1.a. Full Title: Where do coronary heart disease deaths occur? The Atherosclerosis Risk in Communities Surveillance

b. Abbreviated Title (Length 26 characters):
Title: Location of CHD deaths

2. Writing Group:
Writing group members: (author order to be determined)
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Invite MMCC member, anyone else who wants to be on it

I, the first author, confirm that all the coauthors have given their approval for this manuscript proposal. __IAD__ [please confirm with your initials electronically or in writing]

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3. Timeline:
Sept 2012: conceptualize paper
Oct 2012: submit proposal to Steering Committee for approval.
Oct 2012: obtain Steering Committee approval; preliminary analyses;
4. Rationale:
The distributions and trends describing the location of CHD fatality are often confined to dichotomizing whether deaths occurred within hospitals (excluding emergency rooms) or outside of hospitals. These trends serve as key indicators of progress made in public health efforts for primary prevention of out-of-hospital CHD deaths and advances in clinical treatment for hospitalized patients.[1-4] Nevertheless nuanced analyses are merited that describe the diversity of locations of CHD fatality beyond the simple division of in- and out-of-hospital deaths to document and better understand how and where to focus development of interventions to prevent these deaths. Past research describing the circumstances surrounding out-of-hospital deaths includes whether the death occurred at home or in public[5, 6], presence of bystanders[5], administration of CPR[7, 8], time until ambulance arrival[9, 10], distance from the hospital[11], demographic factors (race/ethnicity, gender, and marital status)[12], and neighborhood characteristics[13]. The proposed manuscript seeks to build on extant literature using data collected from community surveillance with in-depth analyses of locations of CHD deaths, obtained from the death certificates and informant interviews. The overarching goal is to identify gaps and inform development of targeted public health interventions to reduce CHD mortality.

We benefit from the ARIC rigorous study design in several ways. All CHD events undergo meticulous clinical review. Unlike most other studies, ARIC extended the age-eligibility of CHD events from ages 35-74 to ages 35-84 for events occurring since 2005. The interviews with informants of decedents provide a rich dataset for nuanced analyses. Last, the systematic sampling of CHD events in the four communities produces generalizable results.

5. Main Hypothesis/Study Questions:

The primary aim of this proposal is to perform descriptive and exploratory analyses to characterize the distribution of CHD mortality by the location of the death using ARIC community surveillance. These analyses will inform development of future manuscript proposals. On the subset of decedents for whom detailed information is available, which was collected during informant interviews, we will also conduct in-depth exploratory analyses of other factors surrounding the event such as timing between onset of symptoms and death, whether an ambulance was called, administration of CPR, and the presence of bystanders during the event.

Research questions:

1) What proportion of out-of-hospital deaths occur at the decedent’s residence as compared to other locations including the emergency room, nursing homes, or other places?

2) Does the distribution of death locations vary by race, gender, age, marital status, history of CHD morbidity, and the interval between onset of symptoms and death?
3) What are differences in distribution of death location by gender, age, and marital status history of CHD morbidity, and the interval between onset of symptoms and death, in stratified analyses by race?

4) From the informant interviews, to what extent do the location of death events vary by: a) the presence of witnesses; b) whether EMS were called and the duration of the interval between symptom onset and 911 call; c) interval between 911 call and arrival of EMS; and d) whether CPR was administered?

6. Design and analysis (study design, inclusion/exclusion, outcome and other variables of interest with specific reference to the time of their collection, summary of data analysis, and any anticipated methodologic limitations or challenges if present).

These analyses will use CHD community surveillance data for events that occurred during 2005-2009. The period 2005-2009 was chosen because the age eligibility for sampling CHD events was extended from 35-74 to 35-84 years. Because of the narrow observation period, the analysis will be cross-sectional and will report weighted percentages (not rates). (Possible subsequent manuscripts will involve analysis of trends.)

We will use the following datasets: 1) death certificates (S09DTHA1); 2) CHD derived events (S09EVT1); 3) informant interviews (S09IFIA1)

The analysis will include CHD deaths identified from the variable FATALDX3 in the Event file, classified as definite fatal CHD or definite fatal MI. The primary location of deaths is based on the death certificate (S09DTHA1), variables DTHA12 and DTHA13. (There are n=1419 CHD deaths that meet these criteria.)

Wayne – Anna suggested adding that table of how each location was coded. What do you think?

To perform black-white racial comparisons, analyses will be restricted to the field centers Jackson, MS and Forsyth County, NC because these field centers enrolled both race groups.

To account for sampling design, all analyses will be weighted as appropriate.

Limitations: Although the informant interviews have several variables, only 70% of decedents had complete or partial interviews and within interviews, several questions have missing data because informants could not respond.

REFERENCES


