

## **Health Research Non-Formula Grants - State Fiscal Year 2002-03**

The Pennsylvania Department of Health selected six collaborative research projects for funding in response to the Request for Application (RFA) # 02-07-01 for Cardiovascular Disease and/or Mental Disorders Research Projects. All research projects addressed one of the following the research priorities established by the Department in conjunction with the Health Research Advisory Committee:

- Regional/population differences in the incidence of cardiovascular disease and in the efficacy of prevention and treatment strategies. Why do these differences exist? What are the barriers to eliminating these differences? Apply and evaluate an intervention that, if successful, will lead to the cost effective elimination or reduction of these disparities and improvement in outcomes.
- Regional/population differences in the incidence of schizophrenia, bipolar disorder, major depressive disorders, and childhood autism spectrum disorders, and in the efficacy of prevention and treatment strategies. Why do these differences exist? What are the barriers to eliminating these differences? Apply and evaluate an intervention that, if successful, will lead to the cost effective elimination or reduction of these disparities and improvement in outcomes.

The following list of grant awards provides the lead and collaborating institutions, title of the research project, amount of the grant award, grant award period, contact person, and a description of the project.

### **Cardiovascular Research Projects**

- Temple University, Geisinger Medical Center, Bryn Mawr College and Insight Telehealth Systems, Inc. - *Preventing Heart Disease in Underserved Patients*, \$4,003,359 for a 48-month project (March 1, 2003 – February 28, 2007)

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Cardiovascular disease (CVD) causes the greatest number of deaths in the United States where it accounts for nearly one million deaths annually. Hypertension, hyperlipidemia, and diabetes are known risk factors, which can be modified to lower the risk of CVD. Inner city and rural underserved populations develop early glucose intolerance, hyperlipidemia, and hypertension and from these abnormalities have a higher than average death rate from CVD. In underserved populations, lack of surveillance and treatment allows these risks to persist until an actual cardiovascular event occurs (heart attack, new angina or sudden death, stroke).

Thus, despite our understanding of the importance of reducing these risk factors and the availability of well-established treatments, the clinical application of these guidelines has been disappointing. Effective risk management requires a chain of events to occur. Potential weaknesses in this chain include: (1) inadequate formulation of a risk reduction plan; (2) ineffective communication of treatment plans to the patient; (3) poor patient compliance; and (4) lack of feedback to the physician on implementation status.

For the underserved populations, new approaches or technologies are needed to address the high prevalence and suboptimal control of CVD risk factors. This study will use an established Telemedicine System to accomplish a significant decrease in CVD risk factors in underserved inner city and rural populations. The Telemedicine System can address the barriers to chronic disease management because (1) risk reduction plans (NHLBI ATP III guidelines) are built into the system; (2) every patient has a personalized plan that is communicated to him/her, (3) patient-physician communication is enhanced; (4) patient compliance is documented; and (5) feedback is provided to the physician on implementation of risk reduction status. A Telemedicine System approach can accomplish these goals in a cost effective manner.

The goal of this project is to test a realistic system that can address the higher prevalence and discrepancies in treatment in underserved populations. It is hypothesized that frequent surveillance, motivational communication and specific medical therapy managed using a Telemedicine System will reduce CVD risk status and reduce the progression toward epidemic CVD in patients.

- University of Pennsylvania, Cheyney University of Pennsylvania, Dickinson College, Health Promotion Council of Southeastern Pennsylvania, and Pinnacle Health Hospitals - *Collaboration in Hypertension to Reduce Disparities*, \$4,798,052 for a 48 month project (March 1, 2003 – February 28, 2007)

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The overall objectives of the proposed research project are to: (1) develop and test a multidimensional intervention aimed at eliminating the substantial cardiovascular disparity caused by poorly controlled blood pressure among African Americans and lower socioeconomic status (SES) adults; (2) foster collaborative, cardiovascular health disparities research among investigators from a range of disciplines and institutions in order to reduce this disparity; and (3) enhance opportunities for research training and mentoring for junior investigators who can sustain further research in cardiovascular health disparities.

The research project includes two phases. Phase I will be devoted to developing an individually tailored, computer-based behavioral intervention that has a theoretical and empirical basis, that can be easily disseminated at low cost, and that will provide insight to further current theories of health behavior. Phase 2 will be a randomized, controlled, factorial design trial conducted at two sites with large numbers of African American and low SES patients to test the effectiveness and cost-effectiveness of two interventions: elimination of patient copayments for hypertension medications and the individually tailored, computer-based behavioral intervention developed in Phase 1. Throughout the project, all collaborating institutions will participate in community-based research and formal research development activities among students and faculty.

A critical component of the research project will be its ability to be expanded beyond the clinical trial and the four years of funding. This will be

accomplished by a unique collaborative effort among multiple institutions that will lead to: (1) the acquisition of knowledge about barriers to blood pressure control outside of the clinical trial settings; (2) the development of interventions that can be implemented on a wide-scale basis and in a cost-effective manner after the study is complete; (3) the education, training, and nurturing of future health disparities investigators; and (4) the development of further health disparities research projects.

The research project includes several key elements to ensure that all goals can be accomplished: (1) researchers with the expertise required to conduct a rigorous, valid scientific experiment; (2) a unique, multidisciplinary collaboration among multiple partners; (3) academicians with experience in mentoring, educating, and training young investigators; and (4) researchers who can ensure that the results of the project can extend beyond the project itself.

Thus, the research project will aim to reduce cardiovascular health disparities both during the project and after. The ultimate goal is to reduce the considerable disparity in cardiovascular disease among African Americans and lower SES adults due to uncontrolled hypertension.

- University of Pittsburgh, Pittsburgh Theological Seminary and Urban League of Pittsburgh - *Novel Strategies for Reducing Heart Disease Risk Disparities*, \$4,353,341 for a 48-month project (March 1, 2003 – February 28, 2007)

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In Pennsylvania, well-established disparities exist in the prevalence and outcome of cardiovascular disease related to race, socioeconomic status, and geographic location. Despite increased national and local awareness of these disparities, minorities and the socioeconomically disadvantaged remain at high risk for cardiovascular disease. Previous work both confirms these disparities in Western Pennsylvania and suggests that they may be related, in part, to population differences in the prevalence of nontraditional cardiovascular risk factors including psychosocial factors, the dysmetabolic syndrome, inflammation and mild renal insufficiency. The proposed cohort study of 2,000 Pennsylvanians, with a nested intervention study of 800 participants, will study the hypotheses that racial, socioeconomic, and geographic disparities in cardiovascular risk can be significantly reduced or eliminated by (1) a novel approach to cardiovascular risk stratification that considers population differences in traditional and nontraditional risk factors and subclinical atherosclerosis, and (2) a community-based intervention program that incorporates culturally-sensitive medical care with a multidisciplinary education program led by a behavioral interventionist, a nutritionist, an exercise physiologist, and a lay health advisor. To successfully implement this program in underserved communities, a partnership was formed between the University of Pittsburgh School of Medicine, Graduate School of Public Health, and Center for Minority Health, and the Pittsburgh Theological Seminary and Urban League of Pittsburgh. This partnership combines the established expertise of University of Pittsburgh epidemiologists with the Center for Minority Health and community organizations that have extensive experience in effective education of populations in traditionally

underserved, high-risk communities. This project will also train junior investigators by providing coursework as part of two federally-funded training programs and mentored research experiences that will enable them to develop into independent culturally-sensitive investigators. This project will serve as the foundation for a "center of excellence" in cardiovascular risk assessment and prevention in high-risk and traditionally underserved populations in Western Pennsylvania.

### **Mental Disorders Research Projects**

- Temple University, WES Corporation, Community Organization for Mental Health and Retardation (COMHAR), and Treatment Research Institute – *Mental Illness and Substance Use Disorders: Behavioral Treatments*, \$1,322,836 for a 48-month period (March 1, 2003 – February 28, 2007)

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Mentally ill minority patients, especially those stigmatized by the added diagnosis of substance use disorders, are less likely to receive state-of-the-science mental health or substance use treatments. Developing effective treatments for these populations will reduce in the long run the disparity in care for these patients. The overarching goals are (1) to increase understanding of the biological, psychological and social dimensions of co-occurring mental illness and drug abuse disorders and (2) to translate state-of-the-science treatment principles and procedures into effective treatment for minority patients with these disorders. The specific aim of the project is to develop and evaluate a Multi-Systemic Behavioral Treatment (MSBT) package. The treatment package combines behavioral interventions which have been found effective for mentally ill or drug abusing patients but not in patients who are both mentally ill and drug abusing. The clinical goals of MSBT are to engage, to motivate, and to maintain behavioral change in mentally ill patients who abuse drugs.

Whether MSBT more effectively reduces substance abuse, improves social functioning and reduces the severity of the symptoms of mental illness will be determined by comparing MSBT to Standard Treatment (ST). Patients will be evaluated immediately after treatment and 30 and 180 days post-treatment. The intensive follow-up effort will permit assessment of a broad range of social, community and geographic factors that may effect treatment outcome. This follow-up effort uses a unique geographic information system to understand the relation between the distribution of patients and families and mental health and social resources in the community. The project will (1) develop a treatment MSBT, for patients with both mental illness and drug abuse, (2) evaluate the effectiveness of MSBT and (3) determine the impact of social, economic and community factors on clinical outcome. If effective, MSBT will improve understanding of co-occurring mental health and substance abuse disorders and establish a clinically relevant, scientifically productive and fundable line of research.

- University of Pennsylvania, Lincoln University, Community Behavioral Health, The Consortium, Community Council, Hall Mercer Community Mental Health Center of

Pennsylvania Hospital, and Horizon House – *Reducing Disparity for Severely Mentally Ill African Americans*, \$3,589,915 for a 48-month project (March 1, 2003 – February 28, 2007)

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A consortium of researchers and services providers with the support of the City Behavioral Health System (BHS) proposes to address documented racial disparities in the care of patients with schizophrenia and major depression in Philadelphia. The vast majority of patients with serious mental illness are cared for in the public mental health system. Despite the great advances in state-of-the-art care and excellent treatment guidelines for such patients there still exist documented racial disparities in the quality of care and engagement of African American patients. This research project will test an intervention to improve the quality of care by training and engaging psychiatrists and patients in a process to follow these treatment guidelines. Partners include the City of Philadelphia Behavioral Health System, Lincoln University, and four community mental health provider agencies.

The multilevel intervention is designed to reduce health disparities in treatment and improve the quality of care of patients with serious mental illness by engaging psychiatrists and patients in the Philadelphia BHS to implement evidence-based medication treatment guidelines in psychiatry. The intervention will involve academic detailing for psychiatrists and a skills training program for patients. State-of-the-art technology will be provided to psychiatrists to record medication practices and feedback will be given using automated database reporting mechanisms.

- University of Pittsburgh, Thomas Jefferson University, Clearfield-Jefferson Community Mental Health Center, and Lincoln University - *Bipolar Disorder Center for Pennsylvanians*, \$5,000,000 for a 48-month project (March 1, 2003 – February 28, 2007)

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The Bipolar Disorder Center for Pennsylvanians aims to reduce significant health disparities in treatment outcome among Pennsylvanians with bipolar disorder. Bipolar disorder is one of the world's 10 most disabling conditions, robbing sufferers of years of healthy functioning. The study will evaluate an intervention to increase the probability of accurate diagnosis, increase the adequacy of treatment, increase retention in treatment, and improve overall outcomes for adolescent and elderly individuals with bipolar disorder. In addition, since African-Americans with bipolar disorder suffer from a significant health disparity in the identification and treatment of bipolar disorder, the study will also seek to identify and include this group to a significant degree in the intervention. The overarching goal is to improve the

quality of health care and outcomes and reduce health disparities for Pennsylvanians suffering from bipolar disorder. To accomplish this goal, the Commonwealth Bipolar Treatment Registry will be established in Pittsburgh, Philadelphia, and Clearfield-Jefferson counties. The Registry will enroll approximately 600 individuals, of whom a minimum of 200 will be African-American, 100 over the age of 65, and approximately 225 under the age of 18. Over half (60%) will be women. Participants in the Registry will have access to state-of-the-art diagnosis and treatment for bipolar disorder. The Commonwealth Bipolar Treatment Registry program will also help patients maintain their treatment, and will provide educational and training opportunities for minority clinicians and other health care providers. An enriched subsample of 450 Registry participants who experience acute episodes of mania, depression, or mixed states or who show prognostic signs of poor outcome such as high levels of interepisode symptoms and nonadherence will be randomly assigned to Guideline Intervention or Enhanced Intervention. It is hypothesized that Enhanced Intervention will be significantly more effective in reducing health disparities in this subsample and will lead to a series of other positive outcomes. The Commonwealth Bipolar Treatment Registry program will lead to a reduction in disparities in the care and overall health of younger and older and African-American patients, as well as a reduction in the overall cost of care for bipolar disorder (e.g., reducing preventable hospitalizations and substance use), and an increase in health-related quality of life and social/occupational functioning of these individuals. Data from this study will be made available to other researchers for secondary analysis after the main study results have been published.