Measuring Quality and Performance in the Treatment of Heart Failure in African-American Patients

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BUILDING SUSTAINABLE COMMUNITIES: DELIVERING QUALITY HEALTHCARE

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Disclosures

Elizabeth O. Ofili, MD, MPH, FACC

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Patent: A Method and System for Chronic Illness Care

Founder and Chairman: Global Healthcare Alliance

Founder: AccuHealth Technologies Inc.
Educational Objectives

- Describe the current mortality gap and health inequity due to Heart Failure in African Americans

- Outline current disparities in heart failure care

- Explain the rationale for seeking to address disparities in heart failure care through the National Quality Forum (NQF)

- Outline the process for the heart failure NQF measure #2764 that has been approved for testing
African Americans Have a Higher Prevalence and Incidence of Heart Failure

- Prevalence of heart failure (HF): 4.1% of African American (AA) males and 3.0% of AA females vs 2.2% of white males and 1.7% of white females\(^1\)

### Incidence of HF by Race

<table>
<thead>
<tr>
<th>Race</th>
<th>HF incidence rate per 1000 person-years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese Whites</td>
<td>1.0</td>
</tr>
<tr>
<td>Whites</td>
<td>1.5</td>
</tr>
<tr>
<td>Hispanics</td>
<td>2.4</td>
</tr>
<tr>
<td>AAs</td>
<td>3.6</td>
</tr>
<tr>
<td>Bahrami et al. 2008</td>
<td>3.6</td>
</tr>
<tr>
<td>Choi et al. 2012</td>
<td>4.6</td>
</tr>
<tr>
<td>Incidence of HF in Males vs Females by Race(^4)</td>
<td></td>
</tr>
<tr>
<td>White Females</td>
<td>3.4</td>
</tr>
<tr>
<td>White Males</td>
<td>6.0</td>
</tr>
<tr>
<td>AA Females</td>
<td>8.1</td>
</tr>
<tr>
<td>AA Males</td>
<td>9.1</td>
</tr>
</tbody>
</table>

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African Americans Have a Higher Lifetime Risk and Earlier Onset of Developing Heart Failure

- The lifetime risk of HF in adults over 45 years old is:\(^1\)
  - 32.8% (95% confidence interval [CI]: 27.4-36.1) or 1 in 3 for AAs
  - 25.9% (95% CI: 22.7-28.0) or 1 in 4 for whites

- The likelihood of developing HF before age 50 is 20-fold higher (\(P=0.001\)) among AAs vs whites\(^2\)

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Heart Failure Disparities in African American Patients

- The Prevalence of HF is higher in African Americans than in Caucasians
- HF has a more malignant natural history in African American patients
  - Occurs at an earlier age\(^1\)
  - Associated with more advanced left ventricular disease at diagnosis\(^1\)
- Differing etiology in African Americans
  - More likely to be associated with a history of hypertension\(^1\)
  - Incidence of myocardial infarct is consistently lower\(^1\)
- Worse prognosis in African Americans
  - Higher rate of hospitalization than in Caucasian patients\(^2\)
  - Higher mortality rate than in Caucasians\(^2\)

Why Are African Americans More at Risk for Heart Failure?

- Mechanism of HF and responses to pharmacologic therapy among AAs may differ from those among other races

<table>
<thead>
<tr>
<th>Modifiable risk factors</th>
<th>Hypertension, diabetes, obesity, LVH, smoking, and chronic kidney disease are more common in AAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurohormonal imbalances and endothelial dysfunction</td>
<td>Derangements in the renin-angiotensin-aldosterone and adrenergic axes as well as impaired endothelial function are more common in AAs</td>
</tr>
<tr>
<td>Genetic polymorphisms</td>
<td>Racial disparity may be the result of several polymorphisms associated with the risk of HF (beta 1 adrenergic receptor, alpha 2c receptor, aldosterone synthase, G protein, transforming growth factor beta, nitric oxide [NO] synthase, and transthyretin)</td>
</tr>
<tr>
<td>Socioeconomic factors and quality of care</td>
<td>Low socioeconomic status and discrimination from health care providers serve as barriers to attaining treatment goals in AAs</td>
</tr>
</tbody>
</table>

Combination of Isosorbide Dinitrate and Hydralazine in Blacks with Heart Failure

Anne L. Taylor, M.D., Susan Ziesche, R.N., Clyde Yancy, M.D., Peter Carson, M.D., Ralph D'Agostino, Jr., Ph.D., Keith Ferdinand, M.D., Malcolm Taylor, M.D., Kirkwood Adams, M.D., Michael Sabolinski, M.D., Manuel Worcel, M.D., and Jay N. Cohn, M.D., for the African-American Heart Failure Trial Investigators*

CONCLUSIONS
The addition of a fixed dose of isosorbide dinitrate plus hydralazine to standard therapy for heart failure including neurohormonal blockers is efficacious and increases survival among black patients with advanced heart failure.

BACKGROUND
We examined whether a fixed dose of both isosorbide dinitrate and hydralazine provides additional benefit in blacks with advanced heart failure, a subgroup previously noted to have a favorable response to this therapy.

METHODS
A total of 1050 black patients who had New York Heart Association class III or IV heart failure with dilated ventricles were randomly assigned to receive a fixed dose of isosorbide dinitrate plus hydralazine or placebo in addition to standard therapy for heart failure. The primary end point was a composite score made up of weighted values for death from any cause, a first hospitalization for heart failure, and change in the quality of life.
AHEFT: Impact on Ventricular Remodeling

Clinical Trials

Isosorbide Dinitrate and Hydralazine in a Fixed-Dose Combination Produces Further Regression of Left Ventricular Remodeling in a Well-Treated Black Population With Heart Failure: Results From A-HeFT

JAY N. COHN, MD, S. WILLIAM TAM, PhD, INDER S. ANAND, MD, ANNE L. TAYLOR, MD, MICHAEL L. SABOLINSKI, MD, and MANUEL WORCEJ, MD
FOR THE A-HeFT Investigators

Minneapolis, Minnesota; Lexington, Massachusetts

Fig. 3. Changes of left ventricular ejection fraction and internal dimension at end-diastole from baseline at 6 months. Results represent mean ± SEM.
Ten Years After AHEFT: Have We Advanced Health Equity?

Use of Hydralazine-Isosorbide Dinitrate Combination in African American and Other Race/Ethnic Group Patients With Heart Failure and Reduced Left Ventricular Ejection Fraction

Harsh B. Gokwala, MD; Udho Thadani, MD; Li Liang, PhD; Stavros Stavrakis, MD, PhD; Javed Butler, MD, MPH; Clyde W. Yancy, MD; Deepak L. Bhatt, MD, MPH; Adrian F. Hernandez, MD, MHS; Gregg C. Fonarow, MD

Background—Hydralazine-isosorbide dinitrate (H-ISDN) therapy is recommended for African American patients with moderate to severe heart failure with reduced ejection fraction (HFrEF), but use, temporal trends, and clinical characteristics associated with H-ISDN therapy in clinical practice are unknown.

Methods and Results—An observational analysis of 54,622 patients admitted with HFrEF and discharged home from 207 hospitals participating in the Get With The Guidelines—Heart Failure registry from April 2008 to March 2012 was conducted to assess prescription, trends, and predictors of use of H-ISDN among eligible patients. Among 11,185 African American patients eligible for H-ISDN therapy, only 2,500 (22.4%) received H-ISDN therapy at discharge. In the overall eligible patient population, 5,115 of 43,498 (12.6%) received H-ISDN at discharge. Treatment rates increased over the study period from 16% to 24% among African Americans and from 10% to 13% among the entire HFrEF population. In a multivariable model, factors associated with H-ISDN use among the entire cohort included younger age; male sex; African American/Hispanic ethnicity; and history of diabetes, hypertension, anemia, renal insufficiency, higher systolic blood pressure, and lower heart rate. In African American patients, these factors were similar; in addition, being uninsured was associated with lower use.

Conclusions—Overall, few potentially eligible patients with HFrEF are treated with H-ISDN, and among African-Americans fewer than one-fourth of eligible patients received guideline-recommended H-ISDN therapy. Improved ways to facilitate use of H-ISDN therapy in African American patients with HFrEF are needed. (J Am Heart Assoc. 2013;2:e00214 doi: 10.1161/JAHA.113.000214)

Key Words: guideline adherence  •  heart failure  •  quality  •  race/ethnicity  •  registry

Conclusions—Overall, few potentially eligible patients with HFrEF are treated with H-ISDN, and among African-Americans fewer than one-fourth of eligible patients received guideline-recommended H-ISDN therapy. Improved ways to facilitate use of H-ISDN
Trends in the use of hydralazine/isosorbide dinitrate (HYD/ISDN) at discharge in eligible patients

UNEQUAL Treatment
CONfronting RACIAL AND ETHNIC DISPARITIES IN HEALTHCARE
Differences, disparities, and discrimination: Populations with equal access to healthcare

Source: Gomes and McGuire, 2001
Addressing Health Equity in Heart Failure Care: A systems Approach
National Quality Forum Approves Trial Measure

PERFORMANCE MEASURE #2764 SUMMARY

MEASURE #2764 TITLE:
Fixed-dose Combination of Hydralazine and Isosorbide Dinitrate Therapy for Self-identified Black or African American Patients with Heart Failure and LVEF <40% on ACEI or ARB and Beta-blocker Therapy

MEASURE DESCRIPTION:
Percentage of patients aged 18 years and older with a diagnosis of heart failure (HF) and a current or prior ejection fraction (EF) <40% who are self-identified Black or African American and receiving ACEI or ARB and beta-blocker therapy, who were prescribed a fixed-dose combination of hydralazine and isosorbide dinitrate, and seen for an office visit in the measurement period in the outpatient setting or at hospital discharge.
Beta Testing: Electronic Medical Record Data Elements

<table>
<thead>
<tr>
<th>Administrative¹</th>
</tr>
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<tbody>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Race (self-identified Black or African American)</td>
</tr>
<tr>
<td>Ethnicity</td>
</tr>
<tr>
<td>Payer</td>
</tr>
</tbody>
</table>

**Denominator Patient Information**

- Active diagnosis of heart failure up through the last day of the measurement period
- Current or prior EF <40% or documentation of moderate or severe LVSD
- Active Use ACEI or ARB
- Active Use Beta-blocker

**Numerator Patient Information**

- Active, Order for, or Discharged on Fixed dose combination therapy of hydralazine/isosorbide when seen in outpatient setting or each hospital discharge during measurement period

**Denominator Exceptions**

- Hypotension (severe or symptomatic)
- Severe lupus erythematosus
- Unstable angina
- Peripheral neuritis
- Actively taking Phosphodiesterase Type 5 (PDE5) inhibitor
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  David Smith, MD

• Association of Black Cardiologists
  Cassandra McCollough, MBA, Chief Executive Officer
  Icilma Fergus, MD, Immediate Past President
  Barbara Hutchinson, MD, President

• 1050 AHEFT Participants and their physicians
• The Affordable Care Act
ATLANTA UNIVERSITY CENTER

combined faculty of ~1000 with a student enrollment of over 10,000, from across the US and over 50 countries

Notable alumnae:

- Dr. Martin Luther King, Jr. - Civil Rights Movement
- Ralph David Abernathy - Civil Rights Movement
- Lerone Bennett - Social Historian, writer and Editor of Ebony Magazine
- Julian Bond - Activist for Social Change
- Pearl Cleage - Playwright, journalist, poet, and novelist
- Marva Collins - Founder, Marva Collins Preparatory School
- Marian Wright Edelman - President, Children's Defense Fund
- Samuel L. Jackson - Actor
- James Weldon Johnson - Poet
- Lucy Laney - Great Georgia Educator
- Spike Lee - Playwright, Actor, Activist
- Emanuel Lewis - Actor (Webster)
- Edwin Moses - Olympic Champion
- Eva Pigford - Reality Show - America's Next Top Model Winner
- Keshia Knight Pulliam - Actress (The Cosby Show)
- Shaun Robinson - Weekend Co-Anchor and Correspondent Access Hollywood
- Esther Rolle - Actress (Good Times)
- David Satcher - 16th Surgeon General of US and Asst Secretary of Health
- Louis Sullivan - 17th Secretary of the US Dept of Health and Human Services
- Alice Walker - Writer
- Hosea Williams - Civil Rights Activist
FOR IMMEDIATE RELEASE

April 4, 2016

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New Cardiovascular Disease Registry to Support Care for Underserved

DALLAS, April 4, 2016 — The Association of Black Cardiologists (ABC) will develop a cardiovascular disease registry for underserved populations in collaboration with the Morehouse School of Medicine and the American Heart Association. The registry will import data directly from electronic health records and other healthcare technology platforms and will be powered by technology from the collaborative partners. The data and key measurements collected and tracked
Thank you!!!!

www.msm.edu

Mission: Leading the Creation and Advancement of Health Equity

#1 in Social Mission among US medical schools (Annals of Internal Medicine, June 2010)

Announcing: Association of Black Cardiologists/Morehouse School of Medicine/AHA Cardiovascular Disease Registry
Test eMeasure Specification against Manual Abstraction

- Testing will address aspects across the NQF measure evaluation criteria including:
  - Reliability analyses – parallel forms (agreement between automated reports and the manual review of the medical record) and Cohen’s Kappa statistic with 95 percent confidence intervals
  - Validity analyses – extraction accuracy (criterion validity); sensitivity (ability of a measure to identify positive results), specificity (ability of a measure to identify negative results) and percent agreement between the extracted and gold standard data
  - Usability – measures element average and a weighted average of measure elements
  - Feasibility – analysis of the feasibility of EHRs to collect the needed data elements (current and future) through site interviews with both clinical and informatics staff at each testing site