

FOREWORD: CELEBRATING THE FIRST TEN YEARS OF RESEARCH EXCELLENCE FROM THE JACKSON HEART STUDY

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Key Words: Heart Attack, Stroke, Health Disparities

Over the past 60 years, age-adjusted rates of death from heart attacks and strokes have declined by nearly 60% in the United States. While all populations have benefitted, minority populations – especially African Americans, Hispanics and Native Americans – have always had higher risk of heart attack and stroke than Caucasians. Disparities in benefits have continued to plague the African American population, especially in the South. Both genetic factors and environmental factors contribute to the risk of cardiovascular disease.

Health care is a cooperative venture. The groups who have benefitted most from research advances have assumed substantial responsibility for their own care, as well as having access to medical care. If the highest risk populations are to benefit from current research, participants must be fully engaged, work must be done in the communities in which they live, and the findings must be known to, and used by, the people living in those communities. The Jackson Heart Study began in 2000 to build upon existing knowledge to explore the unique factors of inheritance, environment, history and community affecting African Americans living in areas at highest risk of cardiovascular disease. The NHLBI is honored to support this study, which aims to tap into and strengthen the institutions of higher

learning in Mississippi, engage students, create an empowered community, and provide the resources to conduct important scientific work whose impact is potentially global. As the JHS evolves, we expect new opportunities to improve prevention and treatments, and a whole new generation of scientists whose careers will proceed in ways of which we have not even dreamed.

In the 20th century, cardiovascular disease was primarily a concern for wealthy countries. In the 21st century, cardiovascular disease is the leading cause of death and disability in low- and middle-income countries, and increasingly a scourge in the poorest nations. The increasing burden of heart disease and stroke in poorer nations reflects both greatly improved care, with decreasing rates of death early in life from preventable causes such as infectious diseases and complications of childbirth, and the impact of unhealthy trends in lifestyle – unhealthy diets, smoking, lack of physical activity, excessive consumption of alcohol and other drugs. The challenges that confront Jackson, Mississippi face the entire world. The legacy of the Jackson Heart Study will be not only the benefit it brings to the community in which its participants live and work, but to the global community with related inherited and environmental risks.

FOREWORD: APPLAUDING RESEARCH EFFORTS ADDRESSING DISPARITIES IN CARDIOVASCULAR DISEASE

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Key Words: Jackson Heart Study, Cardiovascular Disease, African Americans

I congratulate the editors and authors of these proceedings that describe the important findings to date of the Jackson Heart Study. This supplement is the culmination of the research efforts addressing the alarming disparities in cardiovascular disease (CVD) and associated risk factors among African Americans. It is evident from these published papers that the focus and mission of the Jackson Heart Study remains as relevant as when the study was initially funded jointly by the National Heart, Lung and Blood Institute and the National Institute (then Center) on Minority Health and Health Disparities. My comments here serve only as an introduction to the issue and lead us to the very rich and substantive articles featured in this supplement.

As the authors in this supplement emphasize, heart disease remains the leading cause of death for all racial and ethnic groups, and African Americans are more likely to die of CVD than Whites, when differences in age distributions are taken into account. The southeastern region carries a

particularly high burden of CVD, with the state of Mississippi being one of the most severely affected states. In 2006, age-adjusted CVD mortality in Mississippi was 30% higher than the national average (347 vs 261 per 100,000 persons).¹ The population of Mississippi has the highest proportion of African Americans (37%) of any state in the nation other than the District of Columbia,² and African Americans are disproportionately affected by CVD. In addition to the Jackson Heart Study findings published in this supplement, research confirms differences in cardiac care because African Americans are less likely to undergo invasive diagnostic tests,³ revascularization,⁴ and thrombolytic therapy⁵ for CVD. In this supplement, Yancy explores strategies to address inequitable care that includes adopting a quality-focused approach while integrating cultural awareness and cultural competency. In addition to a prevention focus in reducing the onset of CVD, he also emphasizes the need to promote public policies that lead to greater health awareness and healthier environments.

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The multiple levels at which policy and environmental changes affect cardiovascular health and chronic illness and the crucial role of advocacy at the community, national, and regional levels are well addressed in this supplement. Williams and Leavell outline critical research opportunities to advance the science base for understanding and effectively addressing racial disparities in CVD that includes a life course perspective and identifying how economic crises can shape CVD risk. The article by Kittles et al presents an overview of how the field of epigenomics could present opportunities for exploring the promise of personalized medicine and improved health outcomes among communities of color. There could be no better time than now to rally a truly multidisciplinary array of professionals to stem the tide of the rising burden of CVD and other chronic diseases among African Americans and other socially disadvantaged populations.

There is a sense of urgency that permeates this JHS 10th Anniversary supplement. The challenge of heart disease is enormous and unrelenting, but it is not insurmountable. The risk factors are known, and the skills to modify them are available. It is my hope that the articles in this issue further inspire researchers and practitioners alike who are deeply committed to become more determined to make authentic progress to move forward steadily and without losing ground. Such inspiration will enable vulnerable populations and

individuals avoid initial or recurrent CVD morbidity and live a longer, healthier, and more productive future.

I applaud the team of editors and authors for conceiving, writing, and publishing this timely supplement. The contents reflect the major shifts in recognition of the need to address chronic diseases and the critical need for team-based approaches. I highly recommend this supplement to all professionals interested in addressing cardiovascular disease prevention and eliminating disparities.

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FOREWORD: A TRIBUTE TO THE WORK OF JHS INVESTIGATORS, THE JACKSON COMMUNITY AND NIH SCIENTISTS

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Key Words: Jackson Heart Study, Cardiovascular Disease, African Americans

The National Institute of Biomedical Imaging and Bioengineering is happy to join our sister institutes, National Heart, Lung and Blood Institute (NHLBI) and National Institute on Minority Health and Health Disparities (NIMHD) at the National Institutes of Health (NIH), to participate in this important enterprise for the country. We look forward to the kind of information that is not only coming out, but will come out in the future from the Jackson Heart Study (JHS).

The purpose of the JHS – to explore reasons for cardiovascular health disparities and uncover new approaches to their elimination – parallels that of imaging science itself. Biomedical imaging has an expanding capability to observe, define, delineate and characterize the early pathophysiologic manifestations of heart and other diseases. This subclinical detection is critical to realizing the vision of transforming health care in this century into an endeavor focused on wellness and

identification of preclinical indicators of heart disease. With this approach, we will enable detection and intervention at a point in the natural history where maladies are more amenable to non-invasive therapeutic approaches.

The JHS imaging database of thousands of thoracic and abdominal multidetector CT scans, MRI assessment of cardiac and vascular structure and function – all obtained on a community-based sample of African Americans – represents one of the most unique and valuable resources in medical research. The creation of this internationally significant platform for scientific discovery is a tribute to the work of the JHS investigators, the community of Jackson and the mutually supportive work of the NIH scientists.

Imaging has a unique contribution to make to epidemiology and population research, and the NIBIB is particularly pleased to be exploring this frontier of discovery with the Jackson Heart Study.