1.a. Full Title: Mitral Annular Calcification and Its Association with Cardiovascular Events in African Americans

b. Abbreviated Title (Length 26 characters): MAC and Cardiovascular Events

2. Writing Group (list individual with lead responsibility first):

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3. Timeline: Submit to the Publication Committee 10/26/01
   Analysis Completed 11/26/01
   Draft manuscript 01/10/01
   Final manuscript 02/10/01
   NHLBI and ARIC clearance 03/10/01
   Submission for publication 03/20/01

4. Rationale: Mitral annular calcification (MAC) represents an echocardiographic and radiologic finding which, although recognized for many years now, has perplexed clinicians as to its clinical significance. Data from the past twenty years have shown a correlation between MAC and advanced age, female gender, left atrial enlargement, atrial fibrillation, conduction abnormalities, hypertension, renal dysfunction, coronary atherosclerosis and thromboembolic strokes. The prevailing general opinion in the medical literature is that MAC represents another manifestation of atherosclerosis and should alert the clinician to the possibility of coronary artery disease. Despite the apparent link between MAC and coronary calcium, there is conflicting data in the medical literature which shows there is no correlation between MAC and coronary events. To date, no study has looked at the correlation between MAC and cardiovascular events in an African American population.
5. Main Hypothesis/Study Questions: Does MAC predict cardiovascular events in the Jackson Cohort of the ARIC study?

6. Data (variables, time window, source, inclusions/exclusions): Echocardiographic measurements of MAC severity will be used to assess the association of the exposure MAC with the outcome cardiovascular events. Mitral annular calcification measurements were obtained by echocardiogram during the 3rd cycle of the ARIC study. Major cardiac events will be defined as myocardial infarction, development of unstable angina pectoris, coronary revascularization, thromboembolic stroke or cardiac death. Confounders for this study will include age, gender, hypertension, diabetes, smoking, cholesterol, and body mass index. Information regarding whether patients were in atrial fibrillation, have normal renal function or have a history of stroke will be evaluated. The sample population will consist of some 1730 participants with a mean age of 52 years. Approximately 35% are mean and 65% are women. Discrete independent variables will be gender (M/F), hypertension (yes/no), smoking history (yes/no), diabetes status (yes/no). Continuous independent data include age and BMI. Cardiac events will be used as discrete dependent data. Mitral annular calcification will be used as ordinal data. Categories include those with severe MAC (>5mm), those with mild-moderate (5-3mm) and those with less than mild to no MAC. Descriptive data will be reviewed for each of the variables collected including the mean, median, maximum, minimum, range, skewness and kurtosis. Univariate analysis will be performed using simple linear regression for continuous data comparing exposure and confounders with the outcome. For discrete data we will use both t-test and Chi-square test. Multiple linear regression will be used for adjustment to assess the correlation between exposure/confounder with the outcome variable.

7.a. Will the data be used for non-CVD analysis in this manuscript?  ____ Yes  ____ No  
   b. If Yes, is the author aware that the file ICTDER02 must be used to exclude persons with a value RES_OTH = “CVD Research” for non-DNA analysis, and for DNA analysis RES_DNA = “CVD Research” would be used?  ____ Yes  ____ No
   (This file ICTDER02 has been distributed to ARIC PIs, and contains the responses to consent updates related to stored sample use for research.)

8.a. Will the DNA data be used in this manuscript?  ____ Yes  ____ No  
   b. If yes, is the author aware that either DNA data distributed by the Coordinating Center must be used, or the file ICTDER02 must be used to exclude those with value RES_DNA = “No use/storage DNA”?  ____ Yes  ____ No

9. The lead author of this manuscript proposal has reviewed the list of existing ARIC Study manuscript proposals and has found no overlap between this proposal and previously approved manuscript proposals either published or still in active status. ARIC Investigators have access to the publications lists under the Study Members Area of the web site at: [http://bios.unc.edu/units/csc/ARIC/stdy/studymem.html](http://bios.unc.edu/units/csc/ARIC/stdy/studymem.html)
Yes