The Lack of Diversity in the US Physician and Cardiology Workforce is a National Emergency

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Associate Dean for Admissions
Associate Professor of Medicine (Cardiovascular Medicine)
Director, Interventional Cardiology Fellowship Training Program
From Emory University, Aug 5, 1959

“Dear Mr. ___________

Acknowledgment is made of your letter of July 30
Enclosing your application for admission to our School Of Medicine.

I am sorry I must write you that we are not authorized To consider for Admission a member of the Negro Race.

I regret that we cannot help you.

Yours very truly,

LL Clegg
Director of Admissions

P.S. I am returning herewith your $5.00 application fee.”
Underrepresented in Medicine Minorities: Blacks, Hispanics, Native Americans, Native Alaskans/Pacific Islanders

- Underrepresented in Medical Profession Compared to US Population
  - What are the Consequences of this Underrepresentation?
  - What are Potential Benefits of Increasing URM in Medicine?
  - What are the Barriers?/How to Overcome?
“Kindergarten-to-Med School Pipeline”
Underrepresented Minorities

- Kindergarten
- 4th-6th Grade
- 9th-12th Grade
- HS to College
- “College Premed” (Chemistry)
- Admissions
- URMs in Med School
Matriculants

Women predominant applicant pool among Blacks

<table>
<thead>
<tr>
<th>Race and Ethnicity</th>
<th>Percentage of Applicants</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native (n = 117)</td>
<td>40.2% Women, 59.8% Men</td>
</tr>
<tr>
<td>Asian (n = 9,208)</td>
<td>48.0% Women, 52.0% Men</td>
</tr>
<tr>
<td>Black or African-American (n = 3,537)</td>
<td>62.2% Women, 37.8% Men</td>
</tr>
<tr>
<td>Hispanic or Latino* (n = 2,911)</td>
<td>49.5% Women, 50.5% Men</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander (n = 60)</td>
<td>41.7% Women, 58.3% Men</td>
</tr>
<tr>
<td>White (n = 24,055)</td>
<td>43.0% Women, 57.0% Men</td>
</tr>
<tr>
<td>Multiple Race and Ethnicity (n = 3,357)</td>
<td>49.3% Women, 50.7% Men</td>
</tr>
<tr>
<td>Other (n = 1,636)</td>
<td>45.7% Women, 54.3% Men</td>
</tr>
<tr>
<td>No Race Response (n = 2,698)</td>
<td>44.9% Women, 55.1% Men</td>
</tr>
<tr>
<td>Foreign (n = 1,901)</td>
<td>49.6% Women, 50.4% Men</td>
</tr>
</tbody>
</table>

AAMC. *Altering the Course*. 2015
The Problem …

AAMC Diversity Facts and Figures 2014
Women in Cardiology

US Cardiologists
- 87% Men
- 13% Women

Interventional Cardiologists
- 91% Men
- 9% Women

Fellows In Training
- 89% Men
- 21% Women
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- What are the Barriers?/How to Overcome?
Guideline-recommended drug use and achieved target doses tended to be higher in pts treated by female physicians.

Male physicians used significantly less medication and lower doses in female pts.

There was no different treatment for male or female pts treated by female physicians.
I. AICD therapy in pts at risk for SCD
AICD Therapy in Patients at Risk for Cardiac Arrest

**Am Heart J. 2007 Feb; 153(2): 320-7**
50,000 VA pts at risk for cardiac arrest
OR for Blacks (vs Whites) to receive AICD: 0.54

**JAMA 2007 Oct 3; 298 (13), 528-532**
13,000 pts with severely weakened heart muscle
OR for BW (compared to WM) to receive AICD: 0.56

**Circ 2016 Aug 16;134(7):517-26**
21,000 pts with severely weakened heart muscle
Blacks and Hispanics less likely than Whites to get counseled re: ICD
Among pts counseled re: need for ICD, Black were less likely than Whites to ultimately receive ICD
II. Rapid Treatment of Blocked Heart Arteries in Heart Attack Victims

Before stent, artery closed, no blood flow to heart

After stent, artery open, blood flow to heart restored
The Effect of Race and Sex on Physicians' Recommendations for Cardiac Catheterization

“Men and whites were significantly more likely to be referred than women and blacks.”

Kevin Schulman, MD, et. al, NEJM, February, 1999
Rapid Treatment of Heart Attacks

**Am Heart J 2001;142: 604-10**
10,469 Black patients with massive heart attacks from 1994 to 1998 (NRMI database)
53% received thrombolytic therapy

**JAMA 1994 Apr 20;271 (15): 1175-80**
33,641 pts in VAMCs with dx of AMI
Compared to Whites, Blacks:
  33% less likely to undergo cath
  42% less likely to undergo PCI
  54% less likely to undergo CABG
• 289,322 STEMI and NSTEMI patients at 464 hosp

• STEMI tx followed algorithms/NSTEMI tx did not

• Diagnostic cath rates:
  STEMI: no racial difference
  NSTEMI: Blacks < Whites

• Revascularization (PCI) rates:
  Lower in Black patients with STEMI or NSTEMI
Temporal trends and predictors of time to coronary angiography following non-ST-elevation acute coronary syndrome in the USA

Muhammad Rashid\textsuperscript{a,b}, David L. Fischman\textsuperscript{f}, Sara C. Martinez\textsuperscript{g}, Quinn Capers IV\textsuperscript{h}, Michael Savage\textsuperscript{f}, Azfar Zaman\textsuperscript{c}, Nick Curzen\textsuperscript{d}, Joie Ensor\textsuperscript{a}, Jessica Potts\textsuperscript{a}, Mohamed O. Mohamed\textsuperscript{a,b}, Chun Shing Kwok\textsuperscript{a,b}, Tim Kinnaird\textsuperscript{e}, Rodrigo Bagur\textsuperscript{a,i} and Mamas Mamas\textsuperscript{a,b}

- National US Inpatient Sample, 4.3 million NTEMI/USA pts, 2004-2014
- 57\% of pts received coronary angiography
- Endpoint: Early (within 24 hrs) vs Late (> 3d after admission) coronary angiography
Temporal trends and predictors of time to coronary angiography following non-ST-elevation acute coronary syndrome in the USA

Findings:
Independent predictors of LATE vs EARLY coronary angiography:

• Female gender
• African American race
• Weekend admission
• Lack of Private Insurance
III. Restoring Blood Flow to Blocked Leg Arteries

Which would you prefer?
Treating Poor Circulation

- **Arch Surg 1995 Apr; 130 (4): 381-6**
  - 19,236 Medicare pts with LE ischemia
  - African Americans compared to Whites:
    - More likely to undergo amputation
    - Less likely to undergo revascularization

  - 691,833 pts with LE ischemia
  - 66% underwent revasc. or amputation
  - Risk factors for amputation:
    - Black race (1.9x more likely than Whites)
    - Low income (1.4x more likely than high income)
Racial Disparities in Cardiovascular Care: A Review of Culprits and Potential Solutions

Quinn Capers IV • Zarina Sharalaya

Received: 28 January 2014 / Revised: 25 March 2014 / Accepted: 30 April 2014 / Published online: 23 May 2014
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Underrepresented in Medicine Minorities: Blacks, Hispanics, Native Americans, Native Alaskans/Pacific Islanders

- Underrepresented in Medical Profession Compared to US Population

- What are the Consequences of this Underrepresentation?

- What are Potential Benefits of Increasing URMs in Medicine?

- What are the Barriers?/How to Overcome?
Comparison of Hospital Mortality and Readmission Rates for Medicare Patients Treated by Male vs Female Physicians

Yusuke Tsugawa, MD, MPH, PhD; Anupam B. Jena, MD, PhD; Jose F. Figueras, MD, MPH; E. John Orav, PhD; Daniel M. Blumenthal, MD, MBA; Ashish K. Jha, MD, MPH

CONCLUSIONS AND RELEVANCE Elderly hospitalized patients treated by female internists have lower mortality and readmissions compared with those cared for by male internists. These findings suggest that the differences in practice patterns between male and female physicians, as suggested in previous studies, may have important clinical implications for patient outcomes.
Does Diversity Matter for Health? 
Experimental Evidence from Oakland*

Marcella Alsan†  Owen Garrick‡  Grant Graziani§

September 2018

Abstract
We study the effect of diversity in the physician workforce on the demand for preventive care among African-American men. Black men have the lowest life expectancy of any major demographic group in the U.S., and much of the disadvantage is due to chronic diseases, which are amenable to primary and secondary prevention. In a field experiment in Oakland, California, we randomize black men to black or non-black male medical doctors and to incentives for one of the five offered preventives — the flu vaccine. We use a two-stage design, measuring decisions about cardiovascular screening and the flu vaccine before (ex ante) and after (ex post) meeting their assigned doctor. Black men select a similar number of preventives in the ex ante stage, but are much more likely to select every preventive service, particularly invasive services, once meeting with a doctor who is the same race. The effects are most pronounced for men who have little experience obtaining routine medical care and among those who mistrust the medical system. Subjects are more likely to talk with a black doctor about their health problems and black doctors are more likely to write additional notes about the subjects. The results are most consistent with better patient-doctor communication during the encounter rather than discrimination or measures of doctor quality and effort. Our findings suggest black doctors could help reduce cardiovascular mortality by 16 deaths per 100,000 per year — leading to a 19% reduction in the black-white male gap in cardiovascular mortality.

*Funding provided by the National Institutes of Health (K12 ES000138, R33 ES017527).
▪ Patients: Black Males

▪ Physicians: White, Black, Asian Males

▪ Design: Patients first “met” MD by photo, then were asked which preventive care “procedures” they would have today (BMI measurement, BP measurement, Diabetes screening, Cholesterol screening)

▪ Patients then told that flu shots were “available” ($0, $5, or $10 incentive)
Next: Pts met assigned Drs (had already seen photo)

Patients then made final selection about which tests they would like (they could change their minds after discussing with MD)

Results:
- Diabetes screening (finger stick): 63% with BM MD vs 43% with WM MD
- Cholesterol screening (finger stick): 62% of BM MD vs 36% with WM MD
- Flu shot: 56% with BM MD vs 46% of BM with WM MD
The white and Asian Drs’ notes were short and referred to med recs only:
- “Weight loss.”
- “TB test.”
- “Anxiety.”

The black doctors often left more personal notes:
- “Needs food, shelter, clothing, job.”
- “‘Flu shot makes you sick,’ but he got one anyway.”
- “Subject yelled at me, but then agreed to get flu shot because I recommended it.”
- “Made patient laugh.”
Black men who saw white doctors wrote evaluation comments like:
- “It was a great and fast experience, doctor was great as well.”
- “very informative, very appreciated.” (comments described Dr’s competence)

Black men who saw black doctors wrote evaluation comments like:
- “The entire day made me feel very comfortable and relaxed”
- “cool doctor” (comments that described an emotional response)
Does Diversity Matter for Health?
Experimental Evidence from Oakland*

Marecella Almán†  Owen Carriker‡  Grant Graziani§
September 2018

Abstract

We study the effect of diversity in the physician workforce on the demand for preventive care among African-American men. Black men have the lowest life expectancy of any major demographic group in the U.S., and much of the disadvantage is due to chronic diseases, which are amenable to primary and secondary prevention. In a field experiment in Oakland, California, we randomized black men to block or non-black male medical doctors and to incentives for one of the five offered preventives — the flu vaccine. We use a two-stage design, measuring decisions about cardiovascular screening and the flu vaccine before (ex ante) and after (ex post) meeting their assigned doctor. Black men select a similar number of preventives in the ex ante stage, but are much more likely to select every preventive service, particularly invasive services, once meeting with a doctor who is the same race. The effects are most pronounced for men who have little experience obtaining routine medical care and among those who mistrust the medical system. Subjects are more likely to talk with a black doctor about their health problems and black doctors are more likely to write additional notes about the subjects. The results are most consistent with better patient-doctor communication during the encounter rather than discrimination or measures of doctor quality and effort. Our findings suggest black doctors could help reduce cardiovascular mortality by 16 deaths per 100,000 per year — leading to a 19% reduction in the black-white male gap in cardiovascular mortality.

“Our findings suggest black doctors could help reduce cardiovascular mortality by 16 deaths per 100,000 per year—leading to a 19% reduction in the black-white male gap in cardiovascular mortality.”
33 hospital-based physicians (White) completed two encounters with prognostically similar terminally ill black and white pts.

Detailed content analysis of audio and video recordings. Verbal and nonverbal communication scores with the black patient vs white patient.

Physicians’ verbal communication scores did not differ by patient race

Nonverbal communication scores did differ: they were significantly lower with the black patient than with the white patient

- Nonverbal communication:
  - touch (for non-diagnostic purposes)
  - open body position
  - proximity
  - eye contact
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Solve the equation for diversity ...
The Culprits …

1. Supply Chain
   1. Low numbers from HS graduation thru Med School
   2. Lack of visible role models

2. Admissions Committees/Program Directors
   1. Indifferent to recruiting (PDs)
   2. Place little importance on diversity when ranking (PDs)
   3. Unconscious Bias?

3. Culture in Academic Medicine
   1. Unconscious bias
   2. Inertia
2017 ACC Program Director’ Survey

- 110 respondents
  - 55% Adult General Cardiology
  - 45% Adult Subspecialty Cardiology
Q3 “Diversity is a driver of excellence in healthcare delivery, ” in other words, the more diversity represented amongst your health care providers, the better the care delivered to patients. Do you believe this statement is true?

Answered: 110   Skipped: 0
Q4 Can you quote 1-2 references that support this statement?

Answered: 110    Skipped: 0

- Yes
- No
Q8 Which statement most accurately describes your position with respect to increasing diversity in your program?

1) 21%: We want to Increase Diversity in Our Program, But Don’t Know How to Do it

2) 18%: We want to Increase Diversity in Our Program, and Have a Plan to Do it

3) 61%: Our Program is Diverse Already So Diversity Does not Need to be Increased
Top 3 Considerations When Making Your Rank List?

“Cigar smoke-filled backroom”
Top 3 Considerations When Making Your Rank List?

1. Clinical Skills/Acumen
2. Ability to Fit in Well/Team Player
3. Research Productivity
4. Strength of PD Letter
5. USMLE scores
6. Prestige of AMC
7. Communication Skills
8. Potential to be an Academic Leader
9. Humanitarian/Commitment to Society
10. Diversity/Ability to Enhance Cultural Competency of Program (6%)
The ABCs of Diversity Enhancement ...

1. Reach Back (into the Deep Pipeline)
2. Mentor Premed and Medical Students
3. Be Visible! (In person and Social Media)
4. Encourage Mentees to Enter Academic Medicine
5. Confront Implicit Bias
6. Engage “Gate Keepers”
7. Make Diversity/Ability to Enhance Cultural Competence a Top Priority When Making Rank List
8. JUST DO IT!! (And write about it so others can follow)
Step 1: Reach Back
“Kindergarten-to-Med School Pipeline”
Underrepresented Minorities

Kindergarten
4th-6th Grade
9th-12th Grade
HS to College
“College Premed” (Chemistry)
Admissions
URMs in Med School
Step 2: Mentor Premed and Medical Students
“Kindergarten-to-Med School Pipeline”
Underrepresented Minorities

Kindergarten

4th-6th Grade

9th-12th Grade

HS to College

URMs in Med School

“College Premed” (Chemistry)

Admissions
Step 3: Be Visible (In person/social media/etc)
Twitter Campaign to Inspire and Encourage

#BlackMenInMedicine
6 Year Data on % Women Matriculants at OSUCOM

% Women in Class

<table>
<thead>
<tr>
<th>Year</th>
<th>% Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>44%</td>
</tr>
<tr>
<td>2013</td>
<td>45%</td>
</tr>
<tr>
<td>2014</td>
<td>51%</td>
</tr>
<tr>
<td>2015</td>
<td>54%</td>
</tr>
<tr>
<td>2016</td>
<td>54%</td>
</tr>
<tr>
<td>2017</td>
<td>53%</td>
</tr>
<tr>
<td>2018</td>
<td>52%</td>
</tr>
</tbody>
</table>
“Take a Woman to the Cath Lab”
Step 4: Encourage Mentees to Go into Academic Medicine
Blacks and African-Americans

Represent 2% of male full-time faculty at MD-granting institutions

Image from AAMC Altering the Course, 2015.
Cardiologists of The Ohio State University Medical Center
Step 5: Confront Implicit Bias
Black-White IAT

- First question (explicit preference):

  “What best describes you?
  1. I prefer White Americans to Black Americans
  2. I like White Americans and Black Americans equally
  3. I prefer Black Americans to White Americans”

Then the IAT begins to test implicit bias
Implicit Bias Testing: White Preference
OSU COM Admissions Committee 2012

"White Preference" displayed on Implicit Bias Testing

- Explicit-Women: 10%
- Implicit-Women: 52%
- Explicit-Men: 10%
- Implicit-Men: 64%
Implicit Bias in Medical School Admissions

Conscious Mind: “I will Review Objective Measures”

Experiences
References
Personal Essay
Academic Record
Implicit Bias in Medical School Admissions

Unconscious Mind:
Black Face =

Danger
Fear
Violence
 Implicit Racial Bias in Medical School Admissions
Quinn Capers IV, MD, Daniel Clinchot, MD, Leon McDougle, MD, and Anthony G. Greenwald, PhD

Abstract

Problem
Implicit white race preference has been associated with discrimination in the education, criminal justice, and health care systems and could impede the entry of African Americans into the medical profession, where they and other minorities remain underrepresented. Little is known about implicit racial bias in medical school admissions committees.

Approach
To measure implicit racial bias, all 140 members of the Ohio State University College of Medicine (OSUCOM) admissions committee took the black–white implicit association test (IAT) prior to the 2012–2013 cycle. Results were collated by gender and student versus faculty status. To record their impressions of the impact of the IAT on the admissions process, members took a survey at the end of the cycle, which 100 (71%) completed.

Outcomes
All groups (men, women, students, faculty) displayed significant levels of implicit white preference; men ($d = 0.697$) and faculty ($d = 0.820$) had the largest bias measures ($P < .001$). Most survey respondents (67%) thought the IAT might be helpful in reducing bias, 48% were conscious of their individual results when interviewing candidates in the next cycle, and 21% reported knowledge of their IAT results impacted their admissions decisions in the subsequent cycle. The class that matriculated following the IAT exercise was the most diverse in OSUCOM’s history at that time.

Next Steps
Future directions include preceding and following the IAT with more robust reflection and education on unconscious bias. The authors join others in calling for an examination of bias at all levels of academic medicine.
Implicit Bias Reduction “Cheat Sheet” for Interview Days

Strategies to Reduce/Neutralize Implicit Bias

1. Common identity formation. Ask interviewee questions about interests and activities that you share in common (Focus on a shared, common identity between YOU and the interviewee)

2. Perspective taking. (Take the perspective of a member of the group against which you have the unconscious bias)

3. “Consider the opposite”. (When data seem to point to one conclusion, be sure to look for data supporting the opposite conclusion before making a final decision)

4. Counter-stereotypical exemplars. (Spend time with or focus on individuals you admire from groups against which you have a bias.)

Sources

Step 6: Engage the “Gatekeepers”
Annual Implicit Bias Training of Faculty Screeners and Admissions Committee
Step 7: Make Diversity Enhancement (Ability to Enhance Diversity or Cultural Competence) A Top Priority when Making Rank List
I.C. The program, in partnership with its Sponsoring Institution, must engage in practices that focus on mission-driven, ongoing, systematic recruitment and retention of a diverse and inclusive workforce of residents, fellows ... 

The program’s annual evaluation must include an assessment of the program’s efforts to recruit and retain a diverse workforce, as noted in V.C.1.c).(5).(c).
Make “Ability to Enhance Diversity/Cultural Competency of Program” **A Top Priority** When Ranking GME Candidates
Step 8: “Just Do It” (And Write About It!)
Figure 1. Trends in % women and URM in entering classes by year.
Successful Efforts to Increase Diversity in a Cardiology Fellowship Training Program

ALEX J. AUSEON, DO
ALBERT J. KOLLBASH JR, MD
QUINN CAPERS IV, MD

Abstract

Background: A large volume of literature has documented racial disparities in the delivery of cardiovascular care in the United States and that decreased access to procedures and undertreatment lead to worse outcomes. A lack of diversity among physicians is considered to be a major contributor. The fellowship training program in cardiovascular medicine at The Ohio State University Medical Center had never trained a fellow from a minority group underrepresented in medicine (URM) before 2007.

Intervention: In 2005, the fellowship made it a priority to recruit and match URM candidates in an effort to address the community’s lack of diversity and disparities in cardiovascular care.

Methods: Program leaders revised the recruitment process, making diversity a high priority. Faculty met with members of diverse residency programs during visits to other institutions, the focus of interview day was changed to highlight mentorship, additional targeted postinterview communications reached out to highly competitive applicants, and a regular mentoring program was constructed to allow meaningful interaction with URM faculty and fellows.

Results: Since these changes were implemented, the program has successfully matched a URM fellow for 5 consecutive years. Such candidates currently make up 4 of 16 total trainees (25%) in the fellowship in cardiovascular medicine.

Conclusions: The cardiovascular medicine fellowship training program at The Ohio State University was able to revise recruitment to attract competitive URM applicants as part of a concerted effort. Other educational programs facing similar challenges may be able to learn from the university’s experiences.
Summary

▪ Lack of Diversity in Medicine can be Harmful to Our Patients

▪ Enhanced Diversity in Medicine can Improve Pt Communication and Compliance (And Trust), And Save Lives

▪ Efforts to Enhance Diversity Must Be Intentional and Persistent

▪ The Time Has Come to Consider Diversity in Medicine a Mark of Excellence for Which Stakeholders Will be Held Accountable
Diversity in Medicine Saves Lives

The Lack of Diversity in Medicine Costs Lives …
Thank You!

Quinn Capers, IV, MD

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