NIH Centers of Excellence

National Center on Minority Health and Health Disparities Centers of Excellence Program

Overview

NIH defines health disparities as differences in the incidence, prevalence, morbidity, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups.[38] These population groups are African Americans, American Indians, Alaska Natives, Asian Americans, Hispanic Americans, Native Hawaiians, and Pacific Islanders, subpopulations of all of these racial/ethnic groups, socioeconomically disadvantaged individuals, and medically underserved populations including individuals residing in rural and urban areas.

The National Center on Minority Health and Health Disparities (NCMHD) Centers of Excellence (COE) program is one of several programs that are central to NIH's scientific investment strategy for addressing and ultimately eliminating health disparities (see Table 4-4). That strategy encompasses:

- Conducting and supporting basic, clinical, social sciences, and behavioral research
- Promoting research infrastructure and training
- Fostering emerging programs
- Disseminating information
- Reaching out to racial and ethnic minority and other communities that experience health disparities

[38] For more information, see http://www.ncmhd.nih.gov/our_programs/strategic/pubs/VolumeI_031003EDrev.pdf, p. 7.

Why the NCMHD Centers of Excellence Were Established

The Minority Health and Health Disparities Research and Education Act of 2000 (Pub. L. No. 106-525) included provisions for the creation of NCMHD to conduct and support research, training, and dissemination of information with respect to minority health conditions and other populations with health disparities. Section 485F specifically mandated that NCMHD establish Centers of Excellence in research institutions for the purpose of conducting biomedical and behavioral health disparities research and training.

How the NCMHD Centers of Excellence Function within the NIH Framework

NCMHD established COEs to create a comprehensive platform in academic institutions to address health disparities in priority diseases and conditions through the fundamental strategies of research, training a diverse scientific workforce, and engagement of the community. NCMHD also designed the COE program to support Department of Health and Human Services initiatives for eliminating health disparities.

Since 2002, NCMHD has established Centers of Excellence (COEs) in 32 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. NCMHD supported 49 COEs in FY 2008 and 51 COEs in FY 2009.

Since 2002, NCMHD has established COEs in 32 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. Initially, the program used three different funding mechanisms for Resource-Related Centers (R-24), Exploratory Centers (P20), and Comprehensive Centers (P60). The use of these different funding mechanisms allowed NCMHD to support institutions with varying levels in biomedical research expertise and capacity. This approach also enabled NCMHD to leverage resources to support the capabilities of the Nation's geographically and culturally diverse institutions that have longstanding partnerships with local and regional health disparity organizations and communities. The Resource-Related Centers mechanism, which NCMHD no longer uses, enabled institutions with emerging or modest research infrastructures to begin building research capacity to address health disparities. Several institutions that received these R24 awards have since successfully established an NCMHD COE using the Exploratory Centers mechanism.

Similar to other COEs that NIH supports through these mechanisms, a typical project period is 4 to 5 years. All NCMHD COEs (P20 and P60) established since FY 2005 have had project periods of 5 years.

Currently, the types of institutions funded directly by the NCMHD COE program or through partnerships with NCMHD COEs are broad. These institutions include research-intensive institutions, medical schools, historically black colleges and universities, Hispanic-serving institutions, tribal colleges/universities, and liberal arts colleges. NCMHD supported 49 COEs in FY 2008 and 51 COEs in FY 2009.

As a hub for health disparities research, NCMHD COEs provide opportunities for the development of novel partnerships between different types of institutions, such as community-based organizations or foundations, to partner in the conduct of rigorous basic scientific research, human subjects and vertebrate animal research, and applied population and community-based research.

One example of an NCMHD COE is the partnership funded in FY 2009 that established the University of South Florida and Moffitt Transdisciplinary Center to Address Cancer Health Disparities. Florida has the second highest estimated number of new cancer cases and cancer deaths. This COE seeks to reduce racial and ethnic cancer disparities through research, education, training, and community engagement. Significantly, this partnership will engage three different communities by conducting community cancer discussion groups, health and science fairs, and workshops, and by using social marketing approaches to disseminate information through radio talk shows, an interactive website, a Facebook page, and podcasts. The Florida program also provides opportunities for increasing the pool of investigators from populations that experience health disparities through research training, faculty development, programs and activities to interest K-12 students in science, health information dissemination, and approaches to increasing the participation of these populations in clinical trials.

Description of Disease or Condition

The research and other COE activities that NCMHD supports are not limited to or focused on a single disease, illness, or condition. As described in various solicitations published in the *NIH Guide for Grants and Contracts*, the NCMHD COEs conduct research on health disparities associated with the following priority diseases and conditions: cardiovascular disease, stroke, cancer, diabetes, HIV/AIDS, infant mortality, mental health, and obesity. The NCMHD COE program also supports research on lung disease, liver disease, psoriasis, scleroderma, and glomerular (kidney) injury; all of these diseases and conditions

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Burden of Illness

The diversity of the contemporary American population is one of the Nation's greatest assets. However, the richness of this diversity is diminished by the disproportionate burden of disease and illness and the reduced access to quality health care that racial and ethnic minority populations and the rural and urban poor experience. Compelling evidence of the disparate health status of America's racial and ethnic minority and economically disadvantaged populations includes their shorter life expectancies and higher rates of cancer, birth defects, infant mortality, asthma, diabetes, obesity, cardiovascular disease, and stroke. Racial and ethnic minorities and the medically underserved also suffer a disproportionate burden of morbidity and mortality associated with HIV/AIDS; autoimmune diseases, such as lupus and scleroderma; oral health; sexually transmitted diseases; mental disorders; violence; and substance abuse.

Recent statistics on disparities for select diseases and conditions are provided in the following tables.

Ischemic Stroke Death Rates[49]	
Race/Ethnicity	***Rate (per 100,000)***
White	73.7
African American	95.8
American Indian/Alaska Native	48.6
Asian/Pacific Islander	45.8
Hispanic	39.7

Intracerebral Stroke Death Rates[40]	
Race/Ethnicity	***Rate (per 100,000)***
White	13.2
African American	22.5
Asian/Pacific Islander	20.1
American Indian/Alaska Native	10.4
Hispanic	12.0

Breast Cancer Death Rates by Race/Ethnicity, 2002—2006[41]	
Race/Ethnicity	***Rate (per 100,000 Women)***
All Races	24.5
White	23.9
African American	33.0
Asian/Pacific Islander	12.5
American Indian/Alaska Native	17.6
Hispanic	15.5

Prostate Cancer Rates by Race/Ethnicity, 2002—2006[42]	
Race/Ethnicity	***Rate (per 100,000 Men)***
All Races	25.6
White	23.6
African American	56.3
Asian/Pacific Islander	10.6
American Indian/Alaska Native	20.0
Hispanic	19.6

Obesity in Men, 2003—2006[43]	
Group	***Percent***
All	33.1
White	33.0
African American	36.3
Mexican	30.4

Obesity in Women, 2003—2006[44]	
Group	***Percent***
All	35.2

White	32.5
African American	54.3
Mexican	42.6

[39] Ayala C, et al. *Am J Epidemiol* 2001;154:1057-63. PMID: 11724723.
[40] Ibid.
[41] For more information, see http://seer.cancer.gov/statfacts/html/breast.html?statfacts_page=breast.html&x=16&y=16.
[42] For more information, see http://seer.cancer.gov/statfacts/html/prost.html?statfacts_page=prost.html&x=18&y=17.
[43] For more information, see Table 75 at http://www.cdc.gov/nchs/data/hus/hus08.pdf.
[44] Ibid.

Scope of NIH Activities: Research and Programmatic

The scope of activities at NCMHD COEs are guided by the Research, Infrastructure, and Outreach (RIO) framework used in developing the NIH Health Disparities Strategic Plan. Implementing the RIO framework within the NCMHD COE program provides a flexible structure that allows considerable freedom in designing and implementing the multi- and transdisciplinary strategies, studies, interventions, and activities required for reducing and ultimately eliminating health disparities.

The NCMHD COE program requires all COEs to establish mandatory cores:

- An Administrative Core for carrying out and overseeing administrative matters and functions
- A Research Core for conducting, coordinating, generating, and advancing research on health disparities
- A Research Training and Education Core for conducting and advancing research training
- A Community Engagement Core for engaging communities and others as partners in eliminating health disparities through community participation in research and the joint development and dissemination of effective health information messages and research findings

NIH Funding for FY 2008 and FY 2009

Actual NIH funding for the NCMHD COE program was $56.8 million in FY 2008, and $72.5 million in FY 2009,[45] including $5.6 million from ARRA funds.

[45]The funding increase from FY 2008 to FY 2009 is due to the addition of seven new NCMHD COEs and one competing renewal.

FY 2008 and FY 2009 Progress Report

Programmatic Activities and Outcomes

Significant programmatic accomplishments include establishing seven new COEs and one competing renewal (see Table 4-4). The number of active NCMHD COEs was 49 in FY 2008 and 51 in FY 2009.

The COE at the University of Southern California received one of three telehealth/telemedicine supplements to develop technology and tools for use with mobile devices to prevent pediatric obesity among Hispanic and African American youth in Los Angeles.

Administrative supplements were made in FY 2008 to NCMHD COEs to support the following:

- The use of telehealth and telemedicine. NCMHD considers the use of telehealth and telemedicine to be innovative strategies to reduce and eliminate health disparities in hard-to-reach rural, Alaska Native, American Indian, Native Hawaiian, Pacific Islander, African American, Hispanic American, or Asian American populations.
- Regional seminar series on health disparities to share and disseminate minority health and health disparities research findings and increase the participation of health professionals and community stakeholders in the effort to eliminate health disparities.
- The development and implementation of science education programs for grades K–12 to promote careers in biomedical, behavioral, and biosocial research for populations that are underrepresented in the health science fields.

Research Activities and Outcomes

Funding for the NCMHD COEs has resulted in several FY 2008 and FY 2009 research accomplishments. The centers conduct research on minority health and the biologic and non-biologic factors contributing to health disparities. As shown by the following examples, NCMHD researchers are exploring the role of social and cultural factors in the prevalence of priority diseases and conditions.

The Carolina-Shaw Partnership for the Elimination of Health Disparities completed a pilot study to qualitatively explore cultural attitudes and perceptions toward body image, food, and physical activity among a sample of overweight African American girls.[46] The investigators found that weight and body size preferences were determined primarily by the individual and her immediate social circle and were less influenced by opinions of those outside of the social circle. The findings also showed that the girls' food choices depended on texture, taste, appearance, and context more than nutritional value; engagement in recreational physical activity was influenced by time constraints from school and extracurricular activities and by neighborhood safety; participation in structured exercise was limited because of the cost and time required to maintain personal aesthetics (hair and nails); and the girls did not perceive celebrities as role models for diet and physical activity habits.

The University of Oklahoma Center for American Indian Diabetes Health Disparities seeks to reduce and

eventually eliminate the excess mortality, morbidity, and loss of quality of life and culture due to diabetes.

The University of Oklahoma Center for American Indian Diabetes Health Disparities seeks to reduce and eventually eliminate the excess mortality, morbidity, and quality of life and culture lost due to diabetes. The center also focuses on maternal health, infant mortality, and obesity. Current studies include Early Markers of Pre-eclampsia in American Indians with Type 2 Diabetes, Insulin Resistance and Glucocorticoid Treatment of Inflammatory Diseases of High Prevalence among American Indians, and American Indian Diabetes Beliefs and Practices: Maternal Care, Infant Mortality, and Adherence. In addition, the center is providing instruction and support for conducting practical research to address diabetes within their health care settings to a cadre of nurses from American Indian clinics and hospitals in Oklahoma and Kansas. The Community Engagement/Outreach Core supports the Native Youth Preventing Diabetes summer camp that is open to all Oklahoma American Indians ages 8 to 12 years.

The Uniform Services University Center for Health Disparities Research, a partnership between the Uniform Services University of the Health Sciences and the University of Maryland, Eastern Shore, is conducting research on long-term behavioral modification to reduce and prevent obesity among African American women. The center is using the results of this research to build a program on cardiovascular disease and metabolic syndrome, which disproportionately affect minority populations. The center's research addresses issues related to lifestyle and health, health care access, health status, and health disparities. The Healthy Lifestyles among African American Women through Weight Loss and Exercise project is exploring ways for women in faith-based communities to sustain weight reduction and maintenance efforts using different exercise regimes and behavioral therapies. The project's long-term goal is to decrease the risk and incidence of obesity and associated conditions.

The Uniform Services University Center for Health Disparities Research is using the results of its research on long-term behavioral modification to reduce and prevent obesity to build a program on cardiovascular disease and metabolic syndrome, which disproportionately affect minority populations.

Researchers at the Center for Research on Minority Health of the University of Texas M.D. Anderson Cancer Center and Prairie View A&M University are defining the biological relevance of susceptibility gene polymorphisms (different forms of these genes) as risk factors for cancer and other adverse health effects. Specifically, the researchers are developing and validating a food frequency questionnaire to assess the folate and vitamin B12 intake of Mexican American children in Texas. The study's short-term goal is to estimate the prevalence of the social, environmental, and genetic factors associated with stomach cancer risk among Mexican American children; the long-term goal is to prevent stomach cancer in Mexican Americans. The findings from this study could reduce stomach cancer health disparities in the United States and around the world.

To address the disproportionate burden and impact of HIV/AIDS on women of color, the University of Miami COE is evaluating the efficacy of an HIV risk reduction intervention delivered by Hispanic women. The intervention is culturally tailored to meet the needs of Hispanic women, who are disproportionally affected by HIV/AIDS. The intervention is designed to increase HIV prevention behaviors in inner-city Hispanic women. The study also is exploring the role of acculturation, family, stress, and family functioning as risk factors, protective factors, or both in the prevention of HIV/AIDS among Hispanic women.[47]

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[46] Boyington JE, et al. *Prev Chronic Dis* 2008;5(2):A36. PMID: 18341772. PMCID: PMC2396970.
[47] For more information, see http://elcentro.sonhs.miami.edu/research/full_research_studies.html.

Recommendations for Improving the Effectiveness, Efficiency, and Outcomes of the NCMHD COEs

Since their inception in year 2002, NCMHD COEs made progress toward the elimination of health disparities. However, much more needs to be done in designing and taking the critical steps needed to translate research findings to meaningful actions that will improve the quality of life experienced by those overburdened by health disparities. Efforts need to be more targeted toward interventions that work. Specifically, guidance will be provided to COEs to:

- Establish partnerships with other NIH-funded centers and programs, other Federal agencies, and others committed to eliminating health disparities as a way to maximize resources.
- Increase the diversity of the scientific workforce, especially the number of women and biomedical and behavioral scientists from racial/ethnic and other health disparity populations. Focused efforts are especially needed to increase the number of women scientists and researchers who: a) remain in the sciences beyond the terminal research or professional degree and beyond the postdoctoral or residency stage and who pursue basic or clinical research as a career; and b) serve in leadership and decision-making roles as members of scientific review panels or members of national advisory councils.
- Create opportunities for biomedical and behavioral scientists to work with social scientists, health services researchers, and other public health researchers to address more effectively the transdisciplinary challenges in health disparities elimination and prevention research.
- Enhance the Nation's research capacity to conduct health disparities research by expanding the research and training opportunities available.

NCMHD and its COEs cannot act alone—NCMHD actively seeks new partners and also encourages each NCMHD COE to establish partnerships with other NIH-funded centers and programs, other Federal agencies, and others committed to eliminating health disparities.

Evaluation Plans

NCMHD program staff evaluate the COEs' annual progress by examining each COE's published peer-reviewed articles, books, and book chapters; conferences sponsored and presentations given on health disparities; community engagement activities, such as health fairs and other forums for disseminating health-promotion materials; community participation in research and clinical trials (if applicable); training of junior faculty from health disparity populations, postdoctoral fellows, and graduate and undergraduate students; and K–12 educational efforts. This review ascertains the COE's progress in meeting the aims and objectives of the grant and may identify areas of concern that need to be addressed.

Future Directions

The NCMHD COE program will continue to intensify research efforts to reduce and eliminate health disparities, with an emphasis on sustaining current partnerships and establishing new ones. NCMHD expects that its COEs will discover new biomedical and behavioral knowledge for improving minority health and eliminating health disparities within and across the priority areas of cardiovascular disease, stroke, cancer, diabetes, HIV/AIDS, infant mortality, mental health, and obesity, as well as in lung and liver diseases, psoriasis, scleroderma, and glomerular injury. An important emphasis area is reducing co-morbidities in populations that experience health disparities.

The NIH Science of Eliminating Health Disparities Summit, held in December 2008, provided significant recommendations for future research themes for COEs. These include, but are not limited to:

- Support for infrastructure that involves community leaders in the design and conduct of clinical trials. Since infrastructures can cover a wide range of diseases, investigators should take advantage of already established systems to maximize resources.
- Support studies using multi-level and/or ecological approaches that take into consideration the interactions between variables that represent individual, family, community, and neighborhood characteristics.
- Support research on the broad social and political processes that lead to or ameliorate social disparities in health. In the same way as the genome has been mapped, the fundamental social determinants of health must be mapped in order to understand the social and political processes that must inform the development of effective interventions.
- Promote greater interdisciplinary training opportunities to evolve a new scientific approach that includes disseminating information, communicating, and capacity-building.

The COEs also will continue to develop new technologies for measuring the interactions between these various factors and new paradigms. The resulting new knowledge and technologies will lead to the development of bio-psychosocial and other interventions and strategies for improving minority health and eliminating health disparities.

Conducting population-based studies for reducing the incidence and prevalence of health disparities among individuals living in different geographical regions of the United States—especially the Mississippi Delta, Appalachia, the U.S.-Mexico border region, and tribal communities—will continue to be important.

The success of these and future research efforts by the NCMHD COEs will continue to depend, in part, on the development of improved methodological tools, measures, validated instruments, and novel research designs for disentangling the contribution to health disparities of biologic, behavioral, and social factors, and health policies and practices. Conducting population-based studies for reducing the incidence and prevalence of health disparities among individuals living in different geographical regions of the United States—especially the Mississippi Delta, Appalachia, the U.S.-Mexico border region, and tribal communities—will continue to be important. NCMHD will continue to support studies to eliminate or decrease the impact of factors, including natural disasters, that contribute to the excess risks, morbidity, and mortality associated with living in these regions.

Table 4-4. NCMHD Centers of Excellence Active in FY 2008 and FY 2009

Institution and Location	Year Established
Charles R. Drew University of Medicine & Science, Los Angeles, CA	2002
Howard University, Washington, DC	2002
Johns Hopkins University, Baltimore, MD	2002
Morehouse School of Medicine, Atlanta, GA*	2002
Mount Sinai School of Medicine of NYU, New York, NY	2002
North Carolina Central University, Durham, NC	2002
San Diego State University, San Diego, CA	2002
Tuskegee University, Tuskegee, AL*	2002
University of California, San Diego, CA	2002
University of Hawaii, Manoa, HI	2002
University of North Carolina, Chapel Hill, NC	2002
University of Pennsylvania, Philadelphia, PA*	2002
University of Pittsburgh, Pittsburgh, PA	2002
Columbia University Health Sciences, New York, NY	2003
Meharry Medical College, Nashville, TN	2003

New York University School of Medicine, New York, NY	2003
Texas A&M University System, College Station, TX	2003
Uniformed Services University of the Health Sciences, Bethesda, MD	2003
University of Alabama, Birmingham, AL	2003
University of Arizona, Tucson, AZ*	2003
University of California, Davis, CA	2003
University of Colorado Denver and Health Sciences Center, Aurora, CO	2003
University of Maryland, Baltimore, MD*	2003
University of Oklahoma Health Sciences Center, Oklahoma City, OK	2003
University of Puerto Rico Medical Sciences, San Juan, PR	2003
University of Texas Health Sciences Center, Houston, TX	2003
University of Texas M.D. Anderson Cancer Center, Houston, TX	2003
Yeshiva University, New York, NY	2003
University of South Alabama, Mobile, AL	2004
University of the Virgin Islands, St. Thomas, VI	2004
Loma Linda University, Loma Linda, CA	2005
University of Connecticut, Storrs, CT	2005
University of North Texas Health Sciences Center, Fort Worth, TX	2005
University of South Carolina, Columbia, SC	2005
University of South Dakota, Vermillion, SD	2005

Arizona State University, Tempe, AZ	2007
Case Western Reserve University, Cleveland, OH	2007
Clark Atlanta University, Atlanta, GA	2007
Florida International University, Miami, FL	2007
Montana State University, Bozeman, MT	2007
University of Arkansas Medical Sciences, Little Rock, AR	2007
University of Massachusetts, Boston, MA	2007
University of Miami, Coral Gables, FL	2007
University of Michigan, Ann Arbor, MI	2007
University of North Carolina, Greensboro, NC	2007
University of Southern California, Los Angeles, CA	2007
University of Texas, El Paso, TX	2007
Virginia Commonwealth University, Richmond, VA	2007
Winston-Salem State University, Winston-Salem, NC	2007
Medical College of Georgia, Augusta, GA	2009
State University of Albany, Albany, NY	2009
University of Illinois, Chicago, IL	2009
University of Minnesota, Twin Cities, MN	2009
University of South Florida, Tampa, FL	2009
University of Wisconsin, Madison, WI	2009

Weill Medical College, Ithaca, NY	2009

*Center was active in FY 2008 but not FY 2009.