Appendix 1. Study objective and design of ARIC, MESA and JHS

Atherosclerosis Risk in Communities Study (ARIC): ARIC is designed to investigate the causes of atherosclerosis and its clinical outcomes, and variation in cardiovascular risk factors, medical care, and disease by race, gender, location, and date. The Cohort Component of ARIC began in 1987, and each of the four ARIC field centers in the United States, including Washington County, MD; Forsyth County, NC; Jackson, MS; and Minneapolis, MN, randomly selected and recruited a cohort sample of approximately 4,000 individuals aged 45-64 from a defined population in their community. A total of 15,792 participants received an extensive examination, including medical, social, and demographic data. These participants were re-examined every three years with the first screen (baseline) occurring in 1987-89, the second in 1990-92, the third in 1993-95, the fourth exam in 1996-98, and the fifth exam in 2011-2013. (Available at https://sites.cscc.unc.edu/aric/description)

Multi-Ethnic Study of Atherosclerosis (MESA): The MESA is a study of the characteristics of subclinical cardiovascular disease (disease detected non-invasively before it has produced clinical signs and symptoms) and the risk factors that predict progression to clinically overt cardiovascular disease or progression of the subclinical disease. MESA initiated from 2000. MESA researchers study a diverse, population-based sample of 6,814 asymptomatic men and women aged 45-84 from six field centers across the United States, including Baltimore, MD (Johns Hopkins University); Chicago, IL (Northwestern University); Forsyth County, NC (Wake Forest University); Los Angeles County, CA (University of California at Los Angeles); Northern

Manhattan and Southern Bronx, NY (Columbia University); and St Paul, MN (University of Minnesota). Approximately 38 percent of the recruited participants were white, 28 percent African American, 22 percent Hispanic, and 12 percent Asian, predominantly of Chinese descent. The first examination, which began in July 2000 and were conducted over a 24-month period, was designed to be the most comprehensive. Six exams have been completed since 2000. Participants were contacted every 9 to 12 months throughout the study to assess clinical morbidity and mortality. The final 18 months of the study were dedicated to close out and data analysis and publication. (Available at https://www.mesa-nhlbi.org/aboutMESA.aspx)

Jackson Heart Study (JHS): The JHS is to investigate the causes of cardiovascular disease (CVD) in African Americans to learn how to best prevent this group of diseases in the future. The study was initiated from 2000. The JHS is a large, community-based, observational study whose participants were recruited from urban and rural areas of the three counties (Hinds, Madison and Rankin) that make up the Jackson Miss, metropolitan statistical area (MSA). Participants were enrolled from each of 4 recruitment pools: random, 17%; volunteer, 22%; currently enrolled in the ARIC Study, 30% and secondary family members, 31%. Recruitment was limited to non-institutionalized adult African Americans 35-84 years old, except in the family cohort where those 21 to 34 years of age were eligible. The final cohort of 5,306 participants includes 6.59% of all African American Jackson MSA residents aged 35-84 (N-76,426, US Census 2000). Major components of each exam include medical history, physical examination, blood/urine analytes and interview questions on areas such as: physical activity; stress, coping and

spirituality; racism and discrimination; socioeconomic position; and access to health care. At 12-month intervals after the baseline clinic visit (Exam 1), participants are contacted by telephone to: update information; confirm vital statistics; document interim medical events, hospitalizations, and functional status; and obtain additional sociocultural information. Questions about medical events, symptoms of cardiovascular disease and functional status are repeated annually. Ongoing cohort surveillance includes abstraction of medical records and death certificates for relevant International Classification of Diseases (ICD) codes and adjudication of nonfatal events and deaths. (Available at https://www.jacksonheartstudy.org/Research)