

**ARIC Manuscript Proposal # 1179**

**PC Reviewed:**   08   /   15   /   06  

**Status:**   A  

**Priority:**   2  

**SC Reviewed:**   08   /   17   /   06  

**Status:**   A  

**Priority:**   2  

**1.a. Full Title:**

Neighborhood of residence and individual insurance status: Influence on prehospital delay time for acute myocardial infarction

**b. Abbreviated Title (Length 26 characters):**

SES and prehospital MI delay

**2. Writing Group:**

Kathy Rose, Aileen McGinn, David Goff, Wayne Rosamond, Chirayath Suchindran, Joy Wood, others welcome

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

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**3. Timeline:**

Analyses to begin Summer 2006. An abstract will be prepared for the 2007 American Heart Association meeting (October deadline). A draft of manuscript is expected during Spring 2007.

#### **4. Rationale:**

Evidence suggests that outcomes following an acute myocardial infarction can be more favorable if medical treatment is received in a timely manner[1, 2]. Thus, much attention has been focused on reducing the time elapsed between onset of acute myocardial infarction symptoms and hospital arrival (prehospital delay time)[3, 4]. Previous studies have shown that prehospital delay time as well as time to treatment, is influenced by the patients' race/ethnicity[5-8] and gender[9-12].

In ARIC surveillance, McGinn et al. (2005) found that older individuals, blacks and women delay longer than younger people, whites and men[13]. Other significant factors shortening prehospital delay time were arrival by emergency medical service (EMS) and presence of chest pain, as supported by additional research[14-17]. We wish to expand on this earlier work in the form of a brief report to investigate how measures of socioeconomic status – neighborhood-level census variables and individual-level insurance variables – affect prehospital delay time for MI after consideration of the previously mentioned factors.

Another element we wish to consider in the analysis is distance traveled from the patients' residence to the hospital, as driving distance may influence the prehospital delay time of myocardial infarct patients[18].

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

1. Do neighborhood-level SES measures of income and education demonstrate an inverse gradient with the time elapsed between onset of acute myocardial infarction symptoms and hospital arrival (prehospital delay time)?
  - a. Are there differences by race, age, or gender?
  - b. Does the association change after taking the following variables into account: year of event, mode of arrival to hospital, distance traveled, or clinical characteristics (i.e., chest pain)?
2. Does prehospital delay time differ by individual insurance status?
  - a. Are there differences by race, age, or gender?
  - b. Does the association change after taking the following variables into account: year of event, mode of arrival to hospital, distance traveled, or clinical characteristics (i.e., chest pain)?

#### **6. Data (variables, time window, source, inclusions/exclusions):**

##### Data Sources:

Definite and probable acute myocardial infarctions identified through ARIC hospital surveillance whose addresses have been previously geocoded at the census tract level over the time period of 1993-2003 will be analyzed.

##### SES Exposures:

The neighborhood-level measures of SES of interest (i.e., census tract income and education) will be obtained from the 2000 U.S. Census. The individual-level variable selected for study is insurance status from ARIC surveillance data.

Health Outcomes:

Prehospital delay time from symptom onset of acute myocardial infarction to hospital arrival (first admission) is the outcome of interest for this analysis. Covariates include race, gender, age, year of event, mode of arrival to hospital, distance traveled, and clinical characteristics (ie, chest pain).

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

Yes  No

**b. If Yes, is the author aware that the file ICTDER02 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  No  n/a

(This file ICTDER02 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 ICTDER02 must be used to exclude those with value RES\_DNA = "No use/storage DNA"?**

Yes  No  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.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)?**

MS 531 (Rosamond), published in 2005 by McGinn

MS 1103 (Rose)

**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 (AS 2004.05)**

We will also use some census-tract level SES data collected as part of ARIC AS 1998.02

**B. primarily based on ARIC data with ancillary data playing a minor role (usually control variables; list number(s)\* \_\_\_\_\_)**

- 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

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16. Morgan, D.M., *Effect of Incongruence of Acute Myocardial Infarction Symptoms on the Decision to Seek Treatment in a Rural Population*. Journal of Cardiovascular Nursing, 2005. **20**(5): p. 365-71.
17. Osganian, S.K., et al., *Use of Emergency Medical Services for Suspected Acute Cardiac Ischemia among Demographic and Clinical Patient Subgroups: The REACT Trial*. Prehospital Emergency Care, 2002. **6**(2): p. 175-185.
18. Nallamothu, B.K., et al., *Driving Times and Distances to Hospitals With Percutaneous Coronary Intervention in the United States: Implications for Prehospital Triage of Patients With ST-Elevation Myocardial Infarction*. Circulation, 2006. **113**(9): p. 1189-1195.