	0.0001

[a]Includes Asian/Pacific Islander and Native American individuals.

Table 5. Select anticipated and actual recruitment targets: Race/ethnic target distribution in CRIC Study

Race/Ethnic Group	Anticipated (%)	Actual (%)
Non-Hispanic white	47.50	45.34
Non-Hispanic black	47.50	45.92
Other[a]	5.00	8.75

[a]For the purposes of recruitment goal, other group includes Hispanic, Asian/Pacific Islander, and Native American individuals.

Table 6. Select anticipated and actual recruitment targets: Age- and diabetes-status distribution in CRIC Study

Age Stratum (yr)	Anticipated Recruitment (%)		Actual Recruitment Cohort (%)	
	No Diabetes	Diabetes	No Diabetes	Diabetes
21 to 44	12.50	12.50	9.51	3.99
45 to 64	25.00	25.00	29.72	27.75
65 to 74	12.50	12.50	14.56	14.47

The findings in the CRIC subgroup with diabetes reinforce the findings from clinical trials that indicate that the CVD burden in the ESRD population with diabetes has its beginnings earlier during the course of CKD (15,16). In addition, lower levels of eGFR were associated with a greater burden of CVD. This is consistent with the increasing evidence for the presence and severity of CKD as an independent and graded risk factor for CVD events (3). By using sophisticated measurements of kidney function and subclinical CVD, the CRIC Study will provide insights into the pathophysiology of this relationship and will enable an assessment of both traditional and nontraditional risk factors.

Noteworthy is the high prevalence of several potentially modifiable risk factors in this CKD cohort. Almost half of all participants had a BP level above the recommended goal (17). Suboptimal levels of BP control have been reported in other CKD cohorts (18,19), and the findings in the CRIC cohort reinforce the need to raise awareness of effective BP management in CKD as a public health priority. As well, we observed a high prevalence of obesity among participants with and without diabetes. It has been suggested that higher BMI may be an independent risk factor for CKD (20–22) and progression to ESRD that requires dialysis (23). The modest association between lower eGFR and previous cigarette exposure is consistent with the previously described association of smoking with CKD (24). This relationship is also of particular interest because it may represent another potential risk factor. Longitudinal follow-up of CRIC participants will afford a more rigorous assessment of these newly recognized but less studied risk factors on CVD and CKD outcomes.

We also observed an important association between lower eGFR and both lower socioeconomic status (SES) and lesser educational attainment. It is known that lower SES is associated with ESRD (25,26). Analyses of several cohorts found an association between lower SES and progressive CKD (27–29). The CRIC Study will facilitate evaluation of the impact of SES and educational level in individuals with more advanced stages of CKD and potential mediating pathways that could have important health policy implications.

Previous epidemiologic studies of the relationship between CKD and CVD have come from various sources, including *post hoc* analyses of clinical trials (30–33), large cohort studies focused on non-CKD populations (34–37), and analyses of large datasets from major health care providers (3,38). Despite the important contributions made by these studies, major gaps in our knowledge remain. The CRIC Study will occupy a unique niche because of its use of observational epidemiology in a large cohort of patients with CKD and its use of longitudinal state-of-the-art measurements of kidney function and subclinical CVD. In addition to examining risk factors for CKD and CVD progression, the CRIC Study will facilitate the development of predictive models that identify high-risk groups; the determination of exposure–outcome relationships; and the evaluation of the impact of CKD and progressive CKD on quality of life, functional status, and resource use. Unlike most previous studies, the CRIC Study continues to follow participants after progression to ESRD, thereby providing an important opportunity to study the critical period when patients transition from CKD to ESRD.

Concurrent with the CRIC Study, several ongoing studies are examining risk factors for CKD. The National Health and Nutrition Examination Survey (NHANES) monitors CKD prevalence and risk factors over time (2,39). The National Kidney Foundation's Kidney Evaluation Education Program (KEEP) collects data characterizing CKD in the community among at-risk subgroups (40). The African American Study of Kidney Disease and Hypertension (AASK) (41) is investigating factors that influence CKD progression among black individuals with hypertensive kidney disease. Internationally, the CKD-Japan Cohort Study (CKD-JAC) is in the early stages of follow-up. The information gained from the CRIC Study will be complementary to and extend the important work accomplished by these studies. As an example, compared with the population-based NHANES CKD cohort (2), the CRIC cohort is older and by design has more advanced CKD with more even distribution across eGFR strata, a larger percentage of individuals with diabetes, and a larger representation of black participants to facilitate more robust subgroup analyses.

As with all prospective observational studies, inferences regarding causality will be limited by potential biases and residual confounding. Numerous methodologic strategies have been adopted to minimize these limitations and enhance the robustness of etiologic inferences drawn from this study. Another potential limitation is underrepresentation of young individuals with diabetes. To adapt to this, this group was oversampled for recruitment into the subcohort from which more detailed assessments of kidney function and cardiovascular health will

be obtained. In addition, the less-than-anticipated recruitment of Hispanic individuals will be addressed by the ongoing supplemental recruitment of >330 Hispanic participants at the University of Illinois at Chicago.

The observed low level of proteinuria could also have potential implications for future risk of cardiovascular and renal events; however, the high prevalence of self-reported comorbidities suggests that the cohort is at increased risk for adverse events. Furthermore, in the AASK, there was significant progression of CKD despite relatively low levels of baseline proteinuria (42). It is also important to note that findings from the CRIC Study may not be generalizable to certain types of kidney disease that was poorly represented in the cohort, such as glomerulonephritis. It was not intended for the study to be representative of all patients with CKD; rather, it was designed to be broadly representative of the ESRD population in which diabetes and hypertension are reported as the primary diagnoses for >70% of patients (1). Finally, analyses included self-reported comorbidities, which are subject to inherent limitations with regard to accuracy.

The CRIC Study has assembled a large and diverse CKD cohort with characteristics that area generalizable to CKD populations managed in different practice settings in the United States. Analogous to the Framingham Heart and Atherosclerosis Risk in Communities Studies, the CRIC Study will use observational epidemiology to answer key questions about the cause, prognosis, management, clinical outcomes, health service use, and quality of life in CKD. The knowledge generated from the CRIC Study will lead to the formulation of hypotheses regarding potentially modifiable pathways that will serve as the basis for targeted interventional trials that focus on reducing the burden of CKD and CVD.

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None.

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Appendix B

STATA Output for Baseline Analyses

```
      name:  <unnamed>
       log:  R:\CRIC\July_2011\1.log
  log type:  text
 opened on:  14 Aug 2011, 07:47:50

. set more off

. set linesize 120

.
. use "R:\CRIC\July_2011\MS004\ms004_analytical_data_final.dta", clear

. describe

Contains data from R:\CRIC\July_2011\MS004\ms004_analytical_data_final.dta
  obs:         3,612
 vars:            42
 size:       595,980
-------------------------------------------------------------------------------------------------
              storage  display     value
variable name   type   format      label      variable label
-------------------------------------------------------------------------------------------------
pid             str8   %8s                    pid
TOTAL_PTH       double %10.0g                 Total Parathyroid Hormone
iGFR_baseline   byte   %8.0g       IGFRCOHORT
                                              iGFR subcohort
sex             byte   %8.0g       SEX
Race_ethnicit~2 byte   %8.0g       RACE_ETHNICITY_CAT2A
                                              Race Ethnicity Category 2
income_cat_1    byte   %8.0g       INCOME_CAT_1A
                                              Income Category 1
edu_cat_1       byte   %8.0g       EDU_CAT_1A
                                              Education Category 1(categorical)
diabetes_at_b~e byte   %8.0g       DM         Diabetes at baseline
vnum            byte   %8.0g                  vnum
tg              int    %8.0g                  Triglycerides
tc              int    %8.0g                  Total Cholesterol
hdl             int    %8.0g                  High-density Lipoprotein (mg/dL)
ldl             double %10.0g                 Low-density Lipoprotein (mg/dL)
calcium         double %10.0g                 CALCIUM (mg/dL)
glucose         int    %8.0g                  GLUCOSE (mg/dL)
HEMOGLOBIN_A1C  double %10.0g                 HEMOGLOBIN_A1C (%)
phosphate       double %10.0g                 PHOSPHATE (mg/dL)
URIC_ACID       double %10.0g                 URIC_ACID (mg/dL)
age             double %10.0g                 Participant Age
smoke100        byte   %8.0g       SMOKE100A
                                              Smoked 100 Cigarettes
smokenow        byte   %8.0g       SMOKENOW   Current Smoker
mirevasc        byte   %8.0g       YESNO      Myocardial Infarction/Prior Revasc (Y/N)
pvd             byte   %8.0g       YESNO      Peripheral Vascular Disease (Y/N)
chf             byte   %8.0g       YESNO      Congestive Heart Failure (Y/N)
weight          double %10.0g                 Weight (kg)
bmi             double %10.0g                 Body Mass Index (kg/m^2)
systolic        double %10.0g                 Systolic BP (mmHg)
diastolic       double %10.0g                 Diastolic BP (mmHg)
hibp            byte   %8.0g       YESNO      High Blood Pressure(Binary)
hypertension    byte   %8.0g       YESNO      Hypertension (y/n)
map             double %10.0g                 Mean Arterial Pressure
CBCHemoglobin   double %10.0g                 CBC Hemoglobin (g/dL)
UPROTEIN24H     double %10.0g                 24H Urine Protein (g/24H)
bmi_cat_2       byte   %8.0g                  BMI Category 2
eGFR_Roche      double %10.0g                 Estimated Glomerular Filtration Rate (mg/dL)
eGFR_Roche_cat3 byte   %8.0g       EGFR_ROCHE_CAT3A
                                              eGFR category 3
egfr_roche_ca~e byte   %8.0g
scr_roche       double %10.0g
acearb          byte   %8.0g                  ACE inh or ARB
abicat          byte   %8.0g       ABICAT     Lowest ABI <0.9
race_ethnicit~3 byte   %8.0g       RACE3CAT
age_screening~t byte   %8.0g       AGE        categorical age at Screening visit
-------------------------------------------------------------------------------------------------
```

```
-------------------------
Sorted by:

.
. tab diabetes_at_baseline

Diabetes at |
   baseline |      Freq.     Percent        Cum.
------------+-----------------------------------
No diabetes |      1,927       53.35       53.35
   Diabetes |      1,685       46.65      100.00
------------+-----------------------------------
      Total |      3,612      100.00

.
. summarize age

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |      3612    58.24859    10.98689   21.15733   75.15342

. summarize age if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |      1288    56.12618    12.45532   21.21436   75.15342

. summarize age if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |      1685    59.53227    9.782761   22.05753   75.14281

. summarize age if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |      1927    57.12612    11.82959   21.15733   75.15342

. oneway age diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      5204.53737      1   5204.53737     43.62     0.0000
 Within groups      430685.627   3610   119.303498
------------------------------------------------------------------------
    Total           435890.164   3611    120.71176

Bartlett's test for equal variances:  chi2(1) =  63.9134  Prob>chi2 = 0.000

.
. * tab *
. * tab * if iGFR_baseline==1
. * tab * diabetes_at_baseline, col
.
. * summarize *
. * summarize * if iGFR_baseline==1
. * summarize * if diabetes_at_baseline==1
. * summarize * if diabetes_at_baseline==0
. * oneway   * diabetes_at_baseline
.
. tab sex

        sex |      Freq.     Percent        Cum.
------------+-----------------------------------
       Male |      1,959       54.24       54.24
     Female |      1,653       45.76      100.00
------------+-----------------------------------
      Total |      3,612      100.00
```

```
. tab sex if iGFR_baseline==1

        sex |      Freq.     Percent        Cum.
------------+-----------------------------------
       Male |        713       55.36       55.36
     Female |        575       44.64      100.00
------------+-----------------------------------
      Total |      1,288      100.00

. tab sex diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

           | Diabetes at baseline
       sex | No diabet   Diabetes |     Total
-----------+----------------------+----------
      Male |     1,028        931 |     1,959
           |     53.35      55.25 |     54.24
-----------+----------------------+----------
    Female |       899        754 |     1,653
           |     46.65      44.75 |     45.76
-----------+----------------------+----------
     Total |     1,927      1,685 |     3,612
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   1.3144   Pr = 0.252

.
. tab Race_ethnicity_cat2

    Race Ethnicity |
        Category 2 |      Freq.     Percent        Cum.
-------------------+-----------------------------------
Non-Hispanic White |      1,638       45.35       45.35
Non-Hispanic Black |      1,651       45.71       91.06
          Hispanic |        169        4.68       95.74
             Other |        154        4.26      100.00
-------------------+-----------------------------------
             Total |      3,612      100.00

. tab Race_ethnicity_cat2 if iGFR_baseline==1

    Race Ethnicity |
        Category 2 |      Freq.     Percent        Cum.
-------------------+-----------------------------------
Non-Hispanic White |        588       45.65       45.65
Non-Hispanic Black |        532       41.30       86.96
          Hispanic |         69        5.36       92.31
             Other |         99        7.69      100.00
-------------------+-----------------------------------
             Total |      1,288      100.00

. tab Race_ethnicity_cat2 diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

    Race Ethnicity | Diabetes at baseline
        Category 2 | No diabet   Diabetes |     Total
-------------------+----------------------+----------
Non-Hispanic White |       989        649 |     1,638
                   |     51.32      38.52 |     45.35
```

```
------------------+----------------------+----------
Non-Hispanic Black |       802        849 |     1,651
                   |     41.62      50.39 |     45.71
------------------+----------------------+----------
          Hispanic |        58        111 |       169
                   |      3.01       6.59 |      4.68
------------------+----------------------+----------
             Other |        78         76 |       154
                   |      4.05       4.51 |      4.26
------------------+----------------------+----------
             Total |     1,927      1,685 |     3,612
                   |    100.00     100.00 |    100.00

          Pearson chi2(3) =  72.6716   Pr = 0.000

.
. tab income_cat_1

   Income Category 1 |      Freq.     Percent        Cum.
---------------------+-----------------------------------
    $20,000 or under |      1,009       27.93       27.93
   $20,001 - $50,000 |        906       25.08       53.02
  $50,000 - $100,000 |        725       20.07       73.09
  More than $100,000 |        389       10.77       83.86
Don't wish to answer |        583       16.14      100.00
---------------------+-----------------------------------
               Total |      3,612      100.00

. tab income_cat_1 if iGFR_baseline==1

   Income Category 1 |      Freq.     Percent        Cum.
---------------------+-----------------------------------
    $20,000 or under |        297       23.06       23.06
   $20,001 - $50,000 |        338       26.24       49.30
  $50,000 - $100,000 |        306       23.76       73.06
  More than $100,000 |        154       11.96       85.02
Don't wish to answer |        193       14.98      100.00
---------------------+-----------------------------------
               Total |      1,288      100.00

. tab income_cat_1 diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

                     | Diabetes at baseline
   Income Category 1 | No diabet   Diabetes |     Total
---------------------+----------------------+----------
    $20,000 or under |       444        565 |     1,009
                     |     23.04      33.53 |     27.93
---------------------+----------------------+----------
   $20,001 - $50,000 |       474        432 |       906
                     |     24.60      25.64 |     25.08
---------------------+----------------------+----------
  $50,000 - $100,000 |       444        281 |       725
                     |     23.04      16.68 |     20.07
---------------------+----------------------+----------
  More than $100,000 |       253        136 |       389
                     |     13.13       8.07 |     10.77
---------------------+----------------------+----------
Don't wish to answer |       312        271 |       583
                     |     16.19      16.08 |     16.14
---------------------+----------------------+----------
               Total |     1,927      1,685 |     3,612
                     |    100.00     100.00 |    100.00

          Pearson chi2(4) =  75.3022   Pr = 0.000
```

```
.
. tab edu_cat_1

      Education Category 1(categorical) |      Freq.     Percent        Cum.
----------------------------------------+-----------------------------------
                   6th grade or less |         60        1.66        1.66
7th to 12th grade, no highschool diplom |        545       15.09       16.75
     High school graduate or equivalent |        695       19.25       36.00
  Technical or vocational school degree |        184        5.10       41.10
Some college education, but not complet |        921       25.51       66.60
                     College graduate |        696       19.27       85.88
Professional or graduate degree(e.g. Ma |        510       14.12      100.00
----------------------------------------+-----------------------------------
                                  Total |      3,611      100.00

. tab edu_cat_1, missing

      Education Category 1(categorical) |      Freq.     Percent        Cum.
----------------------------------------+-----------------------------------
                   6th grade or less |         60        1.66        1.66
7th to 12th grade, no highschool diplom |        545       15.09       16.75
     High school graduate or equivalent |        695       19.24       35.99
  Technical or vocational school degree |        184        5.09       41.09
Some college education, but not complet |        921       25.50       66.58
                     College graduate |        696       19.27       85.85
Professional or graduate degree(e.g. Ma |        510       14.12       99.97
                                      . |          1        0.03      100.00
----------------------------------------+-----------------------------------
                                  Total |      3,612      100.00

. tab edu_cat_1 if iGFR_baseline==1

      Education Category 1(categorical) |      Freq.     Percent        Cum.
----------------------------------------+-----------------------------------
                   6th grade or less |         16        1.24        1.24
7th to 12th grade, no highschool diplom |        153       11.89       13.13
     High school graduate or equivalent |        239       18.57       31.70
  Technical or vocational school degree |         64        4.97       36.67
Some college education, but not complet |        319       24.79       61.46
                     College graduate |        298       23.15       84.62
Professional or graduate degree(e.g. Ma |        198       15.38      100.00
----------------------------------------+-----------------------------------
                                  Total |      1,287      100.00

. tab edu_cat_1 diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

   Education Category | Diabetes at baseline
       1(categorical) | No diabet   Diabetes |     Total
----------------------+----------------------+----------
    6th grade or less |        19         41 |        60
                      |      0.99       2.43 |      1.66
----------------------+----------------------+----------
7th to 12th grade, no |       226        319 |       545
                      |     11.73      18.93 |     15.09
----------------------+----------------------+----------
High school graduate  |       356        339 |       695
                      |     18.48      20.12 |     19.25
----------------------+----------------------+----------
Technical or vocation |        86         98 |       184
                      |      4.47       5.82 |      5.10
----------------------+----------------------+----------
Some college educatio |       481        440 |       921
                      |     24.97      26.11 |     25.51
----------------------+----------------------+----------
```

```
     College graduate |       415        281 |       696
                      |     21.55      16.68 |     19.27
----------------------+----------------------+----------
Professional or gradu |       343        167 |       510
                      |     17.81       9.91 |     14.12
----------------------+----------------------+----------
                Total |     1,926      1,685 |     3,611
                      |    100.00     100.00 |    100.00

          Pearson chi2(6) =  97.8475   Pr = 0.000

.
. tab smokenow

    Current Smoker |      Freq.     Percent        Cum.
-------------------+-----------------------------------
Not current smoker |      3,118       86.32       86.32
Yes current smoker |        494       13.68      100.00
-------------------+-----------------------------------
             Total |      3,612      100.00

. tab smokenow if iGFR_baseline==1

    Current Smoker |      Freq.     Percent        Cum.
-------------------+-----------------------------------
Not current smoker |      1,136       88.20       88.20
Yes current smoker |        152       11.80      100.00
-------------------+-----------------------------------
             Total |      1,288      100.00

. tab smokenow diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

                   | Diabetes at baseline
    Current Smoker | No diabet   Diabetes |     Total
-------------------+----------------------+----------
Not current smoker |     1,645      1,473 |     3,118
                   |     85.37      87.42 |     86.32
-------------------+----------------------+----------
Yes current smoker |       282        212 |       494
                   |     14.63      12.58 |     13.68
-------------------+----------------------+----------
             Total |     1,927      1,685 |     3,612
                   |    100.00     100.00 |    100.00

          Pearson chi2(1) =   3.2078   Pr = 0.073

.
. tab smoke100

 Smoked 100 |
 Cigarettes |      Freq.     Percent        Cum.
------------+-----------------------------------
 Non-Smoker |      1,593       44.10       44.10
     Smoker |      2,019       55.90      100.00
------------+-----------------------------------
      Total |      3,612      100.00

. tab smoke100 if iGFR_baseline==1

 Smoked 100 |
 Cigarettes |      Freq.     Percent        Cum.
------------+-----------------------------------
 Non-Smoker |        621       48.21       48.21
     Smoker |        667       51.79      100.00
```

```
------------+-----------------------------------
      Total |      1,288      100.00

. tab smoke100 diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Smoked 100 | Diabetes at baseline
Cigarettes | No diabet   Diabetes |     Total
-----------+----------------------+----------
Non-Smoker |       891        702 |     1,593
           |     46.24      41.66 |     44.10
-----------+----------------------+----------
    Smoker |     1,036        983 |     2,019
           |     53.76      58.34 |     55.90
-----------+----------------------+----------
     Total |     1,927      1,685 |     3,612
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =   7.6356   Pr = 0.006

.
. * Generate current smoking variable for subjects who smoked > 100 cigs in lifetime
. * gen smoker = (10*smoke100) + smokenow
. * tab smoker, missing
. * recode smoker(0=.)
. * label define smoker  10"Ex-smoker" 11"Somes Now"
. * label values smoker smoker
. * label var smoker "Currently smoking, excl <100 cigs in life"
. * tab smoker, missing
.
. tab hypertension

Hypertensio |
    n (y/n) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |        516       14.29       14.29
        Yes |      3,094       85.71      100.00
------------+-----------------------------------
      Total |      3,610      100.00

. tab hypertension if iGFR_baseline==1

Hypertensio |
    n (y/n) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |        197       15.30       15.30
        Yes |      1,091       84.70      100.00
------------+-----------------------------------
      Total |      1,288      100.00

. tab hypertension diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Hypertensi | Diabetes at baseline
  on (y/n) | No diabet   Diabetes |     Total
-----------+----------------------+----------
        No |       384        132 |       516
           |     19.94       7.84 |     14.29
-----------+----------------------+----------
```

```
       Yes |     1,542      1,552 |     3,094
           |     80.06      92.16 |     85.71
-----------+----------------------+----------
     Total |     1,926      1,684 |     3,610
           |    100.00     100.00 |    100.00

          Pearson chi2(1) = 107.3618   Pr = 0.000

.
. tab mirevasc

 Myocardial |
Infarction/ |
      Prior |
     Revasc |
      (Y/N) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |      2,802       77.57       77.57
        Yes |        810       22.43      100.00
------------+-----------------------------------
      Total |      3,612      100.00

. tab mirevasc if iGFR_baseline==1

 Myocardial |
Infarction/ |
      Prior |
     Revasc |
      (Y/N) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |      1,063       82.53       82.53
        Yes |        225       17.47      100.00
------------+-----------------------------------
      Total |      1,288      100.00

. tab mirevasc diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Myocardial |
Infarction |
    /Prior |
    Revasc | Diabetes at baseline
     (Y/N) | No diabet   Diabetes |     Total
-----------+----------------------+----------
        No |     1,610      1,192 |     2,802
           |     83.55      70.74 |     77.57
-----------+----------------------+----------
       Yes |       317        493 |       810
           |     16.45      29.26 |     22.43
-----------+----------------------+----------
     Total |     1,927      1,685 |     3,612
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =  84.7656   Pr = 0.000

.
. tab chf

 Congestive |
     Heart |
   Failure |
      (Y/N) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |      3,255       90.12       90.12
        Yes |        357        9.88      100.00
```

```
------------+-----------------------------------
      Total |      3,612      100.00

. tab chf if iGFR_baseline==1

 Congestive |
      Heart |
    Failure |
      (Y/N) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |      1,202       93.32       93.32
        Yes |         86        6.68      100.00
------------+-----------------------------------
      Total |      1,288      100.00

. tab chf diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Congestive |
     Heart |
   Failure | Diabetes at baseline
     (Y/N) | No diabet   Diabetes |     Total
-----------+----------------------+----------
        No |     1,815      1,440 |     3,255
           |     94.19      85.46 |     90.12
-----------+----------------------+----------
       Yes |       112        245 |       357
           |      5.81      14.54 |      9.88
-----------+----------------------+----------
     Total |     1,927      1,685 |     3,612
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =  76.8832   Pr = 0.000

.
. tab pvd

 Peripheral |
   Vascular |
    Disease |
      (Y/N) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |      3,362       93.08       93.08
        Yes |        250        6.92      100.00
------------+-----------------------------------
      Total |      3,612      100.00

. tab pvd if iGFR_baseline==1

 Peripheral |
   Vascular |
    Disease |
      (Y/N) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |      1,208       93.79       93.79
        Yes |         80        6.21      100.00
------------+-----------------------------------
      Total |      1,288      100.00

. tab pvd diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
```

```
| column percentage |
+-------------------+

Peripheral |
  Vascular |
   Disease | Diabetes at baseline
     (Y/N) | No diabet   Diabetes |     Total
-----------+----------------------+----------
        No |     1,858      1,504 |     3,362
           |     96.42      89.26 |     93.08
-----------+----------------------+----------
       Yes |        69        181 |       250
           |      3.58      10.74 |      6.92
-----------+----------------------+----------
     Total |     1,927      1,685 |     3,612
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =  71.5577   Pr = 0.000

.
. summarize systolic

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |      3598    127.6822    21.91062      72.67     242.67

. summarize systolic if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |      1283    127.8177    21.26446      80.67     219.33

. summarize systolic if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |      1676    132.4087    22.54509         76     242.67

. summarize systolic if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |      1922    123.5606    20.47546      72.67        214

. oneway   systolic diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      70092.3267      1   70092.3267    152.14     0.0000
 Within groups      1656739.09   3596    460.71721
------------------------------------------------------------------------
    Total           1726831.41   3597   480.075455

Bartlett's test for equal variances:  chi2(1) =  16.6354  Prob>chi2 = 0.000

.
. summarize diastolic

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |      3593     71.3915    12.81669         34     138.67

. summarize diastolic if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |      1282    72.38408    12.65465      39.33        116

. summarize diastolic if diabetes_at_baseline==1
```

```
    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |      1673    69.39751    12.75837         34     138.67

. summarize diastolic if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |      1920    73.12897     12.6161      35.33     138.67

. oneway   diastolic diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups        12447.91      1     12447.91     77.39     0.0000
 Within groups      577601.013   3591   160.846843
------------------------------------------------------------------------
    Total           590048.923   3592   164.267518

Bartlett's test for equal variances:  chi2(1) =   0.2248  Prob>chi2 = 0.635

.
. summarize map

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |      3593    90.15213    13.76471      53.78     161.78

. summarize map if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |      1282    90.85255    13.21406   57.11333   145.1133

. summarize map if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |      1673    90.40123    13.93872   56.66667     161.78

. summarize map if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |      1920    89.93508    13.61119      53.78   160.4467

. oneway   map diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      194.269325      1   194.269325      1.03     0.3113
 Within groups      680371.822   3591   189.465837
------------------------------------------------------------------------
    Total           680566.091   3592   189.467175

Bartlett's test for equal variances:  chi2(1) =   1.0111  Prob>chi2 = 0.315

.
. tab hibp

 High Blood |
Pressure(Bi |
      nary) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |      1,912       53.14       53.14
        Yes |      1,686       46.86      100.00
------------+-----------------------------------
      Total |      3,598      100.00
```

```
. tab hibp if iGFR_baseline==1

 High Blood |
Pressure(Bi |
      nary) |      Freq.     Percent        Cum.
------------+-----------------------------------
         No |        657       51.21       51.21
        Yes |        626       48.79      100.00
------------+-----------------------------------
      Total |      1,283      100.00

. tab hibp diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

High Blood |
Pressure(B | Diabetes at baseline
    inary) | No diabet   Diabetes |     Total
-----------+----------------------+----------
        No |     1,118        794 |     1,912
           |     58.17      47.37 |     53.14
-----------+----------------------+----------
       Yes |       804        882 |     1,686
           |     41.83      52.63 |     46.86
-----------+----------------------+----------
     Total |     1,922      1,676 |     3,598
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =  41.8888   Pr = 0.000

.
. summarize weight

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |      3606     92.0198    23.67658       32.4      220.9

. summarize weight if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |      1288    89.88773    21.19833       40.2      195.1

. summarize weight if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |      1680    97.69393    24.19955       40.2      206.6

. summarize weight if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |      1926     87.0704    22.05507       32.4      220.9

. oneway   weight diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      101269.115      1   101269.115    190.13     0.0000
 Within groups      1919623.15   3604   532.636834
------------------------------------------------------------------------
    Total           2020892.27   3605   560.580379

Bartlett's test for equal variances:  chi2(1) =  15.4822  Prob>chi2 = 0.000
```

```
.
. summarize bmi

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |      3602    32.07927    7.925037   14.59011   88.01366

. summarize bmi if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |      1287    31.29089    6.973046   15.41241   73.75553

. summarize bmi if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |      1678    34.14999    8.226703   15.99768   88.01366

. summarize bmi if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |      1924    30.27332    7.182269   14.59011   82.83681

. oneway   bmi diabetes_at_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      13470.1511      1   13470.1511    227.99     0.0000
 Within groups      212695.034   3600   59.0819539
------------------------------------------------------------------------
    Total           226165.185   3601   62.8062164

Bartlett's test for equal variances:  chi2(1) =  33.1193  Prob>chi2 = 0.000

.
. bysort bmi_cat_2: summarize bmi

-------------------------------------------------------------------------------------------------------
-------------------------
-> bmi_cat_2 = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |       597    22.44584    2.023514   14.59011   24.99901

-------------------------------------------------------------------------------------------------------
-------------------------
-> bmi_cat_2 = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |      1018    27.62509    1.408869   25.00499   29.99784

-------------------------------------------------------------------------------------------------------
-------------------------
-> bmi_cat_2 = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |      1987    37.25568     6.83807    30.0073   88.01366


. label define bmi_cat_2 1"<25" 2"25-30" 3">30"

. label values bmi_cat_2 bmi_cat_2

. tab bmi_cat_2
```

```
        BMI |
 Category 2 |      Freq.     Percent        Cum.
------------+-----------------------------------
        <25 |        607       16.81       16.81
      25-30 |      1,018       28.18       44.99
        >30 |      1,987       55.01      100.00
------------+-----------------------------------
      Total |      3,612      100.00

. tab bmi_cat_2 if iGFR_baseline==1

        BMI |
 Category 2 |      Freq.     Percent        Cum.
------------+-----------------------------------
        <25 |        234       18.17       18.17
      25-30 |        381       29.58       47.75
        >30 |        673       52.25      100.00
------------+-----------------------------------
      Total |      1,288      100.00

. tab bmi_cat_2 diabetes_at_baseline, col chi

+--------------------+
| Key                |
|--------------------|
|     frequency      |
| column percentage  |
+--------------------+

       BMI | Diabetes at baseline
Category 2 | No diabet   Diabetes |     Total
-----------+----------------------+----------
       <25 |       428        179 |       607
           |     22.21      10.62 |     16.81
-----------+----------------------+----------
     25-30 |       630        388 |     1,018
           |     32.69      23.03 |     28.18
-----------+----------------------+----------
       >30 |       869      1,118 |     1,987
           |     45.10      66.35 |     55.01
-----------+----------------------+----------
     Total |     1,927      1,685 |     3,612
           |    100.00     100.00 |    100.00

          Pearson chi2(2) = 175.4490   Pr = 0.000

.
. tab abicat

 Lowest ABI |
       <0.9 |      Freq.     Percent        Cum.
------------+-----------------------------------
      >=0.9 |      2,976       83.60       83.60
       <0.9 |        584       16.40      100.00
------------+-----------------------------------
      Total |      3,560      100.00

. tab abicat if iGFR_baseline==1

 Lowest ABI |
       <0.9 |      Freq.     Percent        Cum.
------------+-----------------------------------
      >=0.9 |      1,082       84.80       84.80
       <0.9 |        194       15.20      100.00
------------+-----------------------------------
      Total |      1,276      100.00

. tab abicat diabetes_at_baseline, col chi

+--------------------+
| Key                |
```

```
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Lowest ABI | Diabetes at baseline
      <0.9 | No diabet   Diabetes |     Total
-----------+----------------------+----------
     >=0.9 |     1,701      1,275 |     2,976
           |     88.87      77.46 |     83.60
-----------+----------------------+----------
      <0.9 |       213        371 |       584
           |     11.13      22.54 |     16.40
-----------+----------------------+----------
     Total |     1,914      1,646 |     3,560
           |    100.00     100.00 |    100.00

          Pearson chi2(1) =  84.0273   Pr = 0.000

.
. summarize scr_roche

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |      3596    1.729818    .5705031     .54885    7.85751

. summarize scr_roche if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |      1286    1.680576    .5621269     .63798    4.38144

. summarize scr_roche if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |      1679    1.803252    .5647991     .54885    4.38144

. summarize scr_roche if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |      1917    1.665501    .5678475     .63798    7.85751

. oneway   scr_roche diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      16.9840245      1   16.9840245     52.94     0.0000
 Within groups      1153.09438   3594   .320838726
------------------------------------------------------------------------
    Total            1170.0784   3595   .325473826

Bartlett's test for equal variances:  chi2(1) =   0.0518  Prob>chi2 = 0.820

.
. summarize eGFR_Roche

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
  eGFR_Roche |      3596    43.39008    13.51411   7.004488   113.9882

. summarize eGFR_Roche if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
  eGFR_Roche |      1286    45.17029     14.0768   13.43334   97.82357

. summarize eGFR_Roche if diabetes_at_baseline==1
```

```
    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
  eGFR_Roche |      1679     41.4218    12.93277   13.43334   113.9882

. summarize eGFR_Roche if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
  eGFR_Roche |      1917    45.11399    13.77763   7.004488   93.68277

. oneway   eGFR_Roche diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      12201.7063      1   12201.7063     68.06     0.0000
 Within groups      644357.701   3594   179.287062
------------------------------------------------------------------------
    Total           656559.407   3595   182.631268

Bartlett's test for equal variances:  chi2(1) =   7.1380  Prob>chi2 = 0.008

.
. tab eGFR_Roche_cat3

   eGFR category 3 |      Freq.     Percent        Cum.
-------------------+-----------------------------------
      less than 15 |          3        0.08        0.08
15 to less than 30 |        664       18.46       18.55
30 to less than 60 |      2,532       70.41       88.96
60 to less than 90 |        389       10.82       99.78
   Greater than 90 |          8        0.22      100.00
-------------------+-----------------------------------
             Total |      3,596      100.00

. tab eGFR_Roche_cat3  if iGFR==1

   eGFR category 3 |      Freq.     Percent        Cum.
-------------------+-----------------------------------
      less than 15 |          2        0.16        0.16
15 to less than 30 |        206       16.02       16.17
30 to less than 60 |        887       68.97       85.15
60 to less than 90 |        187       14.54       99.69
   Greater than 90 |          4        0.31      100.00
-------------------+-----------------------------------
             Total |      1,286      100.00

. tab eGFR_Roche_cat3  diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

                   | Diabetes at baseline
   eGFR category 3 | No diabet   Diabetes |     Total
-------------------+----------------------+----------
      less than 15 |         2          1 |         3
                   |      0.10       0.06 |      0.08
-------------------+----------------------+----------
15 to less than 30 |       313        351 |       664
                   |     16.33      20.91 |     18.46
-------------------+----------------------+----------
30 to less than 60 |     1,335      1,197 |     2,532
                   |     69.64      71.29 |     70.41
-------------------+----------------------+----------
60 to less than 90 |       263        126 |       389
                   |     13.72       7.50 |     10.82
-------------------+----------------------+----------
```

```
   Greater than 90 |          4           4 |          8
                   |       0.21        0.24 |       0.22
-------------------+----------------------+----------
             Total |      1,917       1,679 |      3,596
                   |     100.00      100.00 |     100.00

          Pearson chi2(4) =  42.7139   Pr = 0.000

.
. summarize UPROTEIN24H, detail

                    24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%        .0216       .0076755
 5%      .035233         .01275
10%        .0462           .013       Obs                3424
25%         .072          .0138       Sum of Wgt.        3424

50%     .1700089                      Mean           .9644493
                        Largest       Std. Dev.      2.163381
75%     .8066043       20.10376
90%      2.68424         21.528       Variance       4.680217
95%     4.385258        23.8038       Skewness       5.012783
99%      11.9328       30.11958       Kurtosis        37.9539

. summarize UPROTEIN24H if iGFR_baseline==1, detail

                    24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%     .0206897       .0076755
 5%       .03265         .01275
10%       .04635           .013       Obs                1228
25%     .0748787       .0145895       Sum of Wgt.        1228

50%     .1829864                      Mean           1.048534
                        Largest       Std. Dev.      2.219347
75%     .8973083         17.313
90%       3.0932        17.7375       Variance       4.925502
95%     4.739745       20.05677       Skewness       4.248602
99%      12.1771       20.10376       Kurtosis       25.96647

. summarize UPROTEIN24H if diabetes_at_baseline==1, detail

                    24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%     .0232727         .01275
 5%        .0411          .0138
10%         .054       .0169412       Obs                1593
25%     .0924642       .0171636       Sum of Wgt.        1593

50%      .323103                      Mean           1.428979
                        Largest       Std. Dev.      2.782309
75%     1.485453       20.10376
90%     3.865888         21.528       Variance       7.741246
95%      6.59932        23.8038       Skewness       4.006219
99%        14.82       30.11958       Kurtosis       24.47604

. summarize UPROTEIN24H if diabetes_at_baseline==0, detail

                    24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%     .0196129       .0076755
 5%     .0314449           .013
10%     .0426762       .0145895       Obs                1831
25%        .0628       .0159319       Sum of Wgt.        1831

50%     .1089649                      Mean           .5603008
```

```
                        Largest       Std. Dev.      1.291735
75%     .4294531         11.144
90%        1.482        14.1218       Variance       1.668579
95%       2.8044        15.8556       Skewness       5.799735
99%        6.394       18.90536       Kurtosis       53.80757

. oneway   UPROTEIN24H diabetes_at_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups        642.8182      1     642.8182    143.05     0.0000
 Within groups      15377.5632   3422    4.4937356
------------------------------------------------------------------------
    Total           16020.3814   3423    4.6802166

Bartlett's test for equal variances:  chi2(1) = 946.8702  Prob>chi2 = 0.000

.
. label values acearb YESNO

. tab acearb

 ACE inh or |
       ARB |      Freq.     Percent        Cum.
------------+-----------------------------------
        No |      1,150       31.84       31.84
       Yes |      2,462       68.16      100.00
------------+-----------------------------------
     Total |      3,612      100.00

. tab acearb if iGFR_baseline==1

 ACE inh or |
       ARB |      Freq.     Percent        Cum.
------------+-----------------------------------
        No |        408       31.68       31.68
       Yes |        880       68.32      100.00
------------+-----------------------------------
     Total |      1,288      100.00

. tab acearb diabetes_at_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

ACE inh or | Diabetes at baseline
       ARB | No diabet   Diabetes |     Total
-----------+----------------------+----------
        No |       801        349 |     1,150
           |     41.57      20.71 |     31.84
-----------+----------------------+----------
       Yes |     1,126      1,336 |     2,462
           |     58.43      79.29 |     68.16
-----------+----------------------+----------
     Total |     1,927      1,685 |     3,612
           |    100.00     100.00 |    100.00

          Pearson chi2(1) = 180.1629   Pr = 0.000

.
. summarize tc

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |      3602    183.0564    44.52696         76        571
```

```
. summarize tc if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |      1288    183.6266    46.98261         77        571

. summarize tc if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |      1682    176.9762    47.07712         76        571

. summarize tc if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |      1920    188.3828    41.45193         77        436

. oneway   tc diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      116652.878      1   116652.878     59.80     0.0000
 Within groups      7022870.68   3600   1950.79741
------------------------------------------------------------------------
    Total           7139523.56   3601   1982.65025

Bartlett's test for equal variances:  chi2(1) =  29.0971  Prob>chi2 = 0.000

.
. summarize ldl

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |      3597    102.6336    35.25909         15        295

. summarize ldl if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |      1287    103.4336    36.50073         15        250

. summarize ldl if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |      1677    96.43172    35.42517         15        264

. summarize ldl if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |      1920    108.0505    34.21443         21        295

. oneway   ldl diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      120841.531      1   120841.531     99.87     0.0000
 Within groups      4349717.21   3595   1209.93525
------------------------------------------------------------------------
    Total           4470558.74   3596   1243.20321

Bartlett's test for equal variances:  chi2(1) =   2.1661  Prob>chi2 = 0.141

.
. summarize hdl

    Variable |       Obs        Mean    Std. Dev.       Min        Max
```

```
-------------+--------------------------------------------------------
         hdl |      3602    48.05719    15.60109          8        170

. summarize hdl if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         hdl |      1288    47.46118    15.66952          8        162

. summarize hdl if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         hdl |      1682    45.69084    13.85682          8        122

. summarize hdl if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         hdl |      1920    50.13021    16.71297         12        170

. oneway   hdl diabetes_at_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      17669.5318      1   17669.5318     74.07     0.0000
 Within groups      858792.687   3600   238.553524
------------------------------------------------------------------------
    Total           876462.219   3601   243.394118

Bartlett's test for equal variances:  chi2(1) =  62.0521  Prob>chi2 = 0.000

.
. summarize tg

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |      3602    153.6891    115.1501         31       1755

. summarize tg if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |      1288    151.5054    111.9152         31       1509

. summarize tg if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |      1682    165.9507    129.8402         31       1755

. summarize tg if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |      1920    142.9474    99.33092         31       1509

. oneway   tg diabetes_at_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      474419.158      1   474419.158     36.13     0.0000
 Within groups      47273170.6   3600   13131.4363
------------------------------------------------------------------------
    Total           47747589.7   3601   13259.5362

Bartlett's test for equal variances:  chi2(1) = 128.5223  Prob>chi2 = 0.000

.
```

```
. summarize  CBCHemoglobin

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
CBCHemoglo~n |      3570     12.6628    1.766184        5.3       18.9

. summarize  CBCHemoglobin if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
CBCHemoglo~n |      1280    12.64703    1.742593        5.3       18.9

. summarize  CBCHemoglobin if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
CBCHemoglo~n |      1662    12.09759    1.674858        6.6       18.9

. summarize  CBCHemoglobin if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
CBCHemoglo~n |      1908    13.15514    1.695235        5.3       18.9

. oneway     CBCHemoglobin diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      993.429951      1   993.429951    349.57     0.0000
 Within groups        10139.73   3568   2.84185259
------------------------------------------------------------------------
    Total             11133.16   3569   3.11940599

Bartlett's test for equal variances:  chi2(1) =   0.2594  Prob>chi2 = 0.610

.
. summarize calcium

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |      3581    9.198855     .501268        5.8       11.7

. summarize calcium if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |      1281    9.179938    .5184369        5.8       11.3

. summarize calcium if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |      1675    9.147104    .5139008        6.3       11.3

. summarize calcium if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |      1906    9.244334    .4854977        5.8       11.7

. oneway   calcium diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      8.42804529      1   8.42804529     33.85     0.0000
 Within groups       891.11726   3579   .248984985
------------------------------------------------------------------------
    Total           899.545306   3580   .251269638
```

```
Bartlett's test for equal variances:  chi2(1) =   5.7700  Prob>chi2 = 0.016

.
. summarize phosphate

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |      3549    3.704706    .6605043        1.7        9.3

. summarize phosphate if iGFR_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |      1253     3.68755    .6658523        1.7        9.3

. summarize phosphate if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |      1660    3.881386    .6999418        1.8        9.3

. summarize phosphate if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |      1889    3.549444    .5811945        1.7          7

. oneway   phosphate diabetes_at_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      97.3546877      1   97.3546877    238.06     0.0000
 Within groups      1450.51673   3547   .408941847
------------------------------------------------------------------------
    Total           1547.87142   3548   .436265901

Bartlett's test for equal variances:  chi2(1) =  61.1626  Prob>chi2 = 0.000

.
. * NOTE this is TOTAL not INACTIVE contrary to footnote in published table
. summarize TOTAL_PTH, detail

                  Total Parathyroid Hormone
-------------------------------------------------------------
      Percentiles      Smallest
 1%           12            1.9
 5%           20              3
10%         24.5            6.9       Obs                3495
25%           34              7       Sum of Wgt.        3495

50%           53                      Mean           74.47542
                        Largest       Std. Dev.      72.52342
75%           88          729.4
90%        148.3            741       Variance       5259.647
95%        197.7            931       Skewness        5.28305
99%          330           1483       Kurtosis       63.01433

. summarize TOTAL_PTH if iGFR_baseline==1, detail

                  Total Parathyroid Hormone
-------------------------------------------------------------
      Percentiles      Smallest
 1%           12              3
 5%         19.9            6.9
10%        24.25            7.9       Obs                1250
25%           34              8       Sum of Wgt.        1250

50%        52.85                      Mean           72.63952
                        Largest       Std. Dev.      75.66136
75%           85            602
```

```
90%          142            606       Variance       5724.642
95%        184.7          729.4       Skewness       7.357504
99%          330           1483       Kurtosis       109.3378

. summarize TOTAL_PTH if diabetes_at_baseline==1, detail

                  Total Parathyroid Hormone
-------------------------------------------------------------
      Percentiles      Smallest
 1%         11.4              3
 5%           19              7
10%         24.7              7       Obs                1634
25%         37.1              8       Sum of Wgt.        1634

50%        59.95                      Mean           81.23513
                       Largest       Std. Dev.      79.39427
75%        102.4          633.2
90%        158.8            741       Variance       6303.449
95%        209.3            931       Skewness        6.00783
99%        319.9           1483       Kurtosis       78.10269

. summarize TOTAL_PTH if diabetes_at_baseline==0, detail

                  Total Parathyroid Hormone
-------------------------------------------------------------
      Percentiles      Smallest
 1%           13            1.9
 5%         20.6            6.9
10%         24.5            7.9       Obs                1861
25%         32.5            8.1       Sum of Wgt.        1861

50%         48.5                      Mean           68.54025
                       Largest       Std. Dev.      65.35039
75%           78          615.3
90%        131.1          659.1       Variance       4270.674
95%          185            678       Skewness        3.97774
99%          339          729.4       Kurtosis       27.61437

. oneway    TOTAL_PTH diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups       140219.54      1    140219.54     26.86     0.0000
 Within groups      18236986.1   3493   5221.00947
------------------------------------------------------------------------
    Total           18377205.6   3494   5259.64671

Bartlett's test for equal variances:  chi2(1) =  66.0233  Prob>chi2 = 0.000

.
. summarize glucose, detail

                        GLUCOSE (mg/dL)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           58              31
 5%           73              36
10%           79              36       Obs                3578
25%           86              42       Sum of Wgt.        3578

50%           97                       Mean           114.4782
                       Largest       Std. Dev.      51.62496
75%          124             522
90%          173             545       Variance       2665.136
95%          214             582       Skewness       3.099169
99%          315             596       Kurtosis       17.62465

. summarize glucose if iGFR_baseline==1, detail

                        GLUCOSE (mg/dL)
```

```
-------------------------------------------------------------
      Percentiles      Smallest
 1%           58             36
 5%           72             36
10%           78             44       Obs                1281
25%           86             46       Sum of Wgt.        1281

50%           97                      Mean           111.3856
                        Largest       Std. Dev.      48.43131
75%          121            447
90%          159            450       Variance       2345.592
95%          198            519       Skewness       3.573956
99%          318            596       Kurtosis       23.02712

. summarize glucose if diabetes_at_baseline==1, detail

                        GLUCOSE (mg/dL)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           49             31
 5%           69             36
10%           80             36       Obs                1673
25%          100             42       Sum of Wgt.        1673

50%          127                      Mean           140.7454
                        Largest       Std. Dev.      65.20376
75%          163            522
90%          218            545       Variance       4251.531
95%          268            582       Skewness       2.101816
99%          382            596       Kurtosis        10.3886

. summarize glucose if diabetes_at_baseline==0, detail

                        GLUCOSE (mg/dL)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           69             42
 5%           75             56
10%           78             58       Obs                1905
25%           84             62       Sum of Wgt.        1905

50%           90                      Mean           91.40997
                        Largest       Std. Dev.      11.60879
75%           98            125
90%          107            133       Variance       134.7641
95%          114            147       Skewness       .6015227
99%          123            160       Kurtosis       4.172219

. oneway   glucose diabetes_at_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      2168042.46      1   2168042.46   1052.65     0.0000
 Within groups      7365150.34   3576    2059.6058
------------------------------------------------------------------------
    Total            9533192.8   3577   2665.13637

Bartlett's test for equal variances:  chi2(1) =  4.0e+03  Prob>chi2 = 0.000

. *
. *  Shouldn't this be a nonparametric test ??????????
. *
. summarize HEMOGLOBIN_A1C

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |      3546    6.629583     1.56183        3.5       18.3

. summarize HEMOGLOBIN_A1C if iGFR_baseline==1
```

```
    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |      1272    6.544969    1.613205        3.5       18.3

. summarize HEMOGLOBIN_A1C if diabetes_at_baseline==1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |      1668    7.673621     1.67346        4.4       18.3

. summarize HEMOGLOBIN_A1C if diabetes_at_baseline==0

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |      1878     5.70229     .539342        3.5        8.5

. oneway   HEMOGLOBIN_A1C diabetes_at_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups       3432.9873      1    3432.9873   2333.26     0.0000
 Within groups      5214.37948   3544   1.47132604
------------------------------------------------------------------------
    Total           8647.36678   3545   2.43931362

Bartlett's test for equal variances:  chi2(1) =  2.0e+03  Prob>chi2 = 0.000

.
end of do-file

. log close
      name:  <unnamed>
       log:  R:\CRIC\July_2011\1.log
  log type:  text
 closed on:  14 Aug 2011, 07:48:16
-------------------------------------------------------------------------------------------
```

```
-------------------------------------------------------------------------------
      name:  <unnamed>
       log:  R:\CRIC\July_2011\MS004\2.log
  log type:  text
 opened on:  14 Aug 2011, 08:49:52

. set more off

. set linesize 120

.
. use "R:\CRIC\July_2011\MS004\ms004_analytical_data_final.dta", clear

. describe

Contains data from R:\CRIC\July_2011\MS004\ms004_analytical_data_final.dta
  obs:         3,612
 vars:            42
 size:       595,980
-------------------------------------------------------------------------------------------
              storage  display     value
variable name   type   format      label      variable label
-------------------------------------------------------------------------------------------
pid             str8   %8s                    pid
TOTAL_PTH       double %10.0g                 Total Parathyroid Hormone
iGFR_baseline   byte   %8.0g       IGFRCOHORT
                                              iGFR subcohort
sex             byte   %8.0g       SEX
Race_ethnicit~2 byte   %8.0g       RACE_ETHNICITY_CAT2A
                                              Race Ethnicity Category 2
income_cat_1    byte   %8.0g       INCOME_CAT_1A
                                              Income Category 1
edu_cat_1       byte   %8.0g       EDU_CAT_1A
                                              Education Category 1(categorical)
diabetes_at_b~e byte   %8.0g       DM         Diabetes at baseline
vnum            byte   %8.0g                  vnum
tg              int    %8.0g                  Triglycerides
tc              int    %8.0g                  Total Cholesterol
hdl             int    %8.0g                  High-density Lipoprotein (mg/dL)
ldl             double %10.0g                 Low-density Lipoprotein (mg/dL)
calcium         double %10.0g                 CALCIUM (mg/dL)
glucose         int    %8.0g                  GLUCOSE (mg/dL)
HEMOGLOBIN_A1C  double %10.0g                 HEMOGLOBIN_A1C (%)
phosphate       double %10.0g                 PHOSPHATE (mg/dL)
URIC_ACID       double %10.0g                 URIC_ACID (mg/dL)
age             double %10.0g                 Participant Age
smoke100        byte   %8.0g       SMOKE100A
                                              Smoked 100 Cigarettes
smokenow        byte   %8.0g       SMOKENOW   Current Smoker
mirevasc        byte   %8.0g       YESNO      Myocardial Infarction/Prior Revasc (Y/N)
pvd             byte   %8.0g       YESNO      Peripheral Vascular Disease (Y/N)
chf             byte   %8.0g       YESNO      Congestive Heart Failure (Y/N)
weight          double %10.0g                 Weight (kg)
bmi             double %10.0g                 Body Mass Index (kg/m^2)
systolic        double %10.0g                 Systolic BP (mmHg)
diastolic       double %10.0g                 Diastolic BP (mmHg)
hibp            byte   %8.0g       YESNO      High Blood Pressure(Binary)
hypertension    byte   %8.0g       YESNO      Hypertension (y/n)
map             double %10.0g                 Mean Arterial Pressure
CBCHemoglobin   double %10.0g                 CBC Hemoglobin (g/dL)
UPROTEIN24H     double %10.0g                 24H Urine Protein (g/24H)
bmi_cat_2       byte   %8.0g                  BMI Category 2
eGFR_Roche      double %10.0g                 Estimated Glomerular Filtration Rate (mg/dL)
eGFR_Roche_cat3 byte   %8.0g       EGFR_ROCHE_CAT3A
                                              eGFR category 3
egfr_roche_ca~e byte   %8.0g
scr_roche       double %10.0g
acearb          byte   %8.0g                  ACE inh or ARB
abicat          byte   %8.0g       ABICAT     Lowest ABI <0.9
```

```
race_ethnicit~3 byte   %8.0g       RACE3CAT
age_screening~t byte   %8.0g       AGE        categorical age at Screening visit
------------------------------------------------------------------------------
Sorted by:

.
. by egfr_roche_cat_baseline, sort: summarize age

------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |       667    58.68254    11.23854   22.05073    75.0411

------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |       844     59.6301    10.95116   21.66849   74.98475

------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |       968    60.01629    10.37942   21.15733   75.14281

------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |       720    57.67078    10.13529   21.80899   75.15342

------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |       397    51.53377    10.97019   21.21436   74.84932

------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         age |        16    52.95027    10.41931   33.40877   68.05479


. oneway age egfr_roche_cat_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      22899.8292      4   5724.95729     50.03     0.0000
 Within groups      410910.751   3591   114.427945
------------------------------------------------------------------------
    Total           433810.58   3595   120.670537

Bartlett's test for equal variances:  chi2(4) =  10.5679  Prob>chi2 = 0.032

.
. tab sex egfr_roche_cat_baseline, col chi

+--------------------+
| Key                |
|--------------------|
```

```
|     frequency     |
| column percentage |
+-------------------+

           |                egfr_roche_cat_baseline
       sex |         1          2          3          4          5 |     Total
-----------+-------------------------------------------------------+----------
      Male |       311        440        568        406        226 |     1,951
           |     46.63      52.13      58.68      56.39      56.93 |     54.25
-----------+-------------------------------------------------------+----------
    Female |       356        404        400        314        171 |     1,645
           |     53.37      47.87      41.32      43.61      43.07 |     45.75
-----------+-------------------------------------------------------+----------
     Total |       667        844        968        720        397 |     3,596
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(4) =  27.2622   Pr = 0.000

. tab Race_ethnicity_cat2 egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

    Race Ethnicity |                egfr_roche_cat_baseline
        Category 2 |         1          2          3          4          5 |     Total
-------------------+-------------------------------------------------------+----------
Non-Hispanic White |       277        386        461        348        160 |     1,632
                   |     41.53      45.73      47.62      48.33      40.30 |     45.38
-------------------+-------------------------------------------------------+----------
Non-Hispanic Black |       303        387        430        319        202 |     1,641
                   |     45.43      45.85      44.42      44.31      50.88 |     45.63
-------------------+-------------------------------------------------------+----------
          Hispanic |        55         43         32         21         18 |       169
                   |      8.25       5.09       3.31       2.92       4.53 |      4.70
-------------------+-------------------------------------------------------+----------
             Other |        32         28         45         32         17 |       154
                   |      4.80       3.32       4.65       4.44       4.28 |      4.28
-------------------+-------------------------------------------------------+----------
             Total |       667        844        968        720        397 |     3,596
                   |    100.00     100.00     100.00     100.00     100.00 |    100.00

         Pearson chi2(12) =  39.5364   Pr = 0.000

. tab income_cat_1 egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

                   |                egfr_roche_cat_baseline
   Income Category 1 |         1          2          3          4          5 |     Total
---------------------+-------------------------------------------------------+----------
    $20,000 or under |       249        292        232        155         72 |     1,000
                     |     37.33      34.60      23.97      21.53      18.14 |     27.81
---------------------+-------------------------------------------------------+----------
   $20,001 - $50,000 |       179        199        267        162         96 |       903
                     |     26.84      23.58      27.58      22.50      24.18 |     25.11
---------------------+-------------------------------------------------------+----------
  $50,000 - $100,000 |       108        150        187        171        108 |       724
                     |     16.19      17.77      19.32      23.75      27.20 |     20.13
---------------------+-------------------------------------------------------+----------
  More than $100,000 |        38         69        117        115         49 |       388
```

```
                    |      5.70       8.18      12.09      15.97      12.34 |     10.79
--------------------+-----------------------------------------------------+----------
Don't wish to answer |        93        134        165        117         72 |       581
                    |     13.94      15.88      17.05      16.25      18.14 |     16.16
--------------------+-----------------------------------------------------+----------
              Total |       667        844        968        720        397 |     3,596
                    |    100.00     100.00     100.00     100.00     100.00 |    100.00

         Pearson chi2(16) = 138.0111   Pr = 0.000

. tab edu_cat_1 egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

   Education Category |               egfr_roche_cat_baseline
       1(categorical) |         1          2          3          4          5 |     Total
----------------------+-----------------------------------------------------+----------
    6th grade or less |        27         15         10          4          4 |        60
                      |      4.05       1.78       1.03       0.56       1.01 |      1.67
----------------------+-----------------------------------------------------+----------
7th to 12th grade, no |       126        160        143         82         27 |       538
                      |     18.89      18.96      14.77      11.39       6.82 |     14.97
----------------------+-----------------------------------------------------+----------
High school graduate  |       145        177        189        112         69 |       692
                      |     21.74      20.97      19.52      15.56      17.42 |     19.25
----------------------+-----------------------------------------------------+----------
Technical or vocation |        36         38         48         36         26 |       184
                      |      5.40       4.50       4.96       5.00       6.57 |      5.12
----------------------+-----------------------------------------------------+----------
Some college educatio |       162        224        228        192        112 |       918
                      |     24.29      26.54      23.55      26.67      28.28 |     25.54
----------------------+-----------------------------------------------------+----------
     College graduate |       106        146        188        172         82 |       694
                      |     15.89      17.30      19.42      23.89      20.71 |     19.30
----------------------+-----------------------------------------------------+----------
Professional or gradu |        65         84        162        122         76 |       509
                      |      9.75       9.95      16.74      16.94      19.19 |     14.16
----------------------+-----------------------------------------------------+----------
                Total |       667        844        968        720        396 |     3,595
                      |    100.00     100.00     100.00     100.00     100.00 |    100.00

         Pearson chi2(24) = 135.7751   Pr = 0.000

. tab smokenow egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

                    |               egfr_roche_cat_baseline
    Current Smoker |         1          2          3          4          5 |     Total
-------------------+-----------------------------------------------------+----------
Not current smoker |       557        721        851        636        343 |     3,108
                   |     83.51      85.43      87.91      88.33      86.40 |     86.43
-------------------+-----------------------------------------------------+----------
Yes current smoker |       110        123        117         84         54 |       488
                   |     16.49      14.57      12.09      11.67      13.60 |     13.57
-------------------+-----------------------------------------------------+----------
             Total |       667        844        968        720        397 |     3,596
                   |    100.00     100.00     100.00     100.00     100.00 |    100.00
```

```
          Pearson chi2(4) =   9.6190   Pr = 0.047

. tab smoke100 egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Smoked 100 |                egfr_roche_cat_baseline
Cigarettes |         1          2          3          4          5 |     Total
-----------+-----------------------------------------------------+----------
Non-Smoker |       262        344        426        345        208 |     1,585
           |     39.28      40.76      44.01      47.92      52.39 |     44.08
-----------+-----------------------------------------------------+----------
    Smoker |       405        500        542        375        189 |     2,011
           |     60.72      59.24      55.99      52.08      47.61 |     55.92
-----------+-----------------------------------------------------+----------
     Total |       667        844        968        720        397 |     3,596
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(4) =  25.4434   Pr = 0.000

. tab hypertension egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Hypertensi |                egfr_roche_cat_baseline
  on (y/n) |         1          2          3          4          5 |     Total
-----------+-----------------------------------------------------+----------
        No |        55         77        120        132        130 |       514
           |      8.25       9.12      12.40      18.36      32.75 |     14.30
-----------+-----------------------------------------------------+----------
       Yes |       612        767        848        587        267 |     3,081
           |     91.75      90.88      87.60      81.64      67.25 |     85.70
-----------+-----------------------------------------------------+----------
     Total |       667        844        968        719        397 |     3,595
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(4) = 161.1733   Pr = 0.000

. tab diabetes_at_baseline egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Diabetes at |                egfr_roche_cat_baseline
   baseline |         1          2          3          4          5 |     Total
------------+-----------------------------------------------------+----------
No diabetes |       315        385        520        430        267 |     1,917
            |     47.23      45.62      53.72      59.72      67.25 |     53.31
------------+-----------------------------------------------------+----------
   Diabetes |       352        459        448        290        130 |     1,679
            |     52.77      54.38      46.28      40.28      32.75 |     46.69
------------+-----------------------------------------------------+----------
      Total |       667        844        968        720        397 |     3,596
            |    100.00     100.00     100.00     100.00     100.00 |    100.00
```

```
          Pearson chi2(4) =  72.9630   Pr = 0.000

. tab mirevasc egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Myocardial |
Infarction |
    /Prior |
    Revasc |                egfr_roche_cat_baseline
     (Y/N) |         1          2          3          4          5 |     Total
-----------+-------------------------------------------------------+----------
        No |       497        617        741        589        346 |     2,790
           |     74.51      73.10      76.55      81.81      87.15 |     77.59
-----------+-------------------------------------------------------+----------
       Yes |       170        227        227        131         51 |       806
           |     25.49      26.90      23.45      18.19      12.85 |     22.41
-----------+-------------------------------------------------------+----------
     Total |       667        844        968        720        397 |     3,596
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(4) =  42.2385   Pr = 0.000

. tab chf egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Congestive |
     Heart |
   Failure |                egfr_roche_cat_baseline
     (Y/N) |         1          2          3          4          5 |     Total
-----------+-------------------------------------------------------+----------
        No |       570        741        877        677        378 |     3,243
           |     85.46      87.80      90.60      94.03      95.21 |     90.18
-----------+-------------------------------------------------------+----------
       Yes |        97        103         91         43         19 |       353
           |     14.54      12.20       9.40       5.97       4.79 |      9.82
-----------+-------------------------------------------------------+----------
     Total |       667        844        968        720        397 |     3,596
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(4) =  45.8200   Pr = 0.000

. tab pvd egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

Peripheral |
  Vascular |
   Disease |                egfr_roche_cat_baseline
     (Y/N) |         1          2          3          4          5 |     Total
-----------+-------------------------------------------------------+----------
        No |       592        759        921        689        386 |     3,347
           |     88.76      89.93      95.14      95.69      97.23 |     93.08
```

```
-----------+---------------------------------------------------------+----------
       Yes |        75         85         47         31         11 |       249
           |     11.24      10.07       4.86       4.31       2.77 |      6.92
-----------+---------------------------------------------------------+----------
     Total |       667        844        968        720        397 |     3,596
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(4) =  56.9999   Pr = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize systolic

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |       664    130.4779      23.556      72.67     230.67

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |       842    129.3896    23.18014      76.67     242.67

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |       966     127.697    21.31851      74.67        214

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |       716    125.4312    20.16179      77.33     209.33

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |       395    123.5083    19.98082         80     213.33

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    systolic |        15    124.4893    12.63339     106.67     143.33


. oneway   systolic  egfr_roche_cat_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      18153.6982      4   4538.42455      9.52     0.0000
 Within groups      1706289.72   3578   476.883657
------------------------------------------------------------------------
```

```
    Total           1724443.42   3582   481.419158

Bartlett's test for equal variances:  chi2(4) =  29.8403  Prob>chi2 = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize diastolic

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |       663    69.91605    13.31307         40        116

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |       839    70.05533    12.61127         34        122

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |       965    71.50181    12.69608         36        118

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |       716    72.29468    12.34709      35.33     138.67

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |       395    74.85734     12.8442      43.33     138.67

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   diastolic |        15    69.86733    11.12421         48      88.67


. oneway   diastolic  egfr_roche_cat_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      8281.66138      4   2070.41534     12.75     0.0000
 Within groups      579999.796   3573   162.328518
------------------------------------------------------------------------
    Total           588281.457   3577   164.462247

Bartlett's test for equal variances:  chi2(4) =   4.2591  Prob>chi2 = 0.372

.
```

```
. by egfr_roche_cat_baseline, sort: summarize map

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |       663    90.09217    14.43721   56.44333   145.9967

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |       839    89.84727    13.96111   56.66667     154.67

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |       965      90.221    13.69512   58.22333     144.22

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |       716    90.00685    13.06242      53.78     161.78

 egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |       395    91.07431    13.74467   58.00333   160.4467

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         map |        15    88.07467    10.38735   67.55667   105.1133


. oneway   map  egfr_roche_cat_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      435.693232      4   108.923308      0.57     0.6818
 Within groups       678554.83   3573   189.911791
------------------------------------------------------------------------
    Total           678990.523   3577   189.821225

Bartlett's test for equal variances:  chi2(4) =   7.2754  Prob>chi2 = 0.122

.
. tab hibp egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

High Blood |
Pressure(B |               egfr_roche_cat_baseline
    inary) |         1          2          3          4          5 |     Total
```

```
-----------+--------------------------------------------------------+----------
        No |       329        448        500        397        231 |     1,905
           |     49.55      53.21      51.76      55.45      58.48 |     53.17
-----------+--------------------------------------------------------+----------
       Yes |       335        394        466        319        164 |     1,678
           |     50.45      46.79      48.24      44.55      41.52 |     46.83
-----------+--------------------------------------------------------+----------
     Total |       664        842        966        716        395 |     3,583
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(4) =  10.2354   Pr = 0.037

.
. by egfr_roche_cat_baseline, sort: summarize weight

-------------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |       665    89.80421     24.7871       39.6      206.6

-------------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |       842    92.25629    23.21441       42.4      195.4

-------------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |       968    92.46322    23.31467       32.4      195.1

-------------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |       720    93.27681    24.10712       40.2      220.9

-------------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |       396    92.25581    22.62912       45.8      199.4

-------------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
      weight |        15    81.78667     23.4833       41.4      123.9


. oneway   weight  egfr_roche_cat_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      4654.94245      4   1163.73561      2.08     0.0809
 Within groups      2006939.49   3586   559.659646
------------------------------------------------------------------------
    Total           2011594.43   3590   560.332711

Bartlett's test for equal variances:  chi2(4) =   6.0107  Prob>chi2 = 0.198
```

```
. by egfr_roche_cat_baseline, sort: summarize bmi

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |       664    31.94433    8.410831   16.37499   71.31998

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |       841    32.48462     7.89488   15.99768   73.61679

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |       967    32.11245    7.768368   14.59011   73.75553

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |       719    32.16727     8.13318   14.97431   88.01366

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |       396    31.31615    7.065164   18.00297   61.13496

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |        15    29.11659    7.928544   14.84456   44.90711


. oneway   bmi  egfr_roche_cat_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups       386.96996      4   96.7424899      1.54     0.1873
 Within groups      224765.936   3582    62.748726
------------------------------------------------------------------------
    Total           225152.906   3586   62.7866443

Bartlett's test for equal variances:  chi2(4) =  16.3067  Prob>chi2 = 0.003

.
. bysort bmi_cat_2: summarize bmi

-------------------------------------------------------------------------------
-> bmi_cat_2 = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |       597    22.44584    2.023514   14.59011   24.99901

-------------------------------------------------------------------------------
-> bmi_cat_2 = 2
```

```
    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |      1018    27.62509    1.408869   25.00499   29.99784

-------------------------------------------------------------------------------------------------
-> bmi_cat_2 = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         bmi |      1987    37.25568     6.83807    30.0073   88.01366


. label define bmi_cat_2 1"<25" 2"25-30" 3">30"

. label values bmi_cat_2 bmi_cat_2

. tab bmi_cat_2, missing

        BMI |
 Category 2 |      Freq.     Percent        Cum.
------------+-----------------------------------
        <25 |        607       16.81       16.81
      25-30 |      1,018       28.18       44.99
        >30 |      1,987       55.01      100.00
------------+-----------------------------------
      Total |      3,612      100.00

. tab bmi_cat_2 egfr_roche_cat_baseline, col chi

+--------------------+
| Key                |
|--------------------|
|     frequency      |
| column percentage  |
+--------------------+

       BMI |                egfr_roche_cat_baseline
Category 2 |         1          2          3          4          5 |     Total
-----------+-----------------------------------------------------+----------
       <25 |       132        126        149        121         73 |       601
           |     19.79      14.93      15.39      16.81      18.39 |     16.71
-----------+-----------------------------------------------------+----------
     25-30 |       182        238        275        207        112 |     1,014
           |     27.29      28.20      28.41      28.75      28.21 |     28.20
-----------+-----------------------------------------------------+----------
       >30 |       353        480        544        392        212 |     1,981
           |     52.92      56.87      56.20      54.44      53.40 |     55.09
-----------+-----------------------------------------------------+----------
     Total |       667        844        968        720        397 |     3,596
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(8) =   8.8867   Pr = 0.352

.
. tab abicat egfr_roche_cat_baseline, col chi

+--------------------+
| Key                |
|--------------------|
|     frequency      |
| column percentage  |
+--------------------+

Lowest ABI |                egfr_roche_cat_baseline
      <0.9 |         1          2          3          4          5 |     Total
-----------+-----------------------------------------------------+----------
     >=0.9 |       501        663        813        615        374 |     2,966
           |     76.37      80.07      85.04      85.89      95.41 |     83.60
-----------+-----------------------------------------------------+----------
```

```
      <0.9 |       155        165        143        101         18 |       582
           |     23.63      19.93      14.96      14.11       4.59 |     16.40
-----------+--------------------------------------------------------+----------
     Total |       656        828        956        716        392 |     3,548
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(4) =  76.5620   Pr = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize scr_roche

-------------------------------------------------------------------------------------------------------
-------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |       667    2.561627    .5579704    1.70754    7.85751

-------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |       844    1.901166    .3245337    1.35102      3.705

-------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |       968    1.557905    .2329289    1.08363    2.24232

-------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |       720    1.315606     .196654      .9945    1.79667

-------------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |       397     1.13841    .2034862     .54885    1.61841

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   scr_roche |         0


. oneway   scr_roche  egfr_roche_cat_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      777.277302      4   194.319325   1776.47     0.0000
 Within groups      392.801103   3591    .10938488
------------------------------------------------------------------------
    Total           1170.0784   3595   .325473826

Bartlett's test for equal variances:  chi2(4) =  1.1e+03  Prob>chi2 = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize UPROTEIN24H, detail
```

```
-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

                  24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%     .0225271       .0159446
 5%      .048096       .0173196
10%       .06075       .0178054       Obs                 624
25%     .1447146       .0196129       Sum of Wgt.         624

50%        .5748                      Mean           1.688951
                       Largest       Std. Dev.      2.827729
75%       2.1445         17.313
90%        4.368        17.7375       Variance       7.996049
95%        6.956       18.90536       Skewness       3.363272
99%      15.9495       20.10376       Kurtosis       16.93411

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

                  24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%        .0234         .01275
 5%       .03675          .0138
10%         .048       .0188509       Obs                 806
25%     .0818919          .0189       Sum of Wgt.         806

50%     .2620408                      Mean           1.187282
                       Largest       Std. Dev.      2.517357
75%        1.222        15.8556
90%         3.04         16.766       Variance       6.337087
95%     5.155944        23.8038       Skewness       5.115506
99%     12.73845       30.11958       Kurtosis       40.43512

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

                  24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%     .0195392           .013
 5%     .0309221       .0145895
10%         .042       .0171089       Obs                 932
25%     .0668538       .0173847       Sum of Wgt.         932

50%     .1345824                      Mean           .8092481
                       Largest       Std. Dev.      1.931273
75%     .6006621         14.82
90%        2.173        16.0775       Variance       3.729816
95%     3.870955       17.52338       Skewness       5.091695
99%        9.652         21.528       Kurtosis       37.19655

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

                  24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%       .02025       .0159319
 5%      .035234       .0161739
10%     .0441191       .0169412       Obs                 684
25%     .0646852          .0171       Sum of Wgt.         684

50%         .102                      Mean           .5658374
                       Largest       Std. Dev.      1.485828
75%     .3561429         8.4643
90%     1.249032        10.5773       Variance       2.207685
```

```
95%        2.728         12.342       Skewness       6.416126
99%     8.024361       20.05677       Kurtosis       60.89227

------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

                 24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%         .024       .0076755
 5%     .0341053           .017
10%     .0453147          .0213       Obs                 368
25%      .062809           .024       Sum of Wgt.         368

50%     .0995751                      Mean           .3883365
                        Largest       Std. Dev.      .9474327
75%     .2203573       4.238001
90%       1.0112         4.4928       Variance       .8976287
95%     1.916229         7.8144       Skewness       5.930934
99%     4.238001         10.512       Kurtosis       50.39896

------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

                 24H Urine Protein (g/24H)
-------------------------------------------------------------
      Percentiles      Smallest
 1%     .0426667       .0426667
 5%     .0426667          .0704
10%     .0565333          .0805       Obs                  10
25%        .0805       .0984558       Sum of Wgt.          10

50%        .2812                      Mean           .7259476
                        Largest       Std. Dev.       .839891
75%        1.102           1.08
90%     2.111527          1.102       Variance       .7054168
95%        2.304       1.919054       Skewness       .8590172
99%        2.304          2.304       Kurtosis        2.27084


. oneway   UPROTEIN24H egfr_roche_cat_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      620.831902      4   155.207976     34.37     0.0000
 Within groups      15392.6303   3409   4.51529196
------------------------------------------------------------------------
    Total           16013.4622   3413   4.69190219

Bartlett's test for equal variances:  chi2(4) = 630.2099  Prob>chi2 = 0.000

.
. label values acearb YESNO

. tab acearb egfr_roche_cat_baseline, col chi

+-------------------+
| Key               |
|-------------------|
|     frequency     |
| column percentage |
+-------------------+

ACE inh or |                egfr_roche_cat_baseline
       ARB |         1          2          3          4          5 |     Total
-----------+-------------------------------------------------------+----------
        No |       220        221        267        240        195 |     1,143
           |     32.98      26.18      27.58      33.33      49.12 |     31.79
```

```
-----------+---------------------------------------------------------+----------
       Yes |       447        623        701        480        202 |     2,453
           |     67.02      73.82      72.42      66.67      50.88 |     68.21
-----------+---------------------------------------------------------+----------
     Total |       667        844        968        720        397 |     3,596
           |    100.00     100.00     100.00     100.00     100.00 |    100.00

          Pearson chi2(4) =  76.3414   Pr = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize tc

------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |       667    183.3328     51.5675         79        571

------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |       844    182.5166    46.33621         80        512

------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |       968    183.2965    42.09724         76        370

------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |       720    183.1778    41.20084         77        350

------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |       397    183.5164     39.2484         88        344

------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tc |         6       144.5    31.45632         97        184


. oneway   tc  egfr_roche_cat_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      432.445893      4   108.111473      0.05     0.9945
 Within groups      7125209.17   3591   1984.18523
------------------------------------------------------------------------
    Total           7125641.62   3595   1982.09781

Bartlett's test for equal variances:  chi2(4) =  60.1577  Prob>chi2 = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize ldl
```

```
-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |       665    99.94436    38.61337         16        295

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |       843    100.4128     35.6319         21        242

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |       968    103.3432    34.81021         25        232

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |       718     104.468    33.23696         15        250

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |       397    107.2363    32.58035         28        243

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         ldl |         6    74.16667    20.93243         52        110


. oneway   ldl  egfr_roche_cat_baseline

                       Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      20272.4348      4   5068.10869      4.09     0.0026
 Within groups      4443225.16   3586   1239.04773
------------------------------------------------------------------------
    Total           4463497.59   3590   1243.31409

Bartlett's test for equal variances:  chi2(4) =  21.6367  Prob>chi2 = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize hdl

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         hdl |       667    46.73463    15.50637          8        117

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
```

```
-------------+--------------------------------------------------------
         hdl |       844    47.37204    15.73005         15        162

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         hdl |       968    48.17355    14.82992         12        140

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         hdl |       720    48.81806     15.9736         12        170

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         hdl |       397    50.17632    16.42642         23        118

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
         hdl |         6    41.16667     11.8223         23         55


. oneway   hdl  egfr_roche_cat_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      3775.15844      4    943.78961      3.89     0.0037
 Within groups      871702.876   3591   242.746554
------------------------------------------------------------------------
    Total           875478.034   3595   243.526574

Bartlett's test for equal variances:  chi2(4) =   7.9453  Prob>chi2 = 0.094

.
. by egfr_roche_cat_baseline, sort: summarize tg

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |       667    167.7856    126.7914         35       1509

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |       844    162.3306    122.9593         33       1593

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |       968    150.7562    98.98185         31        827

-------------------------------------------------------------------------------
```

```
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |       720    148.2597    127.4205         38       1755

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |       397    128.6096    81.51347         31        639

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
          tg |         6    155.1667    91.46675         76        293


. oneway   tg  egfr_roche_cat_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      474823.302      4   118705.826      9.03     0.0000
 Within groups      47230922.5   3591   13152.5821
------------------------------------------------------------------------
    Total           47705745.8   3595   13270.0266

Bartlett's test for equal variances:  chi2(4) = 152.5291  Prob>chi2 = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize  CBCHemoglobin

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
CBCHemoglo~n |       661    11.84221    1.691732         5.3       18.9

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
CBCHemoglo~n |       838    12.30955    1.696656         7.1         18

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
CBCHemoglo~n |       959    12.79176    1.717844         8.1       18.9

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
CBCHemoglo~n |       716    13.24162    1.637216         7.5       18.6

-------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
```

```
CBCHemoglo~n |       389    13.44036    1.627452        6.6       17.4

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
CBCHemoglo~n |         7    12.35714    1.926012        9.8       14.8


. oneway    CBCHemoglobin  egfr_roche_cat_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      1040.69058      4   260.172644     91.93     0.0000
 Within groups       10069.557   3558    2.8301172
------------------------------------------------------------------------
    Total           11110.2476   3562   3.11910375

Bartlett's test for equal variances:  chi2(4) =   2.8810  Prob>chi2 = 0.578

.
. by egfr_roche_cat_baseline, sort: summarize calcium

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |       667    9.107346    .5676647        6.3       11.7

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |       842    9.206413    .5041862        7.2       10.9

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |       963    9.234579    .4824342        6.9       11.3

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |       712    9.219522    .4884008        5.8       11.1

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |       395    9.213671    .4207383        6.7       10.3

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
     calcium |         2        9.05    .7778175        8.5        9.6


. oneway   calcium  egfr_roche_cat_baseline
```

```
                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      7.25327466      4   1.81331866      7.27     0.0000
 Within groups      891.642691   3574   .249480328
------------------------------------------------------------------------
    Total           898.895965   3578    .25122861

Bartlett's test for equal variances:  chi2(4) =  47.6409  Prob>chi2 = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize phosphate

------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |       658    4.119909    .7788971        1.9        9.3

------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |       834    3.792326    .6145797        1.8        6.4

------------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |       958    3.596242    .5749076        2.1        5.8

------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |       708    3.506215    .5646501        1.7        6.6

------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |       388    3.438918    .5228681          2        5.1

------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   phosphate |         3    4.133333    .2886751        3.8        4.3


. oneway   phosphate  egfr_roche_cat_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      186.411565      4   46.6028912    121.27     0.0000
 Within groups      1360.74155   3541   .384281715
------------------------------------------------------------------------
    Total           1547.15312   3545   .436432474

Bartlett's test for equal variances:  chi2(4) = 122.2974  Prob>chi2 = 0.000

.
```

```
. by egfr_roche_cat_baseline, sort: summarize TOTAL_PTH

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   TOTAL_PTH |       640    132.3241    102.7773        8.2        741

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   TOTAL_PTH |       823    82.94982    83.10112        1.9       1483

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   TOTAL_PTH |       939    60.49329    44.69337          3        383

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   TOTAL_PTH |       704    48.59091    28.88493        7.9      209.2

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   TOTAL_PTH |       385    41.73792    23.63179        6.9      230.4

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   TOTAL_PTH |         4       64.05    48.21856       12.9        108


. oneway TOTAL_PTH egfr_roche_cat_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      3268722.83      4   817180.708    188.64     0.0000
 Within groups      15101072.4   3486   4331.91981
------------------------------------------------------------------------
    Total           18369795.3   3490   5263.55165

Bartlett's test for equal variances:  chi2(4) =  1.7e+03  Prob>chi2 = 0.000

.
. * NOTE this is INACTIVE
. * by egfr_roche_cat_baseline, sort: summarize cip_value, detail
. * oneway cip_value  egfr_roche_cat_baseline
.
. by egfr_roche_cat_baseline, sort: summarize glucose, detail

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

                        GLUCOSE (mg/dL)
-------------------------------------------------------------
```

```
      Percentiles      Smallest
 1%           62             36
 5%           72             43
10%           76             48       Obs                 666
25%           85             56       Sum of Wgt.         666

50%         96.5                      Mean           114.9249
                      Largest       Std. Dev.      53.88613
75%          124            362
90%          173            447       Variance       2903.715
95%          216            519       Skewness       3.125742
99%          341            522       Kurtosis       17.29345

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

                      GLUCOSE (mg/dL)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           58             42
 5%           71             43
10%           78             47       Obs                 841
25%           87             47       Sum of Wgt.         841

50%           98                      Mean           118.8787
                      Largest       Std. Dev.      57.43109
75%          131            399
90%          191            450       Variance       3298.331
95%          236            487       Skewness        2.77753
99%          325            596       Kurtosis       14.41807

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

                      GLUCOSE (mg/dL)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           59             42
 5%           75             42
10%           81             47       Obs                 963
25%           88             49       Sum of Wgt.         963

50%          100                      Mean           116.8733
                      Largest       Std. Dev.      51.89112
75%          127            428
90%          177            445       Variance       2692.689
95%          217            492       Skewness       3.155768
99%          312            582       Kurtosis       18.48746

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

                      GLUCOSE (mg/dL)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           59             31
 5%           74             36
10%           78             43       Obs                 711
25%           85             48       Sum of Wgt.         711

50%           95                      Mean           109.7117
                      Largest       Std. Dev.      44.51902
75%          119            347
90%          157            397       Variance       1981.944
95%          195            398       Skewness           3.41
99%          268            545       Kurtosis        22.8142

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5
```

```
                        GLUCOSE (mg/dL)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           58             44
 5%           72             46
10%           78             51       Obs                 396
25%           84             58       Sum of Wgt.         396

50%           94                      Mean           107.2045
                        Largest       Std. Dev.      44.25966
75%          110            308
90%          155            333       Variance       1958.918
95%          203            368       Skewness       2.933356
99%          308            377       Kurtosis       13.63301

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

                        GLUCOSE (mg/dL)
-------------------------------------------------------------
      Percentiles      Smallest
 1%           79             79
 5%           79              .
10%           79              .       Obs                   1
25%           79              .       Sum of Wgt.           1

50%           79                      Mean                 79
                        Largest       Std. Dev.             .
75%           79              .
90%           79              .       Variance              .
95%           79              .       Skewness              .
99%           79             79       Kurtosis              .


. oneway   glucose  egfr_roche_cat_baseline

                        Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      59047.0007      4   14761.7502      5.57     0.0002
 Within groups      9472886.74   3572   2651.98397
------------------------------------------------------------------------
    Total           9531933.75   3576   2665.52957

Bartlett's test for equal variances:  chi2(4) =  68.2147  Prob>chi2 = 0.000

.
. by egfr_roche_cat_baseline, sort: summarize HEMOGLOBIN_A1C

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |       658    6.666717    1.543021        3.8       14.7

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |       826    6.818402    1.636278        3.5       15.2

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |       959    6.679458    1.540214        4.2       13.7
```

```
-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |       712    6.467556    1.428109        4.1       14.3

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |       387    6.335917    1.660678        4.4       18.3

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
HEMOGLOBI~1C |         4       6.825    .8261356        5.8        7.8


. oneway   HEMOGLOBIN_A1C egfr_roche_cat_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      84.8083429      4   21.2020857      8.76     0.0000
 Within groups      8560.35802   3537   2.42023127
------------------------------------------------------------------------
    Total           8645.16636   3541   2.44144771

Bartlett's test for equal variances:  chi2(4) =  17.9037  Prob>chi2 = 0.001

.
. by egfr_roche_cat_baseline, sort: summarize URIC_ACID

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 1

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   URIC_ACID |       659    8.217147    1.958046        2.2       15.2

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 2

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   URIC_ACID |       837     7.90454    1.866349        1.9       14.8

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 3

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   URIC_ACID |       959    7.343066     1.77989        2.4       13.3

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 4

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   URIC_ACID |       714    6.788235      1.6449        2.7       12.2

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = 5

    Variable |       Obs        Mean    Std. Dev.       Min        Max
```

```
-------------+--------------------------------------------------------
   URIC_ACID |       392    6.104082    1.653125          2       11.7

-------------------------------------------------------------------------------
-> egfr_roche_cat_baseline = .

    Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
   URIC_ACID |         2        6.35    1.343503        5.4        7.3


. oneway   URIC_ACID egfr_roche_cat_baseline

                      Analysis of Variance
    Source              SS         df      MS            F     Prob > F
------------------------------------------------------------------------
Between groups      1581.33657      4   395.334143    122.59     0.0000
 Within groups       11467.385   3556   3.22479894
------------------------------------------------------------------------
    Total           13048.7216   3560   3.66537123

Bartlett's test for equal variances:  chi2(4) =  28.5650  Prob>chi2 = 0.000

.
.
end of do-file

. log close
      name:  <unnamed>
       log:  R:\CRIC\July_2011\MS004\2.log
  log type:  text
 closed on:  14 Aug 2011, 08:50:35
```