Dataset Integrity Check for Chronic Renal Insufficiency Cohort Study (CRIC) Data

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1 Standard Disclaimer

The intent of this DSIC is to provide confidence that the data 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 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 complex variables, etc. Experience suggests that most discrepancies can ordinarily be resolved by consultation with the study data coordinating center (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 an integrity check. Specifically, we do not attempt to resolve minor or inconsequential discrepancies with published results or discrepancies that involve complex analyses, unless NIDDK Repository staff suspect that the observed discrepancy suggests that the dataset may have been corrupted in storage, transmission, or processing by repository staff. We do, however, document in footnotes to the integrity check those instances in which our secondary analyses produced results that were not fully consistent with those reported in the target publication.

2 Study Background

The Chronic Renal Insufficiency Cohort (CRIC) study is an observational study that examined risk factors for progression of chronic renal insufficiency (CRI) and cardiovascular disease (CVD) among CRI patients. The study enrolled adults aged 21 to 74 years with a broad spectrum of renal disease severity, half of whom were diagnosed with diabetes mellitus. Subjects underwent extensive clinical evaluations at baseline and annual clinic visits, as well as via telephone at 6-month intervals. Data on quality of life, dietary assessment, physical activity, health behaviors, depression, cognitive function, health care resource utilization, and blood and urine specimens were collected. Outcomes such as measures of kidney function and occurrence of new and worsening CVD were assessed.

3 Archived Datasets

All data files, as provided by the Data Coordinating Center (DCC) and ancillary researchers, are located in the CRIC folder in the data package. For this replication, variables were taken from the “personlevel.sas7bdat”, “visitlevel.sas7bdat”, and “all_cvd_events.sas7bdat” datasets.

4 Statistical Methods

Analyses were performed to replicate results for the data published by McCauley et al. [1] for Atrial Fibrillation and Longitudinal Change in Cognitive Function in CKD. To verify the integrity of the dataset, only descriptive statistics were computed for the provided variables. Calculations to replicate genetic results were not computed.

5 Results

For Table 1 in the publication [1], Baseline characteristics, Table A lists the variables that were used in the replication, and Table B compares the results calculated from the archived data files to the results published in Table 1. The results of the replication are within expected variation to the published results.

6 Conclusions

The NIDDK Central Repository is confident that the CRIC data files to be distributed are a true copy of the study data as the results of the replication are within expected variation to the published results.

7 References

[1] McCauley MD, Hsu JY, Ricardo AC, Darbar D, Kansal M, Kurella Tamura M, Feldman HI, Kusek JW, Taliercio JJ, Rao PS, Shafi T, He J, Wang X, Sha D, Lamar M, Go AS, Yaffe K, Lash JP. Atrial Fibrillation and Longitudinal Change in Cognitive Function in CKD. Kidney International Reports, 6(3), 669-674, January 2021. doi: https://doi.org/10.1016/j.ekir.2020.12.023

Table A: Variables used to replicate Table 1 – Baseline Characteristics

Table Variable	**dataset.variable**
Age, years	visitlevel.age_integer
Female	personlevel.sex
Non-Hispanic White	visitlevel.race_ethnicity_cat2
Non-Hispanic Black	visitlevel.race_ethnicity_cat2
Hispanic	visitlevel.race_ethnicity_cat2
Other	visitlevel.race_ethnicity_cat2
Education < High School	personlevel.edu_cat_2
Income < $20,000	personlevel.income_cat_1
Cardiovascular disease	visitlevel.anycvd
Myocardial infarction or prior coronary revascularization	visitlevel.mirevasc
Peripheral artery disease	visitlevel.pvd
Stroke	visitlevel.stroke
Hypertension	visitlevel.hypertension
Diabetes mellitus	visitlevel.diabetes
Current smoker	visitlevel.smokenow
Current or former alcohol use	visitlevel.alcoh_use
Body mass index, kg/m^2	visitlevel.bmi
Systolic blood pressure, mmHg	visitlevel.systolic
Diastolic blood pressure, mmHg	visitlevel.diastolic
Modified Mini-Mental State Exam	visitlevel.mmse_score
Beck Depression Inventory	visitlevel.becks_score
KDQOL-36, Mental Component Summary	visitlevel.sf12_mcs
KDQOL-36, Physical Component Summary	visitlevel.sf12_pcs
ACE inhibitor or angiotensin receptor blocker	visitlevel.acearb
Beta blocker	visitlevel.betablk
Antiplatelet	visitlevel.antiplatelet
Warfarin	visitlevel.anticoag_vitamink
Statin	visitlevel.statins
eGFR, mL/min per $1.73m^2$, CRIC study equation	visitlevel.egfr_cric
Urine protein/creatinine ratio, median (IQR)	visitlevel.pcr_urine_combined
Low-density lipoprotein, mg/dL	visitlevel.ldl
Potassium, mEq/L	visitlevel.potassium
Hemoglobin, g/dL	visitlevel.cbchemoglobin
High Sensitivity C-reactive protein, mg/L	visitlevel.hs_crp

Table B: Comparison of values computed in integrity check to reference article Table 1 values

Variable	Overall (n=3254)	DSIC Overall (n=3254)	Diff. (n=0)	No Incident AF (n=3158)	DSIC No Incident AF (n=3151)	Diff. (n=7)	Incident AF (n=96)	DSIC Incident AF (n=103)	Diff. (n=7)
Age, years	57.0 (11.2)	57.0 (11.2)	0 (0)	56.9 (11.2)	56.9 (11.3)	0 (0.1)	61.1 (9.1)	61.4 (7.9)	0.3 (1.2)
Female	1461 (44.9)	1460 (44.9)	1 (0)	1421 (45.0)	1425 (45.2)	4 (0.2)	40 (41.7)	35 (34.0)	5 (7.7)
Non-Hispanic White	1363 (41.9)	1363 (41.9)	0 (0)	1320 (41.8)	1302 (41.3)	18 (0.5)	43 (44.8)	61 (59.2)	18 (14.4)
Non-Hispanic Black	1317 (40.5)	1318 (40.5)	1 (0)	1280 (40.5)	1289 (40.9)	9 (0.4)	37 (38.5)	29 (28.2)	8 (10.3)
Hispanic	441 (13.6)	440 (13.5)	1 (0.1)	429 (13.6)	431 (13.7)	2 (0.1)	12 (12.5)	9 (8.7)	3 (3.8)
Other	133 (4.1)	133 (4.1)	0 (0)	129 (4.1)	129 (4.1)	0 (0)	4 (4.2)	4 (3.9)	0 (0.3)
Education < High School	659 (20.3)	658 (20.3)	1 (0)	636 (20.2)	643 (20.4)	7 (0.2)	23 (24.0)	15 (14.6)	8 (9.4)
Income < $20,000	992 (30.5)	991 (30.4)	1 (0.1)	960 (30.4)	959 (30.4)	1 (0)	32 (33.3)	32 (31.1)	0 (2.2)
Cardiovascular disease	918 (28.2)	917 (28.2)	1 (0)	875 (27.7)	866 (27.5)	9 (0.2)	43 (44.8)	51 (49.5)	8 (4.7)
Myocardial infarction or prior coronary revascularization	582 (17.9)	582 (17.9)	0 (0)	554 (17.5)	549 (17.4)	5 (0.1)	28 (29.2)	33 (32.0)	5 (2.8)
Peripheral artery disease	196 (6.0)	196 (6.0)	0 (0)	188 (6.0)	190 (6.0)	2 (0)	8 (8.3)	6 (5.8)	2 (2.5)
Stroke	288 (8.9)	288 (8.9)	0 (0)	277 (8.8)	272 (8.6)	5 (0.2)	11 (11.5)	16 (15.5)	5 (4.0)
Hypertension	2791 (85.8)	2790 (85.7)	1 (0.1)	2702 (85.6)	2691 (85.4)	11 (0.2)	89 (92.7)	99 (96.1)	10 (3.4)
Diabetes mellitus	1555 (47.8)	1554 (47.8)	1 (0)	1500 (47.5)	1498 (47.5)	2 (0)	55 (57.3)	56 (54.4)	1 (2.9)
Current smoker	425 (13.1)	425 (13.1)	0 (0)	414 (13.1)	414 (13.1)	0 (0)	11 (11.5)	11 (10.7)	0 (0.8)
Current or former alcohol use	2084 (64.0)	2086 (64.1)	2 (0.1)	2028 (64.2)	2028 (64.4)	0 (0.2)	56 (58.3)	58 (56.3)	2 (2.0)
Body mass index, kg/m^2	31.9 (7.7)	31.9 (7.7)	0 (0)	31.9 (7.7)	31.9 (7.7)	0 (0)	33.1 (7.6)	32.8 (7.1)	0.3 (0.5)
Systolic blood pressure, mmHg	129 (22)	128 (22)	1 (0)	128 (22)	128 (22)	0 (0)	131 (23)	131.6 (21)	0.6 (2.0)
Diastolic blood pressure, mmHg	72 (13)	72 (13)	0 (0)	72 (13)	72 (13)	0 (0)	69 (11)	69 (13)	0 (2)
Modified Mini-Mental State Exam	91.38 (9.06)	91.39 (9.05)	0.01 (0.01)	91.41 (9.07)	91.40 (9.10)	0.01 (0.03)	90.28 (8.67)	92.44 (7.29)	2.16 (1.38)
Beck Depression Inventory	7.8 (7.9)	7.8 (7.9)	0 (0)	7.8 (7.9)	7.8 (7.9)	0 (0)	7.0 (6.6)	7.8 (7.0)	0.8 (0.4)
KDQOL-36, Mental Component Summary	50.5 (10.4)	50.5 (10.4)	0 (0)	50.4 (10.4)	50.5 (10.4)	0.1 (0)	52.9 (9.2)	50.3 (9.9)	2.6 (0.7)

Variable	Overall (n=3254)	DSIC Overall (n=3254)	Diff. (n=0)	No Incident AF (n=3158)	DSIC No Incident AF (n=3151)	Diff. (n=7)	Incident AF (n=96)	DSIC Incident AF (n=103)	Diff. (n=7)
KDQOL-36, Physical Component Summary	42.1 (11.4)	42.1 (11.4)	0 (0)	42.1 (11.4)	42.1 (11.4)	0 (0)	40.6 (10.8)	40.6 (11.1)	0 (0.3)
ACE inhibitor or angiotensin receptor blocker	2205 (68.2)	2203 (68.2)	2 (0)	2132 (68.0)	2125 (67.9)	7 (0.1)	73 (76.0)	78 (76.0)	5 (0)
Beta blocker	1479 (45.8)	1479 (45.8)	0 (0)	1436 (45.8)	1414 (45.2)	22 (0.6)	43 (44.8)	65 (63.1)	22 (18.3)
Antiplatelet	1449 (44.8)	1450 (44.9)	1 (0.1)	1395 (44.5)	1393 (44.5)	2 (0)	54 (56.3)	57 (55.3)	3 (1.0)
Warfarin	82 (2.5)	81 (2.5)	1 (0)	75 (2.4)	72 (2.3)	3 (0.1)	7 (7.3)	9 (8.7)	2 (1.4)
Statin	1737 (53.8)	1737 (53.8)	0 (0)	1677 (53.5)	1676 (53.6)	1 (0.1)	60 (62.5)	61 (59.2)	1 (3.3)
eGFR, mL/min per 1.73m^2, CRIC study equation	45.4 (17.0)	45.4 (17.0)	0 (0)	45.6 (17.0)	45.6 (16.9)	0 (0.1)	38.9 (14.5)	41.4 (14.1)	2.5 (0.4)
Urine protein/creatinine ratio, median (IQR)	0.15 (0.06-0.81)	0.15 (0.06-0.81)	0 (0-0)	0.15 (0.06-0.81)	0.15 (0.06-0.81)	0 (0-0)	0.29 (0.08-1.26)	0.18 (0.07-0.71)	0.11 (0.01-0.55)
Low-density lipoprotein, mg/dL	103.7 (35.5)	103.6 (35.5)	0.1 (0)	103.8 (35.7)	103.9 (35.6)	0.1 (0.1)	99.5 (28.7)	96.5 (31.7)	3 (3.0)
Potassium, mEq/L	4.3 (0.5)	4.3 (0.5)	0 (0)	4.3 (0.5)	4.3 (0.5)	0 (0)	4.4 (0.6)	4.3 (0.6)	0.1 (0)
Hemoglobin, g/dL	12.6 (1.8)	12.6 (1.8)	0 (0)	12.7 (1.8)	12.6 (1.8)	0.1 (0)	12.0 (1.9)	12.5 (1.9)	0.5 (0)
High Sensitivity C-reactive protein, mg/L	5.5 (9.9)	5.5 (9.9)	0 (0)	5.5 (10.0)	5.5 (10.0)	0 (0)	5.7 (6.8)	5.5 (6.2)	0.2 (0.6)

Attachment A: SAS Code

```
libname deriv "X:\NIDDK\niddk-
dr_studies1\CRIC\private_orig_data\Final_Data_for_Transfer_2021_OCT\Final_Data_for_Transfer_2021
_OCT\Study_Data\Derived_Data";
libname raw "X:\NIDDK\niddk-
dr_studies1\CRIC\private_orig_data\Final_Data_for_Transfer_2021_OCT\Final_Data_for_Transfer_2021
_OCT\Study_Data\Raw_Data";
libname fmts "X:\NIDDK\niddk-
dr_studies1\CRIC\private_orig_data\Final_Data_for_Transfer_2021_OCT\Final_Data_for_Transfer_2021
_OCT\Study_Data\Derived_Data";
options fmtsearch=(fmts);

/* DSIC for McCauley et al. Paper: Atrial Fibrillation and Longitudinal Change in Cognitive Function in
CKD*/

*Narrowing data to the appropriate initial population: 3939 original CRIC participants;
data person; set deriv.personlevel;
where enrol_phs = 1;
run;

*merging the person level, visit level, and ecg data ;
data visit; set deriv.visitlevel;
run;

data ecg; set deriv.ecg;
run;

proc sort data=person;
by PID;
run;

proc sort data=visit;
by PID vnum;
run;

proc sort data=ecg;
by PID vnum;
run;

data ecg_vis;
merge
visit (in=a)
ecg   (in=b);
by pid vnum;
run;
```

```
data per_vis;
merge
person (in=a)
ecg_vis (in=b);
by PID;
if a=1;
run;

*excluding those individuals who had AFIB at baseline;
proc freq data=per_vis;
tables afib afib_ecg afib2_ecg afib_ecg_cum afib2_ecg_cum;
where vnum = 3;
run;

data per_vis_1; set per_vis;
where vnum = 3;
run;

data per_vis_2; set per_vis_1;
if afib = 1 OR afib_ecg = 1 OR afib2_ecg = 1 /*OR afib_ecg_cum = 1 OR afib2_ecg_cum = 1*/ then flag1 =
1; else flag1 = 0;
run;

proc freq data=per_vis_2;
tables flag1;
run;

*excluding those with AFIB at baseline (n=675 paper is n=673);
data per_vis_3; set per_vis_2;
where flag1 = 0;
run;

*combining datasets back in;
data pid; set per_vis_3;
keep pid;
run;

data per_vis_4;
merge
pid (in=a)
per_vis (in=b);
by pid;
if a=1;
run;

ods select nlevels;
proc freq data=per_vis_4 nlevels;
tables pid;
```

```
run;

*excluding participants with missing MMSE;
proc freq data=per_vis_4;
tables mmse80 mmse_score/missing;
where vnum = 3;
run;

data per_vis_5; set per_vis_4;
keep pid vnum mmse80;
run;

proc transpose data=per_vis_5 out=wide_per_vis_5 prefix=vnum;
by pid;
id vnum;
var mmse80;
run;

data wide_per_vis_6; set wide_per_vis_5;
if
vnum3 = . AND vnum4 = . AND vnum5 = . AND vnum6 = . AND vnum7 = . AND vnum8 = . AND vnum9
= . AND vnum10 = . AND
vnum11 = . AND vnum12 = . AND vnum13 = . AND vnum14 = . AND vnum15 = . AND vnum16 = . AND
vnum17 = . AND vnum18 = . AND
vnum19 = . AND vnum20 = . AND vnum21 = . AND vnum22 = . AND vnum23 = . AND vnum24 = . AND
vnum25 = . AND vnum26 = . AND
vnum27 = . AND vnum28 = . AND vnum29 = . AND vnum30 = . AND vnum31 = . AND vnum32 = . AND
vnum33 = . AND vnum34 = . AND
vnum34 = . AND vnum35 = . AND vnum36 = . then flag = 1; else flag = 0;
run;

proc freq data=wide_per_vis_6;
tables flag;
run;

data pid2; set wide_per_vis_6;
keep pid;
where flag = 0;
run;

*keeping the 3254 with MMSE score;
data per_vis_7;
merge
per_vis_4 (in=a)
pid2     (in=b);
by pid;
if b = 1;
run;
```

```
data overall; set per_vis_7;
where vnum = 3;
run;

*checking that we arrived at the appropriate numbner;
ods select nlevels;
proc freq data=per_vis_7 nlevels;
tables pid;
run;

*seeing the incident cases of afib over the course of follow up, calling in the CVD events dataset;
data cvd; set deriv.all_cvd_events;
keep pid vnum event;
where event = "AFIB";
run;

proc sort data=cvd;
by pid vnum;
run;

proc sort data=per_vis_7;
by pid vnum;
run;

data per_vis_8; set per_vis_7;
keep pid vnum afib afib_ecg afib2_ecg afib2_ecg_cum afib_ecg_cum;
run;

data afib;
merge
cvd (in=a)
per_vis_8 (in=b);
by pid vnum;
if b=1;
run;

data afib1; set afib;
if /*afib = 1 OR */afib_ecg = 1 OR afib2_ecg = 1 or afib_ecg_cum = 1 OR afib2_ecg_cum = 1 OR event =
"AFIB" ;
run;

ods select nlevels;
proc freq data=afib1 nlevels;
tables pid;
run;

*only keeping in person visits;
```

```
data afib2; set afib1;
if mod(vnum, 2) ^= 0 then output;
run;

*keeping incident cases of afib only;
data test; set afib2;
by pid;
if first.pid;
run;

ods select nlevels;
proc freq data=test nlevels;
tables pid vnum;
run;

*closest to the number of Incident AFIB in the paper;
proc freq data=test;
tables pid ;
where vnum <15 ;
run;

data pid3; set test;
keep pid;
if vnum <15;
run;

*incident AF;
data inc_af;
merge
per_vis_7 (in=a)
pid3 (in=b);
by pid;
if b = 1;
run;

ods select nlevels;
proc freq data=inc_af nlevels;
tables pid;
run;

data inc_af; set inc_af;
where vnum = 3;
run;

*no incident AF;
data no_af;
merge
per_vis_7 (in=a)
```

```
pid3 (in=b);
by pid;
if a = b then delete;
run;

ods select nlevels;
proc freq data=no_af nlevels;
tables pid;
run;

data no_af; set no_af;
where vnum = 3;
run;

/*************************************************/
/*          Replicating Table 1          */
/*************************************************/

*Age;
proc means data=overall n mean std;
var age_integer;
run;

proc means data=no_af n mean std;
var age_integer;
run;

proc means data=inc_af n mean std;
var age_integer;
run;

*Female;
proc freq data=overall;
tables sex;
run;

proc freq data=no_af;
tables sex;
run;

proc freq data=inc_af;
tables sex;
run;

*Race/Ethnicity;
proc freq data=overall;
tables race_ethnicity_cat2;
run;
```

```
proc freq data=no_af;
tables race_ethnicity_cat2;
run;

proc freq data=inc_af;
tables race_ethnicity_cat2;
run;

*Education <High School;
proc freq data=overall;
tables edu_cat_2;
run;

proc freq data=no_af;
tables edu_cat_2;
run;

proc freq data=inc_af;
tables edu_cat_2;
run;

*Income <$20,000;
proc freq data=overall;
tables income_cat_1;
run;

proc freq data=no_af;
tables income_cat_1;
run;

proc freq data=inc_af;
tables income_cat_1;
run;

*Cardiovascular Disease;
proc freq data=overall;
tables anycvd;
run;

proc freq data=no_af;
tables anycvd;
run;

proc freq data=inc_af;
tables anycvd;
run;
```

```
*Myocardial infarction;
proc freq data=overall;
tables mirevasc;
run;

proc freq data=no_af;
tables mirevasc;
run;

proc freq data=inc_af;
tables mirevasc;
run;

*PAD/PVD;
proc freq data=overall;
tables pvd;
run;

proc freq data=no_af;
tables pvd;
run;

proc freq data=inc_af;
tables pvd;
run;

*Stroke;
proc freq data=overall;
tables stroke;
run;

proc freq data=no_af;
tables stroke;
run;

proc freq data=inc_af;
tables stroke;
run;

*Hypertension;
proc freq data=overall;
tables hypertension;
run;

proc freq data=no_af;
tables hypertension;
run;
```

```
proc freq data=inc_af;
tables hypertension;
run;

*Diabetes Mellitus;
proc freq data=overall;
tables diabetes;
run;

proc freq data=no_af;
tables diabetes;
run;

proc freq data=inc_af;
tables diabetes;
run;

*Current Smoker;
proc freq data=overall;
tables smokenow;
run;

proc freq data=no_af;
tables smokenow;
run;

proc freq data=inc_af;
tables smokenow;
run;

*Current or former alcohol;
proc freq data=overall;
tables alcoh_use;
run;

proc freq data=no_af;
tables alcoh_use;
run;

proc freq data=inc_af;
tables alcoh_use;
run;

*BMI;
proc means data=overall n mean std;
var bmi;
run;
```

```
proc means data=no_af n mean std;
var bmi;
run;

proc means data=inc_af n mean std;
var bmi;
run;

*Syst BP;
proc means data=overall n mean std;
var systolic;
run;

proc means data=no_af n mean std;
var systolic;
run;

proc means data=inc_af n mean std;
var systolic;
run;

*Diast BP;
proc means data=overall n mean std;
var diastolic;
run;

proc means data=no_af n mean std;
var diastolic;
run;

proc means data=inc_af n mean std;
var diastolic;
run;

*MMSE;
proc means data=overall n mean std;
var mmse_score;
run;

proc means data=no_af n mean std;
var mmse_score;
run;

proc means data=inc_af n mean std;
var mmse_score;
run;

*Beck depression index;
```

```
proc means data=overall n mean std;
var becks_score;
run;

proc means data=no_af n mean std;
var becks_score;
run;

proc means data=inc_af n mean std;
var becks_score;
run;

*KDQOL-36 MCS;
proc means data=overall n mean std;
var sf12_mcs;
run;

proc means data=no_af n mean std;
var sf12_mcs;
run;

proc means data=inc_af n mean std;
var sf12_mcs;
run;

*KDQOL-36 PCS;
proc means data=overall n mean std;
var sf12_pcs;
run;

proc means data=no_af n mean std;
var sf12_pcs;
run;

proc means data=inc_af n mean std;
var sf12_pcs;
run;

*ACE inhibitor or ARBs;
proc freq data=overall;
tables acearb;
run;

proc freq data=no_af;
tables acearb;
run;

proc freq data=inc_af;
```

```
tables acearb;
run;

*Beta blockers;
proc freq data=overall;
tables betablk;
run;

proc freq data=no_af;
tables betablk;
run;

proc freq data=inc_af;
tables betablk;
run;

*Antiplatelet;
proc freq data=overall;
tables antiplatelet;
run;

proc freq data=no_af;
tables antiplatelet;
run;

proc freq data=inc_af;
tables antiplatelet;
run;

*Warfarin;
proc freq data=overall;
tables anticoag_vitamink;
run;

proc freq data=no_af;
tables anticoag_vitamink;
run;

proc freq data=inc_af;
tables anticoag_vitamink;
run;

*Statin;
proc freq data=overall;
tables statins;
run;

proc freq data=no_af;
```

```
tables statins;
run;

proc freq data=inc_af;
tables statins;
run;

*eGFR;
proc means data=overall n mean std;
var egfr_cric;
run;

proc means data=no_af n mean std;
var egfr_cric;
run;

proc means data=inc_af n mean std;
var egfr_cric;
run;

*urin protein/creatinine ratio;
proc means data=overall n median q1 q3;
var pcr_urine_combined;
run;

proc means data=no_af n median q1 q3;
var pcr_urine_combined;
run;

proc means data=inc_af n median q1 q3;
var pcr_urine_combined;
run;

*LDL;
proc means data=overall n mean std;
var ldl;
run;

proc means data=no_af n mean std;
var ldl;
run;

proc means data=inc_af n mean std;
var ldl;
run;

*Potassium ;
proc means data=overall n mean std;
```

```
var potassium;
run;

proc means data=no_af n mean std;
var potassium;
run;

proc means data=inc_af n mean std;
var potassium;
run;

*hemoglobin;
proc means data=overall n mean std;
var cbchemoglobin;
run;

proc means data=no_af n mean std;
var cbchemoglobin;
run;

proc means data=inc_af n mean std;
var cbchemoglobin;
run;

*High Sensitivity CRP;
proc means data=overall n mean std;
var hs_crp;
run;

proc means data=no_af n mean std;
var hs_crp;
run;

proc means data=inc_af n mean std;
var hs_crp;
run;
```