

## ARIC Manuscript Proposal # 1649

PC Reviewed: 5/11/10  
SC Reviewed: \_\_\_\_\_

Status: A  
Status: \_\_\_\_\_

Priority: 2  
Priority: \_\_\_\_\_

**1.a. Full Title: Long-term Community Based Trends in Medical Care in the Setting of Hospitalized Myocardial Infarction, 1987 to 2007: The Atherosclerosis Risk in Communities (ARIC) Study**

*Note: This is a proposed update to ARIC manuscript proposal #395: Long-term Community Based Trends in Medical Care in the Setting of Hospitalized Myocardial Infarction, 1987 to 2000: The Atherosclerosis Risk in Communities (ARIC) Study*

**b. Abbreviated Title (Length 26 characters): Long-term trends in MI Treatment**

**2. Writing Group:**

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

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**ARIC author** to be contacted if there are questions about the manuscript and the first author does not respond or cannot be located (this must be an ARIC investigator).

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### **3. Timeline:**

April 2010 – August 2011

### **4. Rationale:**

Clinical practice guidelines for treatment of myocardial infarction (MI) have evolved in the past two decades as information from clinical trials and experience from practice are shared. The diffusion of these ideas and the establishment of new practice patterns might vary over time and between communities.

### **5. Main Hypothesis/Study Questions:**

Our study aims are as follows:

1) Estimate the 21-year trends of in-hospital use of 8 interventions for acute MI including:

- Aspirin
- Beta blockers
- Calcium channel blockers
- IV heparin
- Ace Inhibitors
- Thrombolytics
- Percutaneous transluminal coronary angioplasty (PTCA)
- Coronary Artery Bypass Graft (CABG)

2) Estimate 21-year trends of time-to-treatment for in-hospital MI interventions, including:

- Thrombolytics
- Percutaneous transluminal coronary angioplasty (PTCA)
- Coronary Artery Bypass Graft (CABG)

3) Evaluate how these trends vary with

- Age
- Demographics
- Multiple therapy
- Prior medical history
- Presenting severity
- Clinical complications

### **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).**

We plan to use data on hospitalization from ARIC surveillance (1987 – 2007) in four US communities. Information on length of hospitalization, type and number of procedures carried out,

clinical characteristics of patients, laboratory tests related to MI, and patient disposition can be found on HRA forms. Hospital characteristics, including teaching/non-teaching, rural/urban, and large/small bedsize will be identified.

#### **Inclusions**

- Proper age and residence with ICD-9 code consistent with MI
- Only include “definite” and “probable” MI

#### **Event classification**

- Single event: any set of hospitalizations within 28 days
- Multiple event: classified as individual event with unique event date

#### **Outcome classification**

- Incidence rates of therapy and procedure use by year from 1987-2007
- Time-to-treatment for all patients receiving PTCA, CABG, and thrombolytics

#### **Variables**

Variables of interest fall into 5 groups:

##### **1)Therapies**

- Therapies will be documented as “received” if appeared on discharge prescription list or administered during hospitalization
- Dichotomous yes/no classification. Any dose/course of therapy classified as exposure to drug
- Patients with contraindications to therapies of interest will be excluded

##### **2)Demographics**

Age, race, gender, center

##### **3)Relevant clinical history**

-MI, Stroke, Hypertension

##### **4)Measures of presenting severity**

Systolic Blood Pressure

Pulse

Chest Pain

##### **5)Complications during hospitalization**

Shock, Stroke, CHF/Pulmonary Edema

#### **Statistical analysis**

- We will use multivariable logistic regression to estimate the association between receipt of each therapy and covariates of interest, including age, race, gender, and center.
- We will use Poisson generalized linear mixed models to estimate rates of treatment use by year for the study period of 1987- 2007
- We will first run logistic and Poisson models all events (probable or definite MI) before restricting to only definite MIs

**7.a. Will the data be used for non-CVD analysis in this manuscript?** \_\_\_\_ Yes  
\_\_x\_\_ 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?** \_\_\_\_

Yes \_\_x\_\_ No

(This file ICTDER03 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

**8.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"?**  
☐ 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://www.csc.unc.edu/ARIC/search.php>**

☐ 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)?**

Pearte, CA. Variation and Temporal Trends in the Use of Diagnostic Testing During Hospitalization for Acute Myocardial Infarction by Age, Gender, Race, and Geography (The ARIC Study)

Rosamond, WD. ARIC Manuscript Proposal #395: Community Based Trends in Medical Care in the Setting of Hospitalized Myocardial Infarction, 1987 to 2000: A Report from the Atherosclerosis Risk in Communities (ARIC) Study

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

**11.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.csc.unc.edu/aric/forms/>

**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.**