ARIC Manuscript Proposal #577B

PC Reviewed: __/__/00	Status: _____	Priority: _____
SC Reviewed: __/__/__	Status: _____	Priority: _____

1. a. Title: Lower heart rate variability is associated with CHD in diabetics
   b. Short Title: HRV and CVD

2. Writing Group Members: Duanping Liao, Mercedes Carnethon, Gregory W. Evans, Wayne E. Cascio, Gerardo Heiss

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3. Time: To be completed by 2000.

4. Rationale: During the past 10 years, assessment of heart rate variability (HRV) has emerged as one of the noninvasive methods of estimating the cardiac parasympathetic balance. As a result of the interaction between sympathetic and parasympathetic activity, beat-to-beat heart rate shows periodicities over time. These periodicities can be identified through spectral analysis to derive HRV indices. It is well accepted that cycles with a frequency of 0.04-0.15 Hz (low frequency power, LF) are under the influence of both the sympathetic and parasympathetic nervous system. Cycles with a frequency 0.15-0.40 Hz (high frequency power, HF) are under the influence of the parasympathetic system only and regarded as a marker of cardiac vagal function, and LF/HF ratio is considered as a measurement of the vagal-sympathetic balance.

   Several of our previous ARIC HRV manuscripts have been published. In these publications, we deomonstrated, in a sub sample of the ARIC cohort, significant associations between lower HRV and the incident of CHD, incident hypertension, diabetes, and multiple metabolic disorders, in addition to other demographic characteristics.

   As part of an ARIC ancillary study, we have processed ARIC Visit 1, two-minute resting, beat-to-beat heart rate data and derived conventional HRV indices for the ARIC cohort population according to a standard protocol.

   This writing group proposal will specifically investigate the prospective associations between HRV indices and the development of CHD in the ARIC cohort.

5. Main Study Objectives:
   i. To exam the distribution of HRV indices at the population level

ii. To investigate the relationship between HRV and the development of CHD over 9 years of follow up
iii. Do identify factors that modify the HRV and CHD association

6. Data (variables, source, inclusion/exclusion): The following variables are needed for this analysis: HRV data from Visit 1, Visit 1 official derived variables, and the events data through 1998.

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

b. If Yes, is the author aware that the file ICTER01 must be used to exclude persons with a value RES_OTH = "CVD Research" for non-CVD analysis, and for DNA analysis RES_DNA = "CVD Research" would be used? ___ Yes ____ No
(This file ICTDER01 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 _XX_ No

8.b. If yes, is the author aware that either DNA data distributed by the Coordinating Center must be used, or the file ICTDER01 muct be used to exclude those with value RES_DNA = "No use/storage DNA"? ___ Yes ____ No