Center for Research to Advance Healthcare Equity
2021 Colloquium

“Fostering a New Era of Health Disparities Research and Researchers”

Monday, May 10, 2021
9:00 a.m. – 12:00 p.m.

The Duke REACH Equity Center is supported by the National Institute on Minority Health and Health Disparities (Award# U54MD012530), with additional support from the Duke University School of Medicine, and the Chancellor for Health Affairs.
Agenda

9:00 – 9:15  Welcome and State of the Center
Kimberly S. Johnson, MD MHS
Professor of Medicine, Division of Geriatrics
Director, Duke REACH Equity Center

9:15 – 10:00  Keynote Address: “Promoting Health Equity in the Time of COVID-19”
Eliseo Pérez-Stable, MD
Director, National Institute on Minority Health and Health Disparities
National Institutes of Health

10:00 – 10:10  Q&A moderated by Kimberly S. Johnson MD MHS

10:10 – 10:45  Research Presentations: REACH Equity Scholars
- Sarahn Wheeler, MD, Career Development Awardee
  Assistant Professor, Obstetrics and Gynecology
  “IMPaCT IP3: IMProving the Clinical encounter To reduce disparities: Individualized Prematurity Prevention Plan (IP3)”
- Allison Stafford, PhD, Research Scholar Development Awardee
  Assistant Professor, School of Nursing
  “Patient, family, and provider perspectives on Latina adolescents’ engagement in depression treatment”
- Onyi Ohamadike, 3rd Year Medical Student Research Awardee
  2022 MD Candidate
  “Associations of healthcare affordability with guideline-adherent surgery among Non-Hispanic White, Non-Hispanic Black, and Hispanic ovarian cancer patients: a U.S National Cancer Database analysis”

Q&A moderated by Tiarney Ritchwood, PhD
Assistant Professor, Family Medicine & Community Health
Assistant Director, Research, Education, Training Subcore

10:45 – 10:50  5 minute break

10:50 – 11:35  Panel Discussion and Q&A: Workforce Diversity Programs
Moderator: Kevin Thomas, MD
Associate Professor of Medicine, Division of Cardiology
Director, Research, Education, Training Subcore

Program Leadership:
- Duke Medical School 3rd Year Research Program
  Bryan Batch, MD
  Associate Professor of Medicine, Division of Endocrinology
  REACH Equity Research Mentor
Research Presentations: REACH Equity Scholars

Hadley Reid, 3rd Year Medical Student Research Awardee
2021 MD Candidate
“Association of interpersonal processes of care and health outcomes in patients with type II diabetes”

George Yankey, MD, Research Scholar Development Awardee
Fellow, Division of Cardiology
“Factors influencing under-utilization of aortic valve replacement (AVR) as a function of race and ethnicity”

Patrick Pun, MD, Research Voucher Awardee
Assistant Professor of Medicine, Division of Nephrology
“CPR in dialysis clinics: The role of facility resources and patient factors in racial disparities”

Q&A moderated by Tiarney Ritchwood, PhD
Eliseo J. Pérez-Stable, MD, is Director of the National Institutes of Health’s National Institute on Minority Health and Health Disparities (NIMHD), which seeks to advance the science of minority health and health disparities research through research, training, research capacity development, public education, and information dissemination. Dr. Pérez-Stable practiced general internal medicine for 37 years at the University of California, San Francisco (UCSF) before moving to NIH in 2015. He was professor of medicine at UCSF and chief of the Division of General Internal Medicine for 17 years. His research interests include improving the health of racial and ethnic minorities and underserved populations, advancing patient-centered care, improving clinicians’ cross-cultural communication skills, and promoting diversity in the biomedical research workforce. For more than 30 years, Dr. Pérez-Stable led research on Latino smoking cessation and tobacco control policy in the United States and Latin America, addressing clinical and prevention issues in cancer screening. He has published over 250 peer-reviewed articles and was elected to the National Academy of Medicine in 2001.
Background: Preterm birth (PTB, delivery <37 weeks) is a leading cause of neonatal mortality, and non-Hispanic black (NHB) women are 49% more likely to experience PTB. Women with a history of PTB are at high risk for recurrence, and NHB women are less adherent to PTB preventive therapies. Our objectives were to: 1) develop a patient-centered intervention to increase adherence to an individualized prematurity prevention plan (IP3) in NHB women and 2) determine the feasibility and acceptability of the intervention.

Methods: We engaged a multidisciplinary group of stakeholders to develop the IMPaCT IP3 intervention based on our prior study of barriers to IP3 adherence in NHB women. The intervention includes: 1) up to 4 educational presentations based on the participant’s IP3, 2) weekly text messages with general pregnancy information and encouragement to promote adherence, and 3) letter for their employer stating the need for more intensive monitoring and time away from work for appointments. We are conducting a pilot randomized controlled trial comparing the IMPaCT IP3 intervention to an active control. The active control includes: 1) a narrated power point introducing clinic providers and 2) weekly text messages with general pregnancy information only. We recruited NHB women, < 20 weeks gestation, with a history of prior PTB who were receiving care in the Duke high-risk pregnancy clinic. Measures collected at enrollment, 28 weeks gestation, and 4 weeks post-delivery include an IP3 knowledge questionnaire, Pregnancy Specific Anxiety Scale, and Interpersonal Processes of Care Survey (measure of domains of patient-provider interaction). Participants complete a survey at 4 weeks postpartum to provide feedback on intervention components. The primary outcomes are feasibility (30% of eligible patients recruited, 80% of participants retained) and acceptability (80% top rating on exit survey).

Results: We identified 57 women meeting the inclusion criteria between February and August 2020. Thirty of the women (53%) consented and were randomized (14 to IMPaCT IP3 intervention, 16 to active control). We were unable to reach 23 (40%) women and 5 (0.9%) declined participation. Of the 30 participants, 16 have delivered (7 term, 9 PTBs). One participant (3%) has been lost to follow-up. Of the 11 women who have completed the postpartum intervention assessment, 91% found the text messaging helpful and over 80% found the employer letter and educational presentations helpful. The median gestational age at delivery in the intervention and control groups was 36.4 weeks. Eight (53.3%) of the control group had recurrent PTB and 7 (50%) in the intervention group.

Conclusion: Our pilot study demonstrates that the IMPaCT IP3 intervention is feasible based on our pre-specified recruitment and retention metrics. Although not powered to detect a difference in PTB, the percent of PTB is lower in the intervention arm. We are continuing to collect and analyze data assessing acceptability and the impact on adherence.
Background: Despite experiencing a higher prevalence of depressive symptoms and Major Depressive Disorder (MDD), Latina (female) adolescents in the U.S. are significantly less likely than their non-Latina White peers to receive evidence-based treatment for MDD. While several researchers have culturally adapted psychotherapies for depression to meet the needs of Latina teens, little has been done to understand and target barriers to the uptake of evidence-based depression treatments for Latina adolescents.

Aims/Objectives: The purpose of this study is to identify barriers and facilitators to depression treatment use among Latina adolescents from the perspectives of teens, their parents, and healthcare providers.

Population/Sample Studied: Latina teens ages 13-17 with a diagnosis of Major Depressive Disorder \((n = 6)\) and their parents \((n = 6)\) were recruited from clinical and community settings. Additionally, primary care and mental health providers \((n = 9)\) were recruited from a Federally Qualified Health Center.

Study Design/Methods/Analytics Strategy: A qualitative descriptive design was used in the current study, and data collection is ongoing. Individual semi-structured interviews are being completed with parents and teens. Two focus groups were completed with primary care and mental health providers. Qualitative content analysis is being used to determine common categories of facilitators and barriers identified across stakeholder groups.

Progress on Aims: Data analysis is ongoing, but preliminary analysis indicates that all three stakeholder groups identified common barriers and facilitators to depression treatment engagement. Stigma towards depression, cost of treatment, and fear of addiction to antidepressant medications were barriers to starting therapy and medication initially. Lack of provider availability, transportation barriers, and linguistic and cultural mismatch between teens and providers were barriers to continued treatment engagement over time. Facilitators included parental support of treatment, previous family experience with mental health problems or treatment, and cost support for treatment. In addition to these commonly described barriers, teens, parents, and healthcare providers also described unique barriers to depression treatment engagement. Stakeholders also believed that involvement of family in treatment, providing psychoeducation to parents, and incorporating holistic treatment modalities would be helpful in engaging Latina teens in depression treatment.

Conclusion: Facilitators and barriers were noted across a variety of levels (e.g. family, provider, health system). Multi-level strategies are needed to target identified barriers and leverage facilitators to promote uptake of psychotherapy for depression among Latina adolescents.

Next Steps: The next step in this line of research is to obtain feedback from stakeholders on a variety of implementation strategies and how they could be adapted to meet the needs of Latina teens and their families, in preparation for a pilot clinical trial of the implementation strategy.
Background: Advancements in surgical treatment have contributed to decreased overall mortality for ovarian cancer. However, racial and ethnic disparities persist in survival among women in the United States. These disparities are likely in part due to differences in healthcare access, particularly concerning measures of healthcare affordability.

Aims/Objectives: The objective of our study was to evaluate the association between measures of healthcare affordability and receipt of high quality surgery among women with ovarian cancer by race/ethnicity. We also aimed to characterize the association between healthcare affordability and time to surgery for women with ovarian cancer by race/ethnicity.

Population/Sample Studied: Data from the 2016 National Cancer Database (NCDB) on Non-Hispanic White (NHW), Non-Hispanic Black (NHB), and Hispanic patients ages 18-89 diagnosed with stage I-IV ovarian cancer between 2004 and 2016 was analyzed.

Study Design/Methods/Analytics Strategy: Measures of healthcare affordability included area-level income categorized into quartiles and insurance status. Multinomial logistic regression was used to estimate the odds of receiving high quality surgery compared with low-quality and no surgery, while multivariable linear regression was used to analyze differences in time from diagnosis to surgery.

Results: Our study population included 113,702 patients Overall, 86% of patients were NHW, 8% were NHB and 6% were Hispanic. Compared to patients with private insurance, patients with no insurance (aOR 2.55; 95% CI 2.28-2.85) or with Medicaid (aOR 2.05; 95% CI 1.86-2.26) were more likely to receive no surgery. Patients in the lowest income areas were more likely to receive low quality surgery (aOR 1.20; 95% CI 1.13-1.27 ) or no surgery (aOR 1.42; 95% CI 1.31-1.53) compared to patients in higher income areas. This association was stronger among uninsured Hispanic patients (low quality surgery: aOR 1.29; 95% CI 1.01-1.64 and no surgery: aOR 3.37; 95% CI 2.48-4.59) and NHB patients in the lowest income areas (low quality surgery: aOR 1.29; 95% CI 1.09-1.51 and no surgery: aOR 1.52; 95% CI 1.25-1.85). Patients with Medicaid were more likely to have a longer time in days to surgery (β 6.09; 95% CI 4.17-8.02) compared to patients with private insurance. This association was stronger among NHB and Hispanic patients with Medicaid (NHB: β 6.54; 95% CI 1.75-11.34 and Hispanic: β 7.30; 95% CI 2.67-11.93).

Discussion/Conclusion: Low healthcare affordability is associated with receipt of low quality surgery, no surgery, and longer delays to surgery. These associations are strengthened among NHB and Hispanic patients indicating the need for interventions, such as broader hospital referral systems and community-based cancer care coordinators, that promote equitable access to guideline-adherent care for all OC patients.
Background: Non-Hispanic Black (NHB) patients have a higher burden of Type 2 Diabetes Mellitus (T2DM) and experience worse outcomes than Non-Hispanic Whites (NHW). Patient and system factors do not fully explain these disparities. Previous work has demonstrated that aspects of the patient-provider interaction have an impact on chronic disease outcomes including glycemic control. However, these relationships have not been explored in conjunction with race in patients with T2DM.

Aims/Objectives: Examine the association of patient perceptions of care with hemoglobin A1c (HbA1c), medication adherence, and missed appointments in non-Hispanic Black (NHB) and White (NHW) patients with type 2 diabetes (T2DM).

Methods: We conducted a cross-sectional survey of NHB and NHW patients with T2DM receiving care in Duke primary care practices. We used linear and logistic regression models to analyze the association of the subdomains of the Interpersonal Processes of Care survey (IPC) with HbA1c, medication adherence, and missed appointments. We then examined how these associations differed by race. Due to large ceiling and floor effects, we dichotomized IPC subdomains to the strongest endorsement and at least one answer that was not the strongest endorsement.

Results: There was no overall association between IPC subdomains and HbA1c in our sample (N=221). NHB patients who perceived their provider always explained results and medications had a HbA1c on average 0.59 (-1.13, -0.04; p=0.04) points lower than those perceiving their provider sometimes explained results and medications and NHB patients perceiving less hurried communication from their provider had a HbA1c on average 0.82 (-1.62, -0.01, p=0.05) points lower. No effect was observed in NHWs. Never perceiving disrespect from office staff was associated with an average 0.67 (-1.1, -0.24; p=0.002) point improvement in medication adherence for all patients. Never perceiving discrimination from providers was associated with a 0.44 (-0.63, -0.25; p<0.0001) decrease in the probability of missing an appointment for NHB patients.

Discussion/Conclusion: We found that for NHB patients having a provider explain results and medications and communicate less hurriedly was correlated with lower HbA1c. We additionally found that disrespect from office staff was associated with worse medication adherence in all patients and discrimination from providers was associated with increased probability of missing an appointment for NHB patients. These results demonstrate that particular aspects of communication in the patient-provider interaction may contribute to racial disparities in T2DM. Communication training for both providers and staff may reduce disparities in T2DM.
Background: Among patients with severe aortic stenosis (AS), there are limited data on aortic valve replacement (AVR), reasons for non-receipt and mortality by race.

Aims/Objectives: We sought to address the following: 1) assess rates of AVR by AA and CA race among patients with severe AS; 2) determine reasons for AVR non-receipt by race among indicated patients; 3) evaluate 1-year all-cause mortality by AA and CA race among patients with severe AS; 4) determine the effect of AVR on 1-year mortality post-AVR in AA and CA individuals.

Population/Sample Studied: Utilizing the Duke Echocardiography Laboratory Database, we analyzed data from 110,711 adult patients who underwent echocardiography at DUMC between 1999-2013. For inclusion in this analysis AS was defined by index echocardiographic indices, valve area <1cm² or mean gradient >40mmHg. Additionally, to be considered eligible for AVR, individuals had to have severe AS and ≥ 1 of 3 criteria, 1) left ventricular ejection fraction (LVEF) ≤50%, 2) diagnosis of heart failure, or 3) need for coronary artery bypass surgery (CABG).

Study Design/Methods/Analytics Strategy: Logistic regression models were used to assess the association between race, AVR and 1-year mortality. Chi-squared testing was used to assess potential racial differences in reasons for AVR non-receipt.

Discussion/Conclusion: Our analysis was notable for several findings. Despite a higher proportion of risk factors associated with development of AS, AA patients had a lower prevalence of severe AS relative to CA. Among individuals with severe AS and indications for AVR, a lower proportion of AA received AVR compared with CA that did not appear to be explained by early mortality after diagnosis, co-morbidities, or surgical risk. Among patients receiving AVR, median time to AVR was shorter for AA relative to CA. There were no AA/CA differences in mortality rates 1-year post-echocardiogram for all patients eligible for AVR. Finally, AVR was associated with lower rates of subsequent 1-year mortality in both AA and CA patients with no evidence of differential benefit between races.

Progress on Aims: Manuscript submitted and published in the American Heart Journal.

Next Steps: Next steps will be to perform exploratory analyses to understand the facilitators and barriers to AVR. Once we have a better understanding of what the key factors are, then we can potentially implement strategies to help address this. For patients: surveys to understand their reason not to proceed with AVR. For providers: comprehensive surveys focused on perceived reasons for AVR non-receipt. This could potentially be achieved by using an online survey that has categories of AVR non-receipt. Every time a patient is refused, a provider will need to check a few boxes to explain why. This could be done on the health system level.
Background: Cardiac arrest occurs frequently in outpatient dialysis clinics, and provision of CPR by dialysis staff is associated with improved outcomes. However, Black patients in dialysis clinics receive CPR less often compared to White patients. We sought to determine the contribution of dialysis facility resources and patient factors to the observed racial disparity in CPR.

Aims/Objectives: To examine the extent that facility resource-related factors and patient-related factors mediate and moderate racial disparities in the likelihood of receiving staff-initiated CPR after cardiac arrest.

Population/Sample Studied: 1,554 patients who suffered cardiac arrests within US outpatient dialysis clinics identified in the national CARES cardiac arrest registry between 2013-2017

Study Design/Methods/Analytics Strategy: Retrospective cohort study linking the National CARES and Medicare Annual Dialysis Facility Report registries. Differences in facility resource and patient related factors were summarized and compared according to patient race. Multilevel multivariable logistic regression models including these factors were constructed to examine the influence of these factors on the observed disparity in CPR rates between black and white patients.

Results: Compared to white patients, black patients with cardiac arrest dialyzed in facilities that were larger (26 vs 21 dialysis stations, p<0.001), facilities with a lower # of nurses per station (0.29 vs 0.33, p<0.001), and facilities with higher number of Medicare citations (6.8 vs 6.3, p=0.04). Facilities treating black cardiac arrest patients also cared for a higher overall proportion of patients with a history of cardiac arrest (41 vs 35%, P<0.0001), patients with HIV or hepatitis B (5.1% vs 2.9%, p<0.0001) and patients receiving Medicaid insurance (15% vs 11%, p<0.001). However, the racial disparity in receipt of CPR was not altered even after accounting for these facility-level differences in multivariable models and other relevant covariates (adjusted OR=0.45 (95% CI 0.27-0.75) for CPR in black patients vs. white patients). The racial disparity was more pronounced among older patients compared to younger patients (interaction term, p value 0.04). Other patient related and facility quality-related factors did not moderate the racial disparity in receipt of CPR.

Discussion/Conclusion: Although there were significant differences in dialysis facility resources, quality and other characteristics between black and white patients with cardiac arrest, accounting for these differences did not change the disparity in CPR delivery. Reducing this disparity is likely to require a multi-faceted approach including developing universal dialysis clinic specific protocols for CPR delivery and addressing implicit bias.
**Workforce Diversity Programs**

**Resources**

**Duke REACH Equity Center Career Development Award**
2-year professional development and mentored research program for junior investigators conducting disparities research related to the REACH Equity theme.

https://sites.duke.edu/reachequity/funding-opportunities/career-development-awards-program/

**NIH Research Supplements to Promote Diversity in Health-Related Research**
Supplements to current grants to support career development and mentored research projects for individuals from groups underrepresented in biomedical research.

Current NIH PAR for the diversity supplement mechanism:

CTSI Diversity Supplement Resources:
https://www.ctsi.duke.edu/nih-diversity-supplements

**Duke CTSA KL2 Program**
3-year career development and mentored research program for junior investigators conducting research across the translational spectrum.

https://www.ctsi.duke.edu/KL2

**Duke School of Medicine Master of Biomedical Sciences**
Program to enhance the scientific and professional preparation of students aspiring to a career in the health professions or in a related field requiring graduate level biomedical sciences.

https://medschool.duke.edu/education/degree-programs-and-admissions/master-biomedical-sciences

**REACH Equity Summer Undergraduate Research Program (RESURP)**
8-week program for rising juniors & seniors to increase knowledge of racial/ethnic health disparities and conduct a health disparities research project.

https://sites.duke.edu/reachequity/for-students/summer-undergraduate-health-disparities-research-program/

**Duke REACH Equity Center Voucher Award**
1-2 year award to supplement currently funded or standalone health disparities research projects related to the REACH Equity theme.

https://sites.duke.edu/reachequity/funding-opportunities/research-vouchers/
Related Duke REACH Equity Center Awards

Research Scholars Development Award
1-2 year award to support early-stage investigators (trainees, postdoctoral students) interested in conducting a health disparities research project working with a faculty mentor

https://sites.duke.edu/reachequity/funding-opportunities/research-scholars-development-program/

Transdisciplinary Think Tank
1 year award to support bringing together of faculty across disciplines to develop research ideas for proposals addressing racial and ethnic disparities in the clinical encounter.

https://sites.duke.edu/reachequity/funding-opportunities/transdisciplinary-think-tank-program/