ARIC Manuscript Proposal #2213

PC Reviewed: 9/10/13    Status: A    Priority: 2
SC Reviewed: _________  Status: _____  Priority: ____

1. **a. Full Title:** Temporal trends of sudden cardiac death in four United States Communities: the Atherosclerosis Risk in Communities (ARIC) Surveillance Study

   Note: this project is a proposed update to Wayne’s manuscript proposal “Trends in Sudden Coronary Death, 1987-1995” (MS# 535) and the published ARIC manuscript by Ni and colleagues1 entitled “Trends from 1987 to 2004 in sudden death due to coronary heart disease: the Atherosclerosis Risk in Communities (ARIC) study.”

   **b. Abbreviated Title (Length 26 characters):** Sudden cardiac death trends

2. **Writing Group:**
   Bo C. Nebolisa (first author), Nisa Maruther, Wayne Rosamond (senior author), others welcome

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

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3. **Timeline:**
   October 2013: Abstract submission to Epi/NPAM
   November 2013: 1st draft completed
December 2013/January 2014: Manuscript submission to ARIC publications committee for review

4. **Rationale:**
Despite advances in cardiopulmonary resuscitation techniques, the probability of survival after cardiac arrest is low.²,³ As a result, sudden cardiac death (SCD) remains a significant component of total coronary heart disease (CHD) mortality¹,⁴ and is a major public health problem in the developed world. However, population-based estimates of annual trends of sudden death due to CHD in the United States are limited.¹,⁵ Unfortunately, many of these published reports have utilized death certificate data, known to have questionable accuracy,⁶ to compute annual SCD rates. Thus, the ARIC surveillance study, which rigorously adjudicates deaths due to CHD, is ideally positioned to estimate the long-term annual trends SCD.

5. **Main Study Questions and Aims:**
   1. To characterize temporal trends of SCD over a 24-year period, 1987 to 2011, in the ARIC communities.
      a. To assess if trends vary by: age, gender, race, community location and CHD history

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).**

   **Study design**
   A retrospective surveillance study to describe annual trends SCD in four United States communities: Forsyth County, North Carolina; Jackson, Mississippi; eight suburbs of Minneapolis, Minnesota; and Washington County, Maryland.

   **Inclusion criteria**
   All community surveillance SCD events defined as definite or possible CHD deaths occurring within 1 hour of acute cardiac symptoms from January 1987 to December 31, 2011 will be included.

   **Exclusion criteria**
   Deaths with unknown timing of symptom onset will be excluded.

   **Outcomes of interest**
   1. SCD

   **Variables of interest**
   *Demographic:* age, gender, race and ARIC community
   *Clinical:* CHD history

   **Summary of data analysis plan**
All estimates will be weighted to account for the complex ARIC Surveillance Study sampling scheme. Age adjusted annual SCD event rates stratified by sex, race, ARIC community and CHD history will be calculated based upon population denominators estimated by interpolation and extrapolation of United States census population estimates. Poisson regression will be utilized to estimate annual changes in SCD rates.

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

    b. If Yes, is the author aware that the file ICTDER03 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? N/A

8. a. Will the DNA data be used in this manuscript? No

    b. If yes, is the author aware that either DNA data distributed by the Coordinating Center must be used, or the file ICTDER03 must be used to exclude those with value RES_DNA = “No use/storage DNA”? N/A

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

Yes, we have reviewed the list of existing manuscript proposals. This project is a proposed update to Wayne’s manuscript proposal “Trends in Sudden Coronary Death, 1987-1995” (MS# 535) and the published ARIC manuscript by Ni and colleagues1 entitled “Trends from 1987 to 2004 in sudden death due to coronary heart disease: the Atherosclerosis Risk in Communities (ARIC) study.”

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)?
    - # 1333: Socioeconomic indicators and the risk of sudden cardiac death (Lead: Kucharska-Newton)

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

    b. If yes, is the proposal
        ___ A. primarily the result of an ancillary study (list number* __________)
        ___ B. primarily based on ARIC data with ancillary data playing a minor role (usually control variables; list number(s)* __________ __________ __________)

*ancillary studies are listed by number at http://www.cscc.unc.edu/aric/forms/
12 a. 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.

b. The NIH instituted a Public Access Policy in April, 2008 which ensures that the public has access to the published results of NIH funded research. It is your responsibility to upload manuscripts to PUBMED Central whenever the journal does not and be in compliance with this policy. Four files about the public access policy from http://publicaccess.nih.gov/ are posted in http://www.cscc.unc.edu/aric/index.php, under Publications, Policies & Forms. http://publicaccess.nih.gov/submit_process_journals.htm shows you which journals automatically upload articles to Pubmed central.

References