ARIC Manuscript Proposal # 1264

PC Reviewed: _7_/10_/07	**Status: ___A_**	**Priority: _2__**
SC Reviewed: _____	**Status: _____**	**Priority: ____**

1.a. Full Title:

b. Abbreviated Title (Length 26 characters): **Stroke Survival and Weekend Admission**

2. Writing Group:
Emily O'Brien (lead), Wayne Rosamond, Eyal Shahar, Ana Felix

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

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3. Timeline: May 2007 – March 2008
Data preparation and analysis – 3 months
Manuscript Preparation – 6 months

4. Rationale:

Patients admitted to hospitals on weekends experience lower 30-day survival rates than similar patients who are admitted during the week. While this "weekend effect" has been well-documented for all-cause mortality as well as for several specific medical conditions such as myocardial infarction and preterm birth, few studies have examined stroke-specific 30-day survival rates with regard to day of admission.

Researchers in Canada recently documented a higher 7-day mortality rate in stroke victims admitted on weekends compared to those admitted on weekdays (*Stroke* Apr. 2007, 38). The authors identify the lack of data on stroke severity as a

potential limitation of the study. Furthermore, the study did not examine differences in event onset patterns in stroke patients by admission day.

This study aims to examine the role of day of admission on 30-day survival rates of all stroke patients in the ARIC cohort. We wish to expand on previous research by including several indicators that may affect 30-day survival in our analysis.

First, we wish to examine the patterns of event onset time compared to hospital arrival time with regard to survival rates. We also wish to evaluate the relationship between stroke type/ severity and survival rates.

5. Main Hypothesis/Study Questions:

- Do stroke patients admitted on weekends have lower 30-day survival rates compared to those admitted on weekdays?
- Do patterns stroke type and stroke signs and symptoms differ by day of admission?
- Do patterns of time from event onset to admission vary by day of admission?

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).

a) Study Design

The study will use data from the Stroke (STR) form used to abstract data from stroke events among cohort members. The design of this study is a prospective follow-up of stroke events occurring in the ARIC cohort. The primary relationship of interest is that of day of admission (dichotomized as weekend and weekday) and 30-day stroke mortality.

b) Inclusions

The study will include patients with a documented stroke diagnosis in the ARIC cohort.

c) Exclusions

Stroke patients without data for admission time/date or 30-day survival will be excluded.

d) Independent Variable

The primary independent variable of interest is day of admission, as derived from the admission date variable on the stroke form. Day of admission will be categorized dichotomously as weekend (admission time from midnight Friday

until midnight Sunday) or weekday (admission time from 12:01 am Monday until 11:59 pm Friday). These categorizations are consistent with those of other studies.

Secondary independent variables of interest include event onset time, stroke type, estimates of stroke severity, and stroke signs and symptoms.

e) Dependent Variable

The dependent variable of interest is 30-day survival. We plan to explore the 30-day survival in two ways. First, defined endpoints for survival will be established (7 days, 14 days, 30 days, 1 year) and survival rates in these intervals will be examined. Second, survival from admission will be analyzed as a continuous variable, and mean survival times will be examined for the cohort by day of admission.

f) Other Covariates

Covariates of interest include age, sex, race, education, and center.

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 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?

__x__N/A___ Yes ____ No

(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 __x__ 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"?

__x__N/A____ 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.cscc.unc.edu/ARIC/search.php

___x___ 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)? We know of only one manuscript proposal related to time of admission and mortality.

#966 Impact of Admission Time on Short-term Mortality and Length of Hospital Stay in Acute Coronary Syndrome patients. Brunson.

11. a. Is this manuscript proposal associated with any ARIC ancillary studies or use any ancillary study data? ____ Yes __x__ 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.cscc.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.