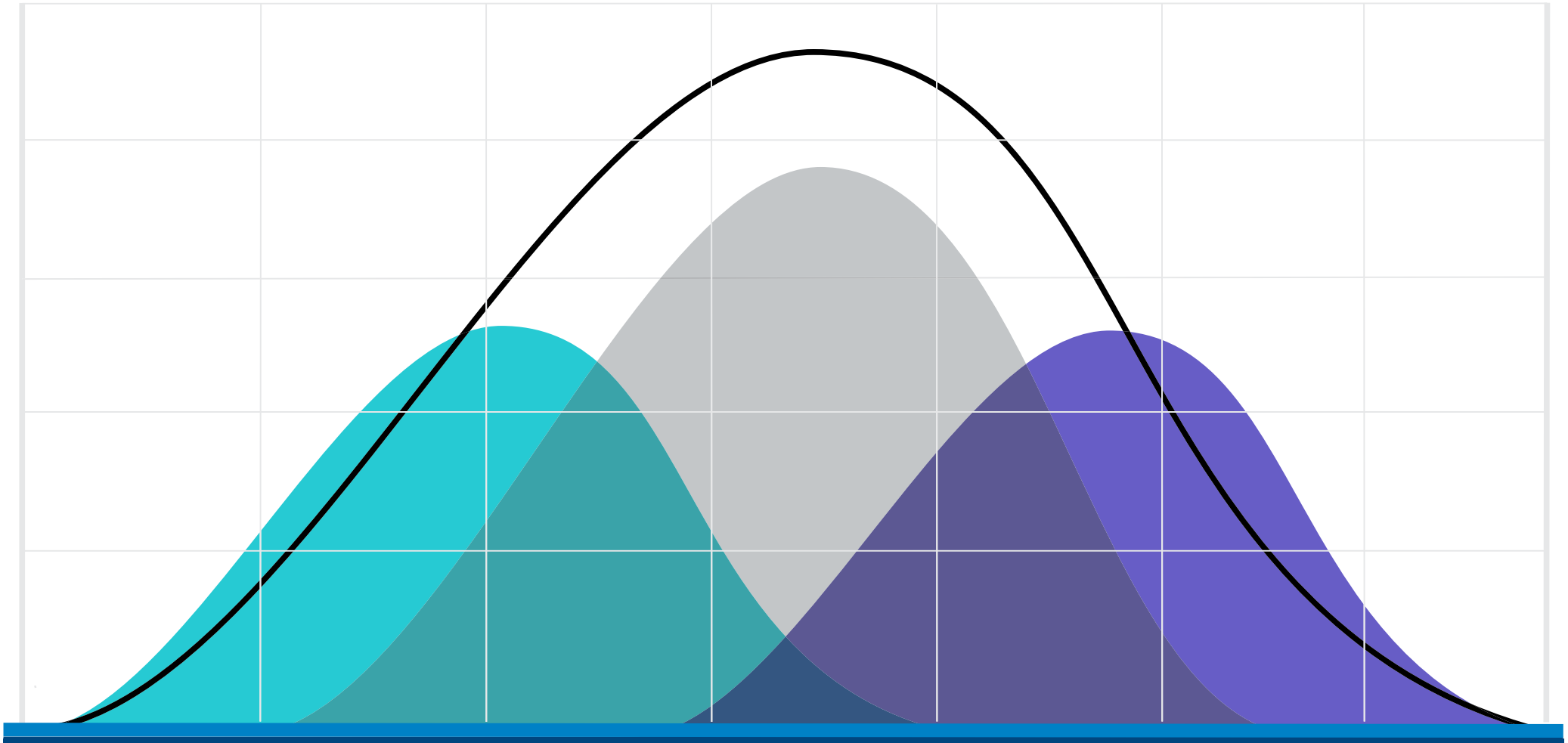
Henry Ford Health System

CELEBRATING 100 YEARS
Together, We Can

100 Year Celebration



HEALTH DISPARITIES RESEARCH COLLABORATIVE

Research Report Issued December 2015

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HDRC GOALS AND MEMBERSHIP

HDRC provides a platform for support and collaboration among HFHS investigators working to understand racial and ethnic health disparities. We encourage all who are interested in health disparities research to become members.

Goals of the Collaborative

Goal 1: HDRC will support research seeking to identify and understand the underlying causes and contributing factors to observed racial and ethnic disparities in healthcare and disease.

Goal 2: HDRC will support intervention studies aimed at eliminating racial disparities in healthcare and disease.

Goal 3: HDRC will consult with HFHS providers and leaders to facilitate translation of research findings into clinical practice and to implement strategies that address and eliminate disparities.

Goal 4: HDRC will act as a clearinghouse for health disparities research conducted at HFHS.

Comprehensive Health and Social Services (CHASS)

Arab Community Center for Economic and Social Services (ACCESS)

Benefits of Membership

- Assistance with grant submissions, including grant development consultation, project start up support, and assistance in the execution of funded projects
- Eligibility for pilot and supplemental funding
- Updates regarding national and local health disparities-related funding opportunities, seminars, conferences, and workshops
- Waived registration fees for HDRC sponsored events

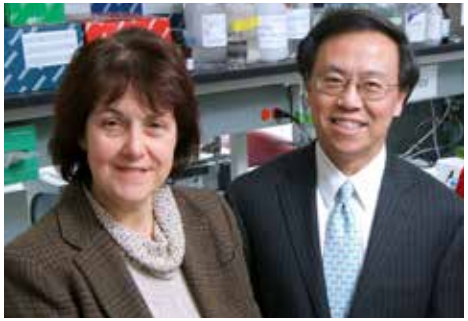
HENRY FORD HEALTH SYSTEM LEADERSHIP

"Given the myriad of medical and social advancements, it is difficult to comprehend that profound health disparities still persist among racially and ethnically diverse communities. As CEO of HFHS, I've maintained an unwavering commitment to the success of efforts that continuously drive the reduction and ultimate elimination of health and healthcare disparities."

Nancy M. Schlichting, CEO Henry Ford Health System

"The HDRC at HFHS is at the forefront of educating the healthcare industry on the prevention, diagnosis, treatment, and management of diseases that disproportionately affect underserved populations and communities of color. Through the efforts of Dr. Christine Joseph, the Collaborative and its many supporters, HFHS is demonstrating our commitment to equity in health care with each patient we serve."

Wright Lassiter, III President, Henry Ford Health System



Henry Lim, MD, (Senior Vice President for Academic Affairs and a lead physician researcher in the Multicultural Dermatology Center), and Margot LaPointe, PhD, (Vice President for Research), provided the impetus and support for establishing the HDRC in 2007. According to Dr. LaPointe, the HDRC falls within the HFHS research vision, which is *"To improve human health and well-being through outstanding biomedical research and its application. With our large patient population and its diversity, along with our electronic medical records, Health Alliance Plan (HAP) pharmacy records and other research resources, HFHS is well positioned to expand its research activities in racial disparities and provide meaningful solutions to care for its diverse patient population."* Dr. Henry Lim adds, *"HFHS has always been a pioneer in the development of innovative and better strategies for providing the highest quality care to diverse patient populations. The establishment of the HDRC was in recognition of the important role of research in the overall mission of HFHS, and the fact that we have a group of highly dedicated scientists, physicians and staff who are committed to the elimination of health disparities."*

Drs. Henry Lim, M.D., Senior Vice President for Academic Affairs
and Margot LaPointe, PhD, Vice President for Research

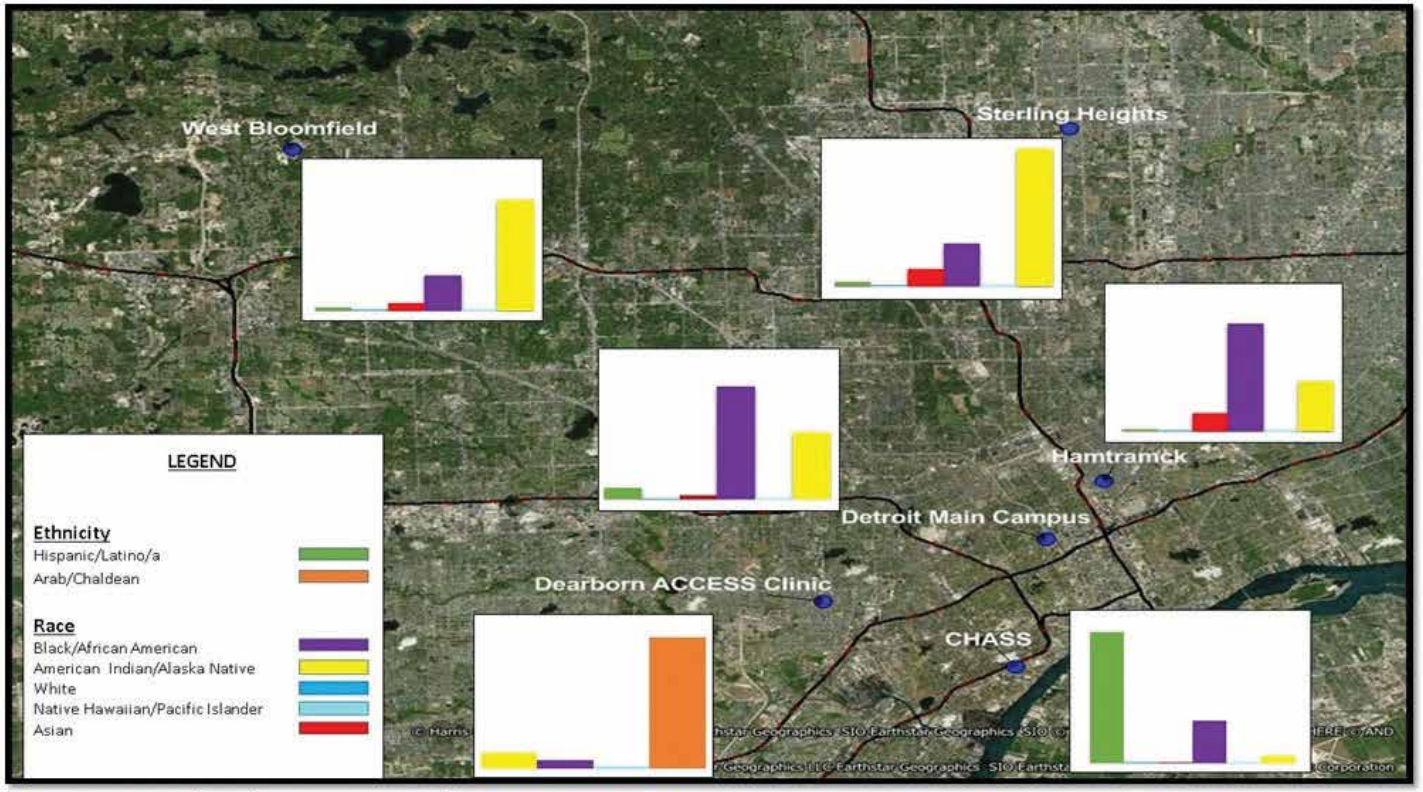
DIRECTOR'S STATEMENT

"...To know the causes of a disease and to understand the use of the various methods by which the disease may be prevented amounts to the same thing as being able to cure the disease". This is a quote from Hippocrates, who aside from being one of the first physicians, is also considered the first epidemiologist. Hippocrates was one of the first to recognize that environmental conditions impact the health of an individual. Today, the term, "social determinants of health" is commonly used and is often mentioned in the discussion of disease etiology and risk. In this context, perhaps the quote from Hippocrates can be rewritten to something like this:

To know how social determinants cause health inequities and to understand the various methods by which causal pathways linking social determinants to health inequities can be interrupted, amounts to the same thing as being able to eliminate health inequities.

A modern challenge for epidemiologists is to provide evidence of causal pathways between social determinants (e.g., neighborhood-level factors) and disease risk. Evidence of direct links between social factors and disease are what is needed to advocate for policies that will ultimately serve to eliminate health inequities. Analyses that provide evidence of causal relationships require collection of social and neighborhood-level data on a large scale. This year, the Institute of Medicine has recommended that social factors be included in the electronic health record. Not only will the addition of these variables provide important information to healthcare providers, but these variables will also be a valuable asset to investigators in healthcare systems, like the HFHS investigators featured in this issue, who are working diligently to conduct the type of research that can lead to the elimination of health inequities.

PATIENT DIVERSITY AT HENRY FORD HEALTH SYSTEM



West Bloomfield

Sterling Heights

Main Campus

Hamtramck

ACCESS

CHASS

HFHS continues to serve a diverse patient population by providing primary, secondary, tertiary and specialty care in four counties in southeastern Michigan and throughout metropolitan Detroit. This diversity positions HFHS as a national leader in the study of racial and ethnic disparities in health and healthcare. Here we highlight the diversity of the HFHS patient population by presenting patient characteristics from six sites throughout the Metro Detroit area: the Henry Ford Main Hospital; sites in the cities of West Bloomfield, Sterling Heights, and Hamtramck; and the HFHS-physician staffed Arab Community Center for Economic and Social Services (ACCESS) Clinic in Dearborn, and the Comprehensive Health and Social Services (CHASS) Center in Detroit.

HDRC SPONSORED EVENTS AND SPEAKERS

4th Annual Reception – September 15, 2011: Promoting Transdisciplinary Research for Resolving Disparities

Featured Speakers: Kenneth Olden, PhD, ScD, LHD *"Neighborhood Specific Epigenome Analysis: A Promising Approach to Discovering Causes of Health Disparities Amenable to Prevention,"* and **Ana Diez-Roux, MD,** *"Beyond Individual-level Risk Factors: How Neighborhood Environments Shape Disease Risk and Contribute to Health Disparities."*

5th Annual Reception – October 16, 2014

Featured speaker: Dr. Bruce Link, Distinguished Professor of Public Policy and Sociology at the University of California Riverside, previously at Columbia University, *"Social Conditions as Fundamental Causes of Health Inequalities: Theory, Evidence and Policy Implications."*

Pre-Reception Speakers

Peter Hammer, PhD Director of the Damon J. Keith Center for Civil Rights and Professor of Law at Wayne State University (Detroit MI), *"What's the Deal?"*

Jianhui Hu, PhD, Research Associate at HFHS Center for Health Policy & Health Services Research *"Socioeconomic Status and Health Care Outcomes."*

March 2014, Membership meeting

Kurt Metzger, MS Mayor of Pleasant Ridge, MI and director emeritus of Data Driven Detroit, *"Utilizing Data for Local Decision Making: The Story of Data Driven Detroit."*

HDRC membership meeting.

2014-2015 WEBINAR SERIES METHODS AND APPLICATIONS FOR HEALTH DISPARITIES RESEARCH

This five-part series, targeting researchers, healthcare providers, public health professionals and policy makers is designed to review epidemiology topics and methods related to health disparities and translational research. The 30-45 minutes lectures are viewable through the Department of Continuing Education at HFHS. http://www.henry.hfhs.org/multimediacourse

Social Conditions as Fundamental Causes of Health Inequalities: Theory, Evidence and Policy Implications

Bruce Link, PhD. professor of Epidemiology and Sociomedical Sciences, researching health disparities that occur by race/ethnicity and socioeconomic status. This talk was presented at the 5th annual HDRC reception.

Quality Improvement and Health Care Disparities

David Nerenz, PhD. Director of the HFHS Center for Health Policy and Health Services Research is responsible for research on innovation in the organization of health care services, for analysis of federal and state health reform initiatives, and for coordination of HFHS's involvement in federal and state health care demonstration projects.

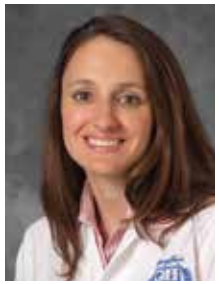
Rethinking Sustainability: Improving Mental Health Through Community Empowerment and Engagement Initiatives

Kathleen West, Dr.PH, MPH is a public health professional working with programs that address at-risk families, maternal/child health and welfare, intergenerational trauma, mental health and addiction issues. Dr. West has investigated substance abuse and mental health issues in the context of families in the judicial system for thirty years and now focuses on collaborative courts expansion. This talk was presented at the Global Health Initiative on October 16, 2015.

Nocturnal Asthma and the Importance of Race/Ethnicity Genetic Ancestry, and the Early Life Microbiome

Albert Levin, PhD, MPH Senior Scientist in the HFHS Department of Public Health Sciences has collaborated extensively with principal investigators conducting genetic research. His recent work has focused on the genetic mapping of a number of traits with a strong immunological component, including sarcoidosis, total circulating Immunoglobulin E (IgE) levels, and asthma.

Implementation Science for Health Disparity Research



Melody Eide, MD is a dermatologist and a public health researcher with training in health services research and epidemiology. She has a master's degree in public health and has completed a three-year post-doctoral training program funded through the Agency for Healthcare Research & Quality (AHRQ). She holds appointments in both the HFHS Departments of Dermatology and Public Health Sciences. Her interests include reducing delay and barriers to receipt of recommended medical care, social determinants of health outcomes, and medical informatics enhancements in contained health systems to improve disease surveillance.

HDRC PARTNERSHIP WITH HFHS GLOBAL HEALTH INITIATIVE (GHI)

Haitian students practice qualitative interviews.

GHI's mission is to identify issues that affect the most marginalized and vulnerable populations in the US and abroad for the purpose of implementing and evaluating sustainable cutting-edge solutions. The HDRC partners with GHI to train researchers who want to contribute to reducing health inequities throughout the world.

Haiti - Haiti faces numerous development challenges, particularly in the health sector. In January 2010, Haiti was hit by a magnitude 7.0 earthquake which resulted in 222,570 deaths, 1.3 million displaced persons, 188,000 destroyed or damaged homes and 49 health facilities rendered unusable. Five years later, short-term international aid is dwindling, and Haiti continues to face many challenges including weakened health infrastructure and an estimated 170,000 people still living in communities for internally displaced persons. In February 2015, GHI investigators Dr. Kaljee, Ms. Parke, and Mr. Tyler Prentiss were in Haiti to conduct a follow-up training with fifteen of the workshop participants to launch the Healthcare Utilization and Access survey project. This model provides a research project that allows the students to not only implement the lessons learned in the field, but also to gather important public health data, which will facilitate future research projects.

Guatemala - A large proportion of Guatemala's population lives in poverty, 45% of household incomes are below the poverty line and 37% of Guatemalans live on less than $2 per day. In collaboration with Universidad Francisco Marroquín, a GHI-HDRC team traveled to Guatemala City in March 2015, to take part in a workshop on epidemiology and research methodology. Speakers from HFHS presented on study design strategies, survey design, sampling, and data analysis; speakers from Universidad Francisco Marroquín, and several Guatemalan public health officials presented on health issues currently facing the country.

Columbia - The department of Chocó is located in northwest Colombia, on the border with Panama. Chocó is inhabited principally by Afro-Colombians (80% of the population) and a smaller percentage of indigenous peoples (10%). The region has suffered from historic marginalization and has one of the largest populations of internally displaced people worldwide. In Choco's capital Quibdó, 52% of residents have been forcibly displaced from their land in the last twenty years due to internal violence. In September 2015, a GHI-HDRC team traveled to Quibdó, with Dr. Diego Lucumi (Universidad El Bosque) to conduct a workshop that focused on epidemiology, community-based participatory research, sampling methods, and the design and conduct of community health needs assessments. The workshop was a collaborative effort to address health needs of the area, and stemmed from a partnership between the Universidad Tecnología del Choco, Universidad El Bosque, and the Universidad de los Andes.

Columbian workshop students show earned certificates.

Blood pressure check at ACCESS

HIGHLIGHTED RESEARCH AND SELECTED PUBLICATIONS

Investigator: Brian Ahmedani, PhD, MSW
Mental Health Research Network: A Population-based Approach to Transform Research
Funding source: *National Institute of Mental Health*

A recent publication found that suicide is a public health concern, but little is known about the patterns of health care visits made before a suicide attempt, and whether those patterns differ by race/ethnicity. This need for effectiveness research to guide practice and policy is especially pressing in mental health. The objective of the study was to examine racial/ethnic variation in the types of health care visits made before a suicide attempt, the timing of those visits, and documentation of mental health or substance use diagnoses. In a retrospective, longitudinal study, we identified 22,387 individuals who attempted suicide and were enrolled in a health plan across ten Mental Health Research Network health systems. Over 38% of the individuals made any health care visit within the week prior to their suicide attempt and 95% within the preceding year; these percentages varied across racial/ethnic groups (P<0.001). This study provides temporal evidence of racial/ethnic differences in health care visits made before a suicide attempt. Health care systems can use this information to focus the design and implementation of their suicide prevention initiatives.

Investigator: Gwen Alexander, PhD, MPH
Encouraging Young Adults to Make Effective Nutrition Choices: MENU Gen Y Study
Funding source: *National Institute of Child Health and Human Development*

African American and Hispanic/ Latino individuals have higher rates of chronic diseases that can be related to diet including diabetes and obesity. As growing evidence points to increased health risks associated with unhealthy eating, young adults will face declining life expectancy unless changes are made. This study involves a randomized trial to evaluate an age-targeted web-based intervention designed to improve the diet of young adults (ages 21-30) as they navigate a life stage of greater independence. The goal of the study is to increase daily intake of fruits and vegetables for "Generation Y" (young adults born >1980) using relevant features that appeal to this group.

Investigator: Gregory Barkley, MD
Maternal Outcomes and Neurodevelopmental Effects of Anti-epileptic Drugs
Funding source: *National Institute of Neurological Disorders and Strike*

Age-adjusted lifetime and active epilepsy from multivariate analyses have demonstrated significantly higher rates for Blacks compared to Whites and for those not completing high school compared to those who attended graduate school. Epilepsy is also one of the most common neurological disorders affecting women of childbearing age. Poor pregnancy outcomes are increased in these women and their children. There is a compelling need for prospective, properly controlled studies in women with epilepsy during pregnancy to improve maternal and child outcomes. This multicenter investigation employs a prospective, observational, parallel-group, cohort design with the goal of establishing the relationship between anti-epileptic drugs exposure and outcomes in the mother and child as well as describe and explain the variability in anti-epileptic drugs exposure and response. The results will enable clinicians to prospectively calculate individual dosing regimens for the mother in order to optimize dosing and limit unnecessary drug exposure to the child.

Investigator: Andrea Cassidy-Bushrow, PhD
Childhood Health Disparities: Exploration of Prenatal Exposures in Primary Teeth
Funding source: *National Institute of Environmental Health Sciences*

Differences in prenatal exposures may account for some of the racial disparities observed in health outcomes; however, studies have been hampered by a lack of a reliable means for examining such retrospective exposures. In a racially diverse established birth cohort, we used a novel method of elemental bio-imaging of human primary teeth with laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS) to examine the association of pre- and post-natal metal levels in naturally shed primary teeth together with birth weight and allergic disease measures. Information gained may guide public health policy, improve prevention strategies, and lead to earlier identification and treatment of high-risk children with the overall goal to reduce health disparities and improve the public's health.

Racial Disparities in Childhood Health: Role of Chronic Stress and Inflammation
Funding source: *The Fund for Henry Ford Hospital*

A unique source of stress in adolescents may be time spent on the Internet. In our initial work from this study, we explored Internet use and health outcomes in a racially-diverse sample of adolescents. Overall, there were significant differences in Internet use across race and gender ($p = 0.048$); White/other females differed from Black females ($p = 0.035$), Black males ($p = 0.030$), and White/other males ($p = 0.052$) in their use of the Internet. White/other females were the least likely group to be heavy Internet users. Internet use is nearly ubiquitous among adolescents. Growing evidence suggests heavy Internet use negatively impacts health, yet the relationship between time spent online and adolescent blood pressure (BP) is unknown. We examined the association between Internet use and elevated BP in a racially-diverse cross-sectional sample of 331 healthy adolescents (ages 14-17 years). Heavy Internet use was defined as ≥2 hours/day, moderate use as <2 hours/day ≥5 days/week and light use as <2 hours/day ≤4 days/week. Elevated BP was defined as systolic or diastolic BP ≥90th percentile. Heavy Internet users had statistically significantly higher odds of elevated BP compared to light Internet users.

Investigator: Robert Chapman, MD
Southeast Michigan Community Network Program
Funding source: *National Cancer Institute*

Older African Americans disproportionately experience higher rates of cancers, are more likely to be diagnosed at advanced disease stages, and suffer higher mortality rates. The Southeast Michigan Community Networks Program aims to reduce disparities in breast, prostate, lung, and colorectal cancers that adversely affect older, underserved, African American adults in southeastern Michigan.

Investigator: Sharon Hensley Alford, PhD
Predictors of Adjuvant Endocrine Therapy Adherence in Women with Breast Cancer
Funding source: *National Institute of Mental Health*

The survival gap between African American and white women with breast cancer is most pronounced in hormone receptor-positive (HR+) subtypes, and could be related to differences in use of endocrine therapy (ET). The relationship between race and initiation of ET is not well defined. The survival benefits of adjuvant hormonal therapy for women with HR+ breast cancers are well documented. However, half of all breast cancer patients who start hormonal therapy discontinue treatment by the fifth year. Non-adherence to therapy has been shown to significantly increase mortality in breast cancer patients. Despite its importance, little is known

about factors that explain why so many women fail to complete therapy. In this study, women who start hormonal therapy will be followed for 3 years of treatment to identify clinical, psychosocial, and healthcare delivery factors that predict their adherence.

Investigator: Christine Cole Johnson, PhD
Pets and the Infant Microbiome: Effect on Immune Maturation & Atopic Asthma
Funding source: *National Institute of Allergy and Infectious Diseases*

Asthma and allergy continue to be more prevalent in urban, African American communities. Can indoor environmental differences leading to differences in factors that influence our gut microbiome be the reason? In this NIH–funded program project, four synergistic projects will examine the hypothesis that the presence of pets in a home results in a more diverse bacterial community composition of the dust in the home which in turn influences the development of the gut bacterial community composition of a newborn infant living in the home.

Patient Engaged Research Center
Funding source: *Agency on Healthcare Research and Quality*

In 2014, HFHS was one of only a handful of organizations across the country chosen to participate in a groundbreaking research study to improve the outcomes of patients. Patient-Centered Outcomes Research is a new approach to research that empowers HFHS patients and their family to ask questions, be involved, and actively participate in studies that improve the patient's quality of life.

Investigator: Christine Joseph, PhD
Feasibility of an Emergency Department initiated Online Asthma Management Program for Urban Teens
Funding source: *National Heart, Lung, and Blood Institute*

Death rates for asthma are higher for African American adolescents aged 15-19 years than for White adolescent and for younger children. Teens in underserved communities are more likely to use the Emergency Department (ED) for asthma as a primary source of care. This episodic care impedes development of the patient self-regulation skills necessary for asthma control. The objective of this project is to evaluate the feasibility of conducting a randomized controlled trial to evaluate implementation of Puff City in an urban ED setting. The study examines issues around recruitment, participant compliance with the study protocol, Internet access, and attrition.

Investigator: Albert Levin, PhD
Integrated Genomic Biomarkers to Identify Aggressive Disease in African Americans with Prostate Cancer
Funding source: *US Army Medical Research Acquisition Activity*

The death rate for prostate cancer is 2.4 times higher in African American versus white men. Prostate cancer is the only cancer with a blood-based biomarker, namely prostate specific antigen (PSA), which allows for early detection. Unfortunately, a large number of men (~33,000) die each year from prostate cancer because PSA is not well suited for predicting risk of disease recurrence. Our working hypothesis is that information about tumor DNA can serve as a component of recurrence risk assessment and be applied in treatment planning to reduce prostate cancer health disparities. The proposed study will involve evaluating published DNA biomarker and the discovery of African American specific biomarkers of disease recurrence

Investigator: David Lanfear, MD

Impact of Race and Genetic Factors on Beta-Blocker Effectiveness in Heart Failure

Funding source: *National Heart, Lung and Blood Institute*

African Americans face higher heart failure rate (HF) prevalence and mortality than whites. Beta adrenergic antagonists (beta-blockers, BB) are the foundation of modern HF care, but their effectiveness in African Americans is not clear. We will assess the influence of race and genetic factors on BB effectiveness, measured by clinical events (time to hospitalization or death) and health status. Ultimately, this data will clarify the benefit of BB in African Americans, and contribute to improve targeting of BB therapy to those with highest likelihood of favorable response while avoiding those likely to respond unfavorably. Recruitment has now closed with over 1100 patients enrolled, genotyping and analysis are well underway.

Investigator: Mei Lu, PhD

Comparative Effectiveness Research in the Chronic Hepatitis Cohort Study (CHeCS)

Funding source: *Centers for Disease Control and Prevention.*

Older age, male sex, Asian race and Hispanic ethnicity were associated with higher odds of cirrhosis in CHeCS hepatitis C (HCV) patients. The severity of liver disease in the HCV infected population of the United States remains uncertain. We estimated the prevalence of cirrhosis in adults with HCV using multiple parameters including liver biopsy, diagnosis/procedure codes, and a biomarker. Among 9,783 patients, 2,788 (28.5%) were cirrhotic by at least one method. Biopsy identified cirrhosis in only 661 (7%) patients, whereas Fibrosis-4 scores and diagnosis/procedure codes for cirrhosis and hepatic decompensation identified cirrhosis in 2,194 (22%), 557 (6%), and 482 (5%) patients, respectively.

Pragmatic Cluster Randomized Trial of an Asthma Intervention for Urban Teens

Funding source: *National Heart, Lung, and Blood Institute*

Asthma morbidity is higher among urban, African American teens compared to white teens. The evaluation of programs aimed at reducing disparities is often done through clinical trials. However, clinical trials maybe complicated by low enrollment of eligible patients, poor study compliance, and high cost for the specialized infrastructure for study conduct. Comparative effectiveness methods evaluate effective interventions in a "real world" setting with decisions tailored to individual patient needs. The objective of this proposal is to implement a seamless clinical trial lifecycle using electronic medical records to evaluate an asthma management program for urban teens in a clinical setting. This approach will significantly increase study recruitment and reduce study-associated costs.

Investigator: Norman Markowitz, MD

Expanded and Integrated Human Immunodeficiency Virus Testing for Populations Disproportionately Affected by HIV, Primarily African Americans

Funding source: *Centers for Disease Control and Prevention/Department of Health and Human Services.*

As of 2008, over half a million African Americans were estimated to be infected with HIV, with 21.4% undiagnosed. The Centers for Disease Control and Prevention (CDC) estimates that 1,178,350 Americans are living with HIV; of those, approximately 240,000 are unaware of their HIV-positive status. Increasing the number of persons who are aware of their status is a critical strategy for preventing HIV infections. To increase awareness of HIV status, CDC established the Expanded Testing Initiative (ETI), under which three programs have been launched. In 2007, CDC

implemented PS 07-768 Expanded and Integrated Human Immunodeficiency Virus (HIV) Testing for Populations Disproportionately Affected by HIV, Primarily African American

Evaluation of a Rapid Point of Care Syphilis and Hiv Screening Program Among Men 18 to 34 in an Emergency Department setting in Detroit, Michigan
Funding source: *Centers for Disease Control and Prevention*

Detroit, Michigan has experienced a large increase in the number of syphilis cases, centered among young African American men who have sex with men with a high prevalence of HIV co-infection. Young men are a challenging population to target for STD prevention efforts as they are typically non-health care seeking. In part due to the recent closure of the city's long-standing STD clinic at the Herman Kiefer complex, locations to implement screening and treated programs for this population are limited. In Detroit, young men often access the health care system through emergency departments, and this setting can provide an additional opportunity for STD screening, diagnosis, and treatment. Recent advances in rapid testing technologies for both syphilis and HIV have decreased the turnaround time for results and can enable the point of care testing and treatment for syphilis. We will evaluate a potential public health intervention that will inform future prevention and control strategies with an opt-out syphilis/HIV screening program for men ages 18-34 who seek care through the Henry Ford Hospital Emergency Department.

Investigator: Benjamin Rybicki, PhD.
Comprehensive Genome Interrogation of African American Sarcoidosis Families
Funding source: *National Heart, Lung, and Blood Institute*

Sarcoidosis affects African Americans more frequently and more severely than whites. While previous linkage, admixture, candidate gene and genome-wide association studies show statistically compelling effects, causal variants are still unknown and much of sarcoidosis heritability is yet to be explained. This "missing" heritability likely includes effects of both common and rare variants since, in African Americans, the former are inadequately represented and the latter are completely unexplored by commercial genotyping arrays. These facts, coupled with the availability of next-generation sequencing, compel us to perform an exhaustive search for genetic variants that form the basis of sarcoidosis. For this proposal, we will combine genotype and phenotype data in sarcoidosis families to identify undiscovered genetic variants. The data generated are certain to identify candidate causal variants, provide fundamental insight for functional studies and lead to important new hypotheses of inflammation resulting in new treatments in not only sarcoidosis but other inflammatory diseases as well.

A Nested Case-Control Study of Prostate Carcinogenesis
Funding source: *National Institute of Environmental Health Sciences*

African American men have the highest incidence of prostate cancer in the United States. Approximately 1 million prostate biopsies are performed annually in the US, two-thirds of which reveal benign conditions but often also histologic inflammation. In prostate cancer, genetic, molecular pathology, and toxicology data suggest that inflammation-related processes are involved in cancer-development, but these data conflict with results of epidemiological studies that show an inverse correlation between inflammation and prostate cancer risk. This may be due to bias in the factors that lead men to undergo prostate biopsy, as well as complexity of the inflammatory phenotype itself. Our proposed study will address this paradox by dissecting inflammation at the cellular, molecular, and clinical level. A better understanding of the clinical implications of chronic inflammation of the prostate—so often observed in older men—can have significant impact upon millions of men and may ultimately provide targets for prevention and treatment.

Investigator: Aamir Siddiqui, MD

Health Care Innovation Challenge: Mobility, the 6th Vital Sign

Funding source: *Centers for Medicare and Medicaid Services/Department of Health and Human Services*

Hospital admissions for blacks and Latinos are associated with significantly more disabilities than whites. The Mobility Bundle is based on the concept that enhancing mobility of all hospitalized patients will improve outcomes and prevent hospital-acquired complications across the care continuum and in all units. HFHS received an award for an innovative care model that encourages and supports patient mobility for patients at risk for hospital-acquired pressure ulcers (HAPUs) and ventilator-associated pneumonia (VAP) during acute inpatient hospitalizations. The interventions include mobility and skin assessments, repositioning, range of motion exercises, assistance with ambulation, and mobility/skin related patient and family education. The goal is to reduce HAPUs and associated costs, VAP, improve patient satisfaction, and decrease length of stay.

Investigator: Abraham Thomas, MD

Prevention of Cardiovascular Disease in Diabetes Mellitus

Funding source: *National Heart, Lung, and Blood Institute*

African Americans are more likely to have diabetes than non-Hispanic whites. Many diabetic patients die of cardiovascular disease (CVD). CVD risk in diabetic persons is 2-4 times that of the nondiabetic population. This increased CVD risk, along with the increasing prevalence of obesity and increasing numbers of elderly in the US population, means that diabetes-associated CVD will become an even greater public health problem in the future. This study is a multi-center randomized clinical trial of about 10,000 adult patients with Type 2 diabetes mellitus followed for 4-7 years. The primary objective of this research program is to assess whether the rate of major CVD events can be reduced by 1) intensive control of blood sugar compared with conventional control; 2) intensive control of blood pressure compared with conventional control; and 3) intensive control of blood lipids compared with conventional control. Other objectives include the comparative cost-effectiveness of the above interventions and their impact on health-related quality of life.

Investigator: Ganesa Wegienka, PhD

Early Life Vitamin D, Racial Disparities and Wheezing

Funding source: *National Heart, Lung, and Blood Institute*

This study will evaluate whether lower prenatal and early life vitamin D levels can explain, at least in part, the higher rates of allergic disease outcomes among African American children compared with White children. Pediatric allergy and asthma are a considerable public health burden, even more so among African Americans and there are no proven prevention strategies. Further, there is an epidemic of vitamin D deficiency caused by changes in lifestyles in westernized cultures, including the United States, which disproportionately affects African Americans compared to lighter-skinned individuals. Vitamin D deficiency is a compelling candidate as a contributor to increased risk for allergic disorders and is of great current interest. This study will investigate the associations between multiple serological levels of vitamin D and the outcomes of skin prick testing and total and specific serum lgE concentration, as well as wheeze with doctor-diagnosed atopic dermatitis at age 2 years in an already established racially diverse birth cohort. Vitamin D will be evaluated

rigorously, as it is modifiable and can potentially provide a low cost public health intervention that could help prevent clinical allergy and asthma and reduce racial disparities.

Study of Environment, Lifestyle, and Fibroids
Funding source: *National Institute of Environmental Health Sciences*

The Study of Environment, Lifestyle & Fibroids, or SELF, is a longitudinal study sponsored by the National Institutes of Health (NIH). The purpose of SELF is to learn how fibroids develop, who tends to develop them, and how to help prevent health problems caused by fibroids. More than 1600 women were recruited and we are preparing for the final follow-up visit. The main hypotheses are related to vitamin D, reproductive tract infections and ancestry informative markers. HFHS is the only clinical site conducting this study on behalf of NIH.

Epidemiology of Allergic Disease Endotypes
Funding source: *National Institute of Allergy and Infectious Diseases*

Pediatric allergy and asthma are a costly public health burden, that disproportionately affects the African American community, yet no prevention strategies have been identified. This project involves applying sophisticated latent class analyses in a large general risk cohort (the WHEALS cohort) combined with immunological markers to finely discriminate asthma and allergy disease phenotypes and endotypes then use this information to conduct risk factor analyses at 2 and 10 years of age.

Investigator: Keoki Williams, MD
New Approaches for Empowering Studies of Asthma in Populations of African Descent
Funding source: *National Heart, Lung, and Blood Institute*

Asthmatics of African descent tend to have more severe asthma and more severe clinical symptoms than individuals of European ancestry, but relatively few studies have focused on this underrepresented minority group. In this study we take advantage of discoveries in the 1,000 Genomes Project and select genetic variants that best represent the genome of individuals of African descent. We will use this information to develop a custom "SNP" chip (called the African Power Chip) to complement current, commercially available chips, and identify genetic polymorphisms associated with risk of asthma in DNA samples from 12,000 individuals.

Combined Transcriptomics and Genomics to Find Asthma Genes in Admixed Populations
Funding source: *National Heart, Lung, and Blood Institute*

African American individuals are more likely to develop asthma and are nearly three times as likely to experience serious asthma complications when compared with European American individuals. Genome wide association studies have identified a number of genetic risk markers for asthma, but many of the associations observed in European and European American patients have not replicated in African American individuals. Therefore, this proposal seeks to combine transcriptomics and genomics to identify asthma-related genes and the expression trail foci, which appear to regulate these genes. This project will identify new asthma related genes by using the genetic diversity of African Americans and recent advances in measuring gene expression and through this combined approach we anticipate finding novel targets to better diagnose and manage asthma.

Pharmacogenomics of Inhaled Corticosteroid Responsiveness in Patients with Asthma
Funding source: *National Institute of Allergy and Infectious Diseases*

Inhaled corticosteroids (ICS) are considered first-line treatment for persistent asthma, yet little is known about the genetic factors that influence

response to this therapy. This has particular importance to African-American patients who suffer disproportionately from asthma complications and who may be less likely to respond to treatment. This project will draw upon our experience and our diverse patient population to assemble a cohort of African American patients with asthma to quantify response to ICS therapy in African American and white patients, as well as use cutting-edge genetic techniques to look for markers that predict treatment response. Knowledge gained from this study may help clinicians select asthma treatments most likely to work for their patients, as well as provide insight for future asthma therapeutics.

Investigator: Edward Zoratti, MD

The Henry Ford Hospital Division of Allergy and Department of Public Health Sciences participate in the Inner City Asthma Consortium (ICAC), an NIH funded clinical research consortium to design and carry out clinical trials that focus on the immunopathogenesis of asthma in children living in U.S. inner cities.

Funding source: *National Institute of Allergy and Infectious Diseases*

Asthma is a complex, heritable disease that affects more than 11. 2% of the U. S. population, which represents approximately 9 million children and 23 million adults. Although the underlying characteristics of asthma exist in virtually all patients, the clinical expression of the disease and response to treatment are highly variable. The purpose of this study is to identify characteristics of participants who have difficult-to-treat asthma and those who have easy-to-treat asthma. It is hoped that this study will provide information about these characteristics that will lead to better and improved treatment for individuals with asthma.

Pre-Seasonal Treatment with Either Omalizumab or an Inhaled Corticosteroid Boost to Prevent Fall Asthma Exacerbations

Funding source: *National Institute of Allergy and Infectious Diseases*

Asthma disproportionately affects the African American community and can lead to missed school days and hospitalizations. Short-term targeted treatment can potentially prevent fall asthma exacerbations while limiting therapy exposure. This study was comprised of a 3-arm, randomized, double-blind, double placebo controlled, multicenter clinical trial, conducted among inner-city asthmatic children aged 6 to 17 years with 1 or more recent exacerbations. The purpose was to compare the medication omalizumab with placebo and omalizumab with an inhaled corticosteroid (ICS) boost with regard to fall exacerbation rates when initiated 4 to 6 weeks before return to school. Before the falls of 2012 and 2013, 727 children were enrolled, 513 were randomized, and 478 were analyzed. The fall exacerbation rate was significantly lower in the omalizumab versus placebo arms (11.3% vs 21.0%; odds ratio [OR], 0.48;95% CI, 0.25-0.92), but there was no significant difference between omalizumab and ICS boost (8.4% vs 11.1%; OR, 0.73; 95% CI, 0.33-1.64). Results demonstrate that adding omalizumab before return to school to ongoing guidelines-based care among inner-city youth reduces fall asthma exacerbations, particularly among those with a recent exacerbation.

Felix Valbuena, M.D. examines a patient at CHASS

HDRC INITIATIVES

Update on the "We Ask Because We Care" Campaign

Megan Brady, MPH, receives inaugural award on behalf of HFHS for excellence in race, ethnicity and language collection from the Commission to End Health Disparities

In 2015, the Office of National Coordinator (ONC) for Health Information Technology published a Final Rule document including criteria on the certification of electronic health records along with standards for more granular collection and use of patient race and ethnicity. In 2009, HFHS had already begun an initiative to improve collection of patient race, ethnicity and language (REal), based on a report published by the Institute of Medicine (IOM) Subcommittee on Standardized Collection of Race/Ethnicity Data for Healthcare Quality Improvement, also published in 2009. In 2011, six years prior to the ONC proposed rule, the "We Ask Because We Care" campaign was launched at HFHS to educate patients and staff on the IOM recommendations and a new data collection process at HFHS. Since implementing this process, monitoring efforts show that REal data is documented for over 90% of our patients at HFHS. On March 21, 2015, The Commission to End Health Care Disparities presented HFHS with its inaugural award for excellence in patient race, ethnicity, and language data collection. The award was presented in Chicago at the Commission's spring meeting.

Language Access Clinic (LAC)

HDRC partnered with Dr. Lucero Chueca Villa, the office of Internal Medicine, and the Institute of Multicultural Health to accommodate Spanish-speaking patients with limited English proficiency and who prefer to communicate about their healthcare in Spanish. Funded through the Gail and Lois Warden Endowed Chair and through private patient donations, a half-day clinic, called the "Language Access Clinic" or LAC was established and dedicated to Spanish-speaking patients from September 19, 2012 through January 29, 2014. In a brief assessment of the clinic, among patients who reported Spanish as their primary language, satisfaction with the clinic visit was higher for LAC patients compared to a comparison group using services before the LAC was established. The LAC was awarded the Quality and Equity award at the 2014 HFHS Quality Expo.

Dr. Chueca Villa presenting her poster at the 2014 HFHS Quality Expo

HDRC Research Scholar, 2015-2017

(Left to Right) Maureen Connolly, M.D., Maricela Guerreo, Family Nurse Practitioner

HDRC is committed to training the next generation of researchers dedicated to making a positive impact on the health of underserved and vulnerable communities. This program creates an opportunity for a research scholar to work closely with an HFHS mentor to develop the research skills needed to launch a career as an independently-funded investigator. The 2015-2017 HDRC Research Scholar is Maureen Connolly, MD. Dr. Connolly is a Harvard University graduate where she studied psychology. She attended medical school at the University of Michigan and completed her pediatric residency at the Children's Hospital of Philadelphia. Dr. Connolly has international experience in the Dominican Republic where she worked on prevention of mother-to-child transmission of HIV through a Michael C. Rockefeller Travel Fellowship. Her research interests within pediatrics include linkage to care for marginalized youth, behaviorally acquired HIV, and lesbian, gay, bisexual and transgender health.

HFHS DEPARTMENTS AND CENTERS FACILITATING RESEARCH ON RACIAL AND ETHNIC HEALTH DISPARITIES

PUBLIC HEALTH SCIENCES (PHS)

Current and past chairs of the Department of Public Health Sciences. (left to right) Christine Cole Johnson, PhD, Barbara C. Tilley, PhD and Ed Peterson, PhD

HFHS PHS faculty conducts and promotes population and clinical research studies to advance biomedical knowledge that will result in disease prevention and overall improved health status. In particular, PHS specializes in applied and theoretical statistics and epidemiology, with special emphasis on cancer, genetics, respiratory and neurological diseases. The HDRC is able to support members through the expertise of PHS staff who provide consultation on grant development, study design and statistical analysis.

CENTER FOR HEALTH POLICY AND HEALTH SERVICES RESEARCH (CHPHSR)

Starting in the early 1990s, David Nerenz, PhD. Director of CHPHSR, began a series of demonstration projects, funded primarily by the Commonwealth Fund and the Robert Wood Johnson Foundation, to address the general question of whether health plans could collect data on race/ethnicity of their members, use that data to identify disparities in specific quality of care measures, and then organize quality improvement initiatives to reduce or eliminate those disparities. Over a ten-year period, a set of projects were completed in both Medicaid and commercial health plan settings that answered "yes" to the series of questions posed above, including a project that eliminated disparities in mammography rates at Health Alliance Plan and won a national award from the National Committee for Quality Assurance. CHPHSR staff are also active in national groups working on issues of health care disparities. In May of 2012, Dr. Nerenz of CHPHSR was appointed to the Medicare Payment Advisory Commission (MedPAC) as one of 17 Commissioners. MedPAC is an influential policy-setting body that advises Congress on a variety of payment issues in the context of the Medicare program. Dr. Nerenz also co-chaired an expert panel for the National Quality Forum in 2013-2014 working on the issue of adjustment of health care performance measures on the basis of socioeconomic and demographic factors. This is an issue of great significance to Henry Ford Hospital, other parts of the system, and providers across the country who serve economically and demographically "vulnerable" populations.

David Nerenz, PhD.

COMMUNITY ORIENTED PRIMARY CARE

(Left to right) Tabitha Bedini, M.D., Karen Green, M.D., Sohaib A. Khalid M.D., Eddy Ang, M.D., Della A. Rees, PhD, LPC., Brittany Okpagu, M.D., Yasir Abdulmunem, M.D.

This three-year residency-training program in the Department of Family Medicine at HFHS is designed to prepare family physicians for successful careers in a rapidly changing healthcare environment and teach the most up-to-date approaches to clinical practice, such as evidence-based medicine, disease state management, population health, managed care, use of computers in medicine, and quality improvement methods. During the rotation, COPC residents develop their own research study after conducting several home visits of patients that they have previously cared for. These visits allow residents to witness their patients in a real life setting, allowing them to examine the patient's environment, any social barriers to care, and the patient's access to resources. The family medicine clinics within HFHS, that have become the primary ambulatory training sites, are vital to improving health status

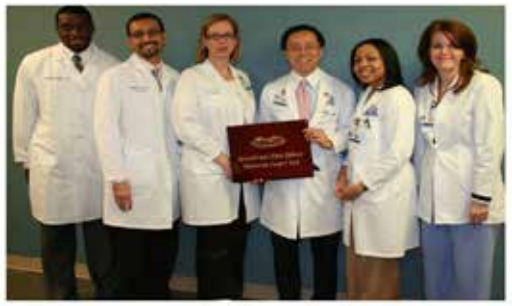
in Detroit communities where morbidity and mortality rates often exceed national norms. Residents are primarily working in the Detroit's North West side and Detroit's East side, where 90% of patients are African American. A wide spectrum of research studies by resident trainees have been conducted within the context of our COPC curriculum, including pediatric obesity, hypertension management, barriers to cancer screening, risk factors for osteoporosis and the impact of food sources on diabetes control.

JOSEPHINE FORD CANCER CENTER (JFCC)

More than one million people in the United States are diagnosed with cancer each year. African Americans have the highest death rate and shortest survival of any racial and ethnic group in the US for most cancers. The Josephine Ford Cancer Center (JFCC) is one of the largest cancer centers in Michigan and is consistently ranked by US News and World Report as one of the top cancer centers in the nation. JFCC treats more than 14,000 cancer patients each year, and more than 15% of all people in southeastern Michigan diagnosed with cancer are treated at HFHS. Each year, more than 3,000 newly diagnosed cancer patients visit the center for treatment.

Haythem Ali, M.D. and clinical staff at the JFCC.

MULTICULTURAL DERMATOLOGY CENTER



(Left to right) Richard Huggins, M.D., Iltefat Hamzavi, M.D., Holly Kerr, M.D., Henry Lim, M.D., Marsha Henderson, M.D., Virginia Novak, RN

The Multicultural Dermatology Center, established in 2007, is one of the few centers of its kind in the nation. The purpose of the Center is to provide state-of-the-art care to patients of color, to educate the next generation of dermatologists on their care, and to perform research on diseases affecting predominately patients of color. The center has been recognized with the Crain's Business News "Innovation in Diversity" Award of Crain's Business News, Detroit, Michigan (2009), "People Pillar Award" of HFHS (2009), and as a top three finalist in L'oreal's "Social Responsibility in Dermatology" competition (2011). The Center is a leader in the treatment of vitiligo, a skin condition that affects all races, but is most visible in dark skin, and hidradenitis suppurativa (HS), a devastating disease that presents as painful boils and occurs most often in African Americans. HFHS clinical algorithms for HS are used throughout the world. Dermatology Department Chair Dr. Henry Lim, along with Drs. Iltefat Hamzavi, Diane Jackson, and Raechele Cochran Gathers form the cornerstone of the Multicultural Dermatology Center. Dr. Jackson is a co-editor of an atlas on Skin of Color (published in 2014), and Drs. Hamzavi and Lim are editor/co-editor of three textbooks on vitiligo and Skin of Color (in preparation).

HDRC STAFF AND ADVISORS

Christine Joseph, PhD, Director
CJOSEPH1@hfhs.org
313-874-6366

Andrea Cassidy- Bushrow, PhD, Staff Investigator
ACASSID1@hfhs.org
313-8746097

Christine Neslund-Dudas, PhD, Staff Investigator
CDUDAS1@hfhs.org
313-874-5472

Maureen Connolly, MD, HDRC Research Scholar
MConnol1@hfhs.org
313-874-6526

Cheryl Miree, MS, Administrator
CMIREE1@hfhs.org
313-874-4640

Brittany McKinnon, BA, Project Coordinator
BMCKINN2@hfhs.org
313-874-9147

HDRC STAFF ADVISORS
Christine Cole Johnson, PhD
Steven J. Keteyian, PhD
David Nerenz, PhD

Henry Ford Health System

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