B. Collection of Information Employing Statistical Methods

B.1. Respondent Universe and Sampling Methods

The respondent universe consists of the surviving men and women of the Framingham Study cohorts (Original, Offspring and Third Generation). The collection of information does not employ statistical sampling methods since this is an ongoing study of participants previously enrolled in The Framingham Heart Study. All participants have been examined before, and thus, the study deals with a stable and already approached sample.

The response rate for the Original Cohort=s previous examination (Exam 29) was 58 percent and for the Offspring Cohort's previous examination (Exam 8) was 75 percent (2950 expected by 12/31/07). The overall response rate, combining these two populations, was 74 percent. Over the 59 years of The Framingham Study in general, the response rate for the original cohort has been declining very slowly (less than two percent per cycle), primarily due to participants moving away from the Framingham area and not making return visits. In particular, the original cohort is now very elderly (84 years and older), and a considerable number of those who have moved away are not well enough to return to Framingham for visits. However, vital status is known on most participants, with less than 5 percent totally lost to follow-up.

B.2. Procedures for the Collection of Information

The 29th clinical visit of the Original Cohort and the 8th clinical visit of the Offspring Cohort will be completed by December 31, 2007 and both were previously approved by OMB (0925-0216). We are requesting approval to undertake and complete Exam 30 for the Original Cohort and the first year of Exam 31 for this cohort. We are also requesting approval to conduct Exam 2 of the Generation Three Cohort during 2008-2010, approximately 6 years after the date of the Exam 1. The participants were informed at their previous visit that a repeat visit would take place. The Framingham participants are contacted by telephone to schedule their appointment. A letter is

then sent to confirm their appointment. For the Original Cohort, a questionnaire asking the participant to list current medications, hospitalizations since last examination, and physician visits since last examination is included with this letter. For the Generation Three Cohort, a dietary questionnaire and the same questionnaire as the Original Cohort requesting the participant to list current medications, hospitalizations, emergency room visits, day surgery and physician=s visits are sent with the appointment confirmation letter, attached.

If the participants are unwilling or unable to participate in an examination, they are sent a Health Status Update Form to complete, attached. Participants who are unreachable by telephone are sent a postcard and subsequently the Health Update Form, attached.

Data collection for Original Cohort Exam 30 and 31 includes an interview and blood pressure determination and will be conducted by the cohort coordinator, physicians, and medical assistants for those participants who come to the clinic. At the clinic, each original cohort participant will go through the following examination procedures: reception, blood pressure measurement, anthropometric measurements, electrocardiogram, strength and ambulation measures, cognitive and physical activity questionnaire, and medical interview. Generation Three Exam 2 also includes reception, venipuncture for blood tests and DNA collection (in cases where not previously collected in adequate amounts), blood pressure measurement, electrocardiogram, medical history, physical exam, walk test, brachial artery reactivity, anthropometrics, pulmonary function test, ankle doppler blood pressure, tonometry for vascular stiffness, carotid ultrasound, computed tomography imaging of chest (subset), abdomen (subset), and thigh (subset), accelerometry measurements, cognitive and physical activity questionnaires. For those participants who are residing in the Framingham area and are not physically capable of coming to the clinic, an abbreviated data collection will occur at their place of residence and will be conducted by a medical assistant. The total response burden time

associated with the clinic interview/examination is 1.5 hours for the original cohort and 3 hours for the Generation Three Cohort. The total response burden associated with the at-home interview/examination is 1.2 hours, for members of the Original Cohort unable to travel. The Offspring Cohort will not be having a full examination during the coming three years; however, a subset of 400 per year will be asked to have a follow-up CT examination, a burden of about 1 hour per exam. A summary of the components of the original cohort Cycles 30 and 31 is found in Table B.2 -1. The components of the Generation Three Cycle 2 examination are listed in Table B.2 - 2.

Table B2-1 Components of Original Cohort Examination Cycles 30 and 31

Informed Consent or Waiver of Informed Consent

1) HIPPA-Release of Health Information for Research Purpose
2) FHS Follow-up by Proxy
3) Tracking Information Form (Salmon Sheet)

Anthropometrics

a. Height
b. Weight
c. Blood Pressure

1) Observed Physical Performance
   a. Handgrip
   b. Chair Stands
   c. Balance
   d. Timed Walk

Cognitive Function: The Mini-Mental Status Examination

1) Sociodemographics and Subjective Health
2) Activities of Daily Living Self Reported Performance:
   a. Rosow-Breslau
   b. NAGI Scale
   c. KATZ-Activities of Daily Living
   d. Compensatory Strategies for Walking in the Home
3) IADL'S (Instrumental Activities of Daily Living)
4) CES-D (Center for Epidemiologic Studies Depression Scale)
5) Berkman Social Network Questionnaire

6) Other
   a) Use of Nursing and Community Services
   b) Falls and Fractures
   c) Procedure Sheet & Exit Interview
   d) Walking in the Home

Medical History

1) Resting Blood Pressure (2)
2) Referral Tracking

Exit interview

Table B2-2 Components of the Generation Three Cohort Examination Cycle 2

Informed consent, tracking information
Phlebotomy, urine specimen
2 hour glucose tolerance test
Anthropometry (weight, height, waist/hip girth, sagittal abdominal diameter)
ECG
Physician administered medical history and physical exam
Ankle-brachial blood pressure
Carotid ultrasound
Tonometry
Pulmonary function testing (postbronchodilator spirometry)
Tech-administered questionnaires: Neuro-cognitive performance; exercise habits; CES-D
Self-administered questionnaires (Food frequency questionnaire, sociodemographics, SF-12)
Hand grip strength
Change clothing
Downtime (snack, wait between exam stations)
Explanation & placement of accelerometer & ambulatory blood pressure devices
Ambulatory blood pressure monitoring
Accelerometer to measure physical activity
CT scan: chest, abdomen, thigh (subset)
Informed consent, pregnancy testing (subset)
CT scan (subset)

The procedure for obtaining medical releases from a participant or the family member of a participant is accomplished by sending a letter to either the participant or to a family member. Accompanying this letter is a medical release form; once the release is obtained, a copy of it is enclosed with the appropriate records request form.

The recipient of the contract who is collecting and analyzing the data in conjunction with NHLBI is the Boston University Medical Center. The principal investigator is Philip A. Wolf, M.D.

B.3. Methods to Maximize Response Rates and Deal With Nonresponse

The response rate will be calculated using the number of individuals examined as the numerator and the number of surviving members of the cohorts are the denominator. The expected

response rate is 70 percent for the Original and Generation Three cohorts combined. This rate is estimated by extrapolating actual response rates from 1947 through Examination 29 of the Original Cohort and Examination 8 of the offspring.

When a participant arrives at the Framingham clinic for his or her examination, one of the first items on the agenda is the update of information to be used for maintaining future contact with the participant: his or her address and phone number, as well as similar information for participant's physician, employer, relative, and close friend. The patient coordinator works diligently to contact the participant for his or her next examination, using this information when needed. To date, less than 5 percent of the combined cohort has been lost to follow-up. The other participants who are considered nonrespondents are: 1) those who have refused examination for any reason, e.g. illness, distance, or disinterest and 2) those for whom the address and phone number are correct, but the participant does not respond to contact attempts made.

Other methods to promote response are the home or nursing home examinations for those who are not physically able to make it into the clinic and provision of taxi transportation for participants who are unable to get to the clinic otherwise.

B.4. Test of Procedures or Methods to be Undertaken

There are no new procedures or methods of data collections being undertaken during the period of data collections being herein requested. The procedures and methods of data collection

have all been refined previously to minimize burden and improve utility.

B.5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

Those consulted on statistical aspects:

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Boston University School of Medicine/Framingham Heart Study
508-935-3456

Ralph D'Agostino, PhD
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The contract and principal investigator are as follows:

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Principal Investigator

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Those analyzing the data:

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