1. Title

a) Full Title: Trends in CHD in Mississippi: do the ARIC community surveillance data help explain statewide mortality trends?
b) Abbreviated Title (Length 26 characters): CHD trends in Mississippi.

2. Writing group members: Alan Penman, Ken Butler, Thomas Mosley, Mike McMullan, Wayne Rosamond

First/corresponding author: Alan D. Penman
Dept of Medicine (Geriatrics)
Clinical Research Program
Building LK
876A Lakeland Drive
Jackson, Mississippi 39216

3. Timeline

Data analysis: 6/1/05 – 6/30/05
First draft completed: 7/31/05

4. Rationale

Analysis of pooled (all four sites) ARIC community surveillance data for 1987-2001\(^1\) (extending previously published results\(^2,3\)) has shown that CHD mortality is decreasing in all race-gender groups, and the declines are statistically significant except in African-American men. The picture for CHD incidence is mixed and the pattern less clear: hospitalized definite MI is
declining, but the percent change in hospitalized definite plus probable MI is not statistically significant, and is actually increasing in African-American men.\textsuperscript{1,2,3} The pooled data represent a mixture of differing trends, however. Jackson incidence rates are increasing, whereas incidence rates at the other three sites are stable or decreasing over time.\textsuperscript{1} Therefore, it would be interesting and important to analyze in detail the time trends in CHD incidence and mortality for Jackson separately.

In addition, statewide surveillance of CVD in Mississippi is based solely on mortality rates developed from death certificate data, for which cause of death is not validated. According to these data, Mississippi has one of the highest CHD mortality rates in the nation, with large racial disparities: African-American rates are not declining as rapidly as expected and are 50% higher than white rates.\textsuperscript{4,5} It is not clear whether this is due to higher CHD incidence and/or greater case-fatality. Statewide CHD incidence data are not available to help resolve this issue, but incidence data from ARIC-Jackson may shed light on the statewide trends (even though it is acknowledged that such a comparison involves different geographic areas, i.e., Jackson vs. statewide). Separate analysis of the Jackson ARIC community surveillance data, particularly the incidence data, may help explain statewide trends and racial disparities. Comparison of mortality data from ARIC-Jackson with statewide mortality data will also be informative. This comparison and interpretation would be useful for public health leaders and policy makers in Mississippi.

5. \textbf{Hypotheses to be tested}

This is a descriptive study of time trends in age-specific and age adjusted race- and gender-specific rates of CHD incidence and death for the city of Jackson. Jackson data will also be compared and contrasted with statewide CHD mortality data for the same period.

6. \textbf{Subjects, Data (inclusions/exclusions, source, time window, variables), and Methods}

\textbf{Inclusion:} all residents aged 35-74 years in the Jackson community surveillance area (city of Jackson) with hospitalized CHD and fatal in- and out-of-hospital CHD, as previously described.\textsuperscript{6,7}
Exclusions: as previously described.6,7

Methods of analysis
Poisson/binomial regression to calculate age adjusted rates with 95% CIs (using appropriate weighting to account for the sampling probabilities and adjust the variances of the estimators) and average annual percent change in rates (AAPC). Comparison of AAPC by age group, gender, and race. (Test age*year interaction terms.) Examine for differences in AAPC by time period (e.g., 1987-1994 and 1995-2001 used previously1,2). (Consider use of linear and quadratic trend terms to determine pattern of trend relative to a specified year.8)

Outcome measures: (as per Reference 2, and as numbers allow)

- CHD deaths (all, in-hospital, out-of-hospital)
- Incident MI
- Incident MI (definite only)
- Recurrent MI
- Incident or recurrent MI
- Incident MI or fatal CHD
- Incident or recurrent MI or fatal CHD
- Case-fatality for MI
- Case-fatality for CHD

7.a. Will the data be used for non-CVD analysis in this manuscript? _____ Yes _X_ No

8.a. Will the DNA data be used in this manuscript? _____ Yes _X_ 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://www.cscc.unc.edu/ARIC/search.php

_X_ Yes ____ No
10. What are the most related manuscript proposals in ARIC (authors are encouraged to contact lead authors of these proposals for comments on the new proposal or collaboration)?

References (2) and (3)

11.a. Is this manuscript proposal associated with any ARIC ancillary studies or use any ancillary study data?  
   ____ Yes  ____ No

12. Manuscript preparation is expected to be completed in one to three years. If a manuscript is not submitted for ARIC review at the end of the 3-years from the date of the approval, the manuscript proposal will expire.

References