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Toward Solutions for Minimizing Disparities in Stroke: National Institute of Neurological Disorders and Stroke Update

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Unequal burden of stroke

The higher burden that many diseases pose on racial and ethnic minorities in the United States represents one of the most significant public health problems facing modern society. Stroke is no exception, with dramatic disparities in incidence and outcome among racial and ethnic minorities, rural, and disadvantaged socioeconomic groups. NINDS efforts to address health disparities in stroke are guided by a report from the NINDS Strategic Planning Advisory Panel on Health Disparities Research, which recommended ways for the Institute to achieve maximal impact with its investments in health disparities research (see http://www.ninds.nih.gov/about_ninds/plans/NINDS_health_disparities_report.htm). As outlined below NINDS has implemented many of the recommendations within this report and continues to incorporate the expert panel's suggestions as new health disparities initiatives are developed and executed.

Stroke's impact is higher among racial and ethnic minority groups, with an increased overall incidence and especially at younger ages among blacks, Mexican Americans, and Native populations. Geographic differences also exist with a 20% higher mortality rate in the so-called 'stroke belt' of the southeastern U.S. and 40% higher in the 'stroke buckle'. The disparities are only expected to amplify. Minority groups will make up at least 40% of the population by 2030. A higher prevalence of risk factors such as high blood pressure, and reduced identification of a stroke combined with not seeking immediate medical attention after a stroke contribute to the disparities. However, the primary drivers of the disparities are complex and influenced by many integrated factors. Research to better understand and

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ultimately diminish the unequal burden of stroke experienced by these population groups is a high priority for the National Institute of Neurological Disorders and Stroke (NINDS).

Laying the foundation for action

NINDS supports population-based studies to uncover major factors contributing to the disparities observed in specific populations. The Reasons for Geographical and Racial Differences in Stroke (REGARDS) project is a prospective longitudinal cohort study of over 30,000 participants that has helped characterize disparities observed in the stroke belt and between blacks and whites in general. Results demonstrate a higher risk of stroke in those who sided in the stroke belt during adolescence, especially blacks. Blood pressure increases of 10mmHg led to disproportionately higher risk of stroke in blacks compared to whites. The good news is that even a small improvement in any one of the seven major cardiovascular health factors identified by the American Heart/Stroke Association “Life’s Simple 7” had a big impact on stroke risk. The Northern Manhattan Stroke (NOMAS) study, the Brain Attack Study in Corpus Christi (BASIC), and the Greater Cincinnati Northern Kentucky Stroke Study (GCNKSS) are also generating data on stroke risk and outcomes in more localized communities, which are helping us pinpoint cultural and local factors that may impart unique influences on stroke risk. Data from these studies will foster development of targeted interventions that take into account cultural context.

Seeking solutions

These and similar studies have generated an evidence-base from which to translate this knowledge into solutions for improving stroke prevention and care among high risk populations and communities. Several NINDS-studies are testing whether targeted behavior change strategies are effective at improving hospital arrival times for acute stroke treatment in African Americans or Hispanics, as well as preventing the occurrence of a first or second stroke through improved risk factor management. SWIFT (Stroke Warning Information and Faster Treatment) and PROTECT-DC (Preventing recurrence of thromboembolic events through coordinated Treatment in the District of Columbia) concentrate their messaging at the time of hospital discharge when persons are most receptive to health-related information. The approaches utilized in these studies are tailored to the community of interest. For example, the SHARE (Stroke Health and Risk Education) program is utilizing church to disseminate messages about risk factor improvement in Mexican Americans, recognizing the strong foundation of faith as a cornerstone of this community. In another study, kids are educated about stroke symptoms through hip hop music, with the hopes that they will then relay key messages to their parents.

Regional collaborations recently funded through the NINDS [Stroke Prevention/Intervention Research Programs \(SPIRP\) initiative](#) are also generating data and developing high-impact culturally tailored interventions to address specific problems. Projects within these programs develop and test culturally tailored interventions that utilize approaches such as community health workers and mobile health technology and also include observational studies and registries.

These studies demonstrate that, the time is truly ripe for applying what has been gleaned from the epidemiology studies to develop and test interventions to reduce stroke disparities. The NINDS will hold a workshop in fiscal year 2014 to engage and mobilize research experts and stakeholders and establish community-driven priorities and strategies for reducing the disparities in the burden of stroke.

Future outlook

Identifying and implementing effective solutions to combat disparities in stroke will require sustained and concerted effort from the research community, and NINDS-supported research is making important strides toward the ultimate goal of achieving health equity in stroke. However, much remains to be done and until a measurable impact is made on a large scale, this problem will remain a national priority.

Acknowledgments

More information NINDS health disparities research activities can be found on the NINDS Health Disparities Website (http://www.ninds.nih.gov/research/health_disparities/index.htm).