ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #174

1. Title:
The relationship between incident MI or fatal CHD and arterial wall thickness and standard CHD risk factors

2. Writing Group:
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3. Rationale:
The ARIC cohort of 15,800 persons has now been followed 1-4 years for CHD morbidity and mortality. This follow-up and the baseline examination allows a definition of incident MI. There are approximately 130 such events with abstracted hospital records or death certificates in the ARIC database, which is presently fairly complete through 1990. CHD risk factor information is available from the first ARIC clinic visit on all 15,800 participants, and arterial wall thickness on around 12,000 participants (missing for the first five months of the first visit).

The relationship between incident MI and standard risk factors serum cholesterol (CHOL), smoking, HDL-cholesterol (HDL), and blood pressure (BP) or hypertension (HYPER) have, of course, been well established in other populations. These relationships will also be explored in ARIC, and indeed, there are reasons to suspect the relationships may be somewhat changed from earlier studies, due to the present extremely widespread treatment of hypertension.

The relationship between prevalent CHD and arterial wall thickness has been explored in ARIC (and in other studies), and now the relationship can be explored in the prospective mode.

It is expected that this first manuscript on cohort incident CHD will provide the baseline paper for the study of incident CHD in ARIC.

4. Hypothesis:
There is a relationship between CHD incidence and each of the following: cholesterol, HDL, blood pressure, hypertension, smoking, family history, diabetes, BMI, and arterial wall thickness. The main focus would be to estimate and test race/sex/age-adjusted "risk ratios" for wall thickness, and secondarily for each of the standard risk factors individually. Further, effect of additionally adjusting for the standard risk factors in assessing the incident event/wall thickness relationship will be considered. The analysis will use the Cox proportional hazards model.

5. Timeline:
Only around 40% of potential incident definite or probable MIs presently have hospital ECG data in the database, but with a combination of hospital discharge codes and pain and enzyme data from the abstracted medical record, a temporary definition of MI can be established for those without all needed data. Similarly, temporary definitions of out-of-hospital fatal CHD will be used, and analysis done to produce an abstract for

the Oslo meetings. The presentation and publication would be in terms of validated events.