Healthcare Disparities and COVID19: The Story Behind the Headlines

Clyde W. Yancy, MD, MSc
Professor of Medicine, Professor, Medical Social Science
Chief, Cardiology
Associate Director, Bluhm CV Institute
& Vice-Dean, Diversity & Inclusion
Northwestern University, FSM
& Deputy Editor, JAMA Cardiology
Learning Objectives

• Understand how COVID 19 has unmasked existing health care disparities
• Discuss how social determinants of health affect health care and health equity
• Describe opportunities to address social determinants of health with your patients
Speakers

• **Johanna Martinez, MD** – GME Director of Diversity and Health Equity, Zucker School of Medicine at Hofstra/Northwell

• **Robert O. Roswell, MD, FACC** - Associate Dean for Diversity and Inclusion, Zucker School of Medicine at Hofstra/Northwell

• **Herman A. Taylor, Jr., MD, FACC** – Director, Cardiovascular Research Institute, Morehouse School of Medicine

Moderator

**Clyde W. Yancy, MD, MACC** - Vice Dean for Diversity and Inclusion, Northwestern University School of Medicine
The color of coronavirus: COVID-19 deaths by race and ethnicity in the U.S.

Updated May 27, 2020

• Race/Ethnicity data are known in 89% of COVID19 deaths
• Only 40 states are releasing public health data

“The latest overall COVID-19 mortality rate for Black Americans is 2.4 times as high as the rate for Whites and 2.2 times as high as the rate for Asians and Latinos.”

Per 100,000 population
• 1 in 1,850 Black Americans has died (or 54.6 deaths per 100,000)
• 1 in 4,000 Latino Americans has died (or 24.9 deaths per 100,000)
• 1 in 4,200 Asian Americans has died (or 24.3 deaths per 100,000)
• 1 in 4,400 White Americans has died (or 22.7 deaths per 100,000)

• “If they had died of COVID-19 at the same rate as White Americans, about 13,000 Black Americans, 1,300 Latino Americans and 300 Asian Americans would still be alive.”

Data from: American Public Media Research Lab; accessed 06/02/2020
The color of coronavirus: COVID-19 deaths by race and ethnicity in the U.S

Data from: American Public Media Research Lab; accessed 06/02/2020

* Includes data from Washington, D.C., and the 40 states of Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington and Wisconsin. States employ varying collection methods regarding ethnicity data. Denominator is built from data aggregated from each state, aligned with their method. Comparable rates could not be calculated for Indigenous people, due to so few states reporting data.
Defining a Crisis Point:

COVID-19 and African Americans

Clyde W. Yancy, MD, MSc

The US has needed a trigger to fully address health care disparities; COVID-19 may be that bellwether event.
What Happens Next?

How do we level set at-risk communities? Is race or ethnicity the issue?
Appropriate Public Health Initiatives; Ubiquitous Testing in High Risk Communities

- Testing: targeting communities with higher infection rates
- Follow the SVI – Social Vulnerability Index
  - https://svi.cdc.gov/
  - “…resilience of communities when confronted by external stresses on human health, stresses such as natural or human-caused disasters, or disease outbreaks…”
- Uses 15 U.S. census variables at tract level
- Possible scores range from 0 (lowest vulnerability) to 1 (highest vulnerability).
COVID: Investing in black lives and livelihoods

The Economic Portrait: SUMMARY

• “The COVID-19 pandemic is already a generation-defining crisis. Because it affects all social systems, it heightens preexisting structural challenges that black Americans face. But a trial can also be an opportunity. Our society can consider how we can respond to the COVID-19 crisis and fallout to fortify black communities and help them do more than simply recover. We can use the urgency of the pandemic to build more equitable systems that increase the long-term resilience of black Americans, communities, and institutions. As we progress toward this goal, the US economy could benefit to the tune of $1.5 trillion.”14
Healthcare Disparities and COVID19: The Story Behind the Headlines

Robert Roswell, MD, FACC, FACP
Associate Dean for Diversity, Equity & Inclusion
Associate Professor of Cardiology & Science Education
Zucker School of Medicine at Hofstra/Northwell

Director, Cardiac ICU
Associate Cardiology Fellowship Director
Lenox Hill Hospital, Northwell Health
COVID-19 & Health Literacy

Overview
COVID-19 (Coronavirus) can make your oxygen levels very low.

Descripción general
El COVID-19 (coronavirus) puede bajar mucho sus niveles de oxígeno.

Treatment
You must keep your oxygen mask on.

Tratamiento
Debe dejarse puesta la mascarilla de oxígeno.
Downstream → Upstream Thinking
Total Health: Do We Address All Factors for Health?

Source: Kaiser Permanente, County Health Ranking Model
5 Broad Areas of Social Determinants of Health
What can I do as a doctor?

- As physicians, you’ll pull many drowning people from the river.
- SDH play an important role in determining total health.
- “Upstream” factors are often relevant to individual patient care and outcomes “downstream”.
- Physicians & other health professionals can and do advocate for structural changes to improve social and health equity, ACC Political Action Committee.
Race, Risk and the Roots of Vulnerability in the COVID-19 Pandemic
COVID-19 Outcome Disparities – The Unsurprising Tragedy

“...One thing we must of course expect to find, and that is a much higher death rate at present among Negroes than among whites ... They have in the past lived under vastly different conditions and they still live under different conditions...”

W.E.B. Du Bois, 1899
The Philadelphia Negro, Chapter X, page 148

“...independent of traditional risk factors, African American individuals ... have a 2-3 fold increase in ... risk of developing clinically manifest CVD...

“..even after adjusting for relevant potentially confounding variables...”

“Black Americans are twice as likely to experience a stroke as non-Hispanic whites ...”

..... the relative risk of admission to a high-mortality hospital after adjusting for [relevant covariates]... in the logistic regression models an indicator variable for black race, was statistically significant...

“...even after controlling for TNM stage, ...adjusted for both disease- and socioeconomic-related factors, black race [equalled poorer outcome...]"
Age-adjusted rates of lab confirmed COVID-19 non hospitalized cases, estimated non-fatal hospitalized cases, and patients known to have died 100,000 by race/ethnicity group as of April 16, 2020

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Non-hospitalized</th>
<th>Non-fatal hospitalized</th>
<th>Known to have died</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black/African American</td>
<td>335.5</td>
<td>271.7</td>
<td>92.3</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>271.6</td>
<td>198.6</td>
<td>74.3</td>
</tr>
<tr>
<td>White</td>
<td>190.4</td>
<td>114.5</td>
<td>45.2</td>
</tr>
<tr>
<td>Asian</td>
<td>95.1</td>
<td>82.2</td>
<td>34.5</td>
</tr>
</tbody>
</table>
COVID-19 Patients by Race-Hospitalized

Among Blacks:
Younger; Female predominance; 2x Medicaid; Low income area (high SVI); high obesity, diabetes, hypertension; acute and CKD; fever, SOB, cough, abdominal sx


<table>
<thead>
<tr>
<th>Characteristic</th>
<th>White Non-Hispanic (N=319)</th>
<th>Black Non-Hispanic (N=1063)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age — yr</td>
<td>69.2±16.6</td>
<td>60.5±14.8</td>
</tr>
<tr>
<td>Female sex — no. (%)</td>
<td>127 (39.8)</td>
<td>578 (54.4)</td>
</tr>
<tr>
<td>Charlson Comorbidity Index score</td>
<td>1.0±1.8</td>
<td>1.3±2.2</td>
</tr>
<tr>
<td>Insurance — no. (%)</td>
<td>266 (82.6)</td>
<td>393 (37.0)</td>
</tr>
<tr>
<td>Commercial</td>
<td>3/266 (16.2)</td>
<td>2/393 (3.1)</td>
</tr>
<tr>
<td>Medicare</td>
<td>2/256 (23.4)</td>
<td>1/210 (0.8)</td>
</tr>
<tr>
<td>Medicaid</td>
<td>4/232 (18.0)</td>
<td>2/177 (9.6)</td>
</tr>
<tr>
<td>Self-pay or other</td>
<td>3/244 (29.9)</td>
<td>3/311 (33.3)</td>
</tr>
<tr>
<td>Residence in low-income area — no. (%)</td>
<td>3/185 (74.6)</td>
<td>4/487 (60.9)</td>
</tr>
<tr>
<td>Vital signs at admission</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood pressure — mm Hg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systolic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diastolic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory rate =24 breaths/min — no. (%)</td>
<td>235 (73.7)</td>
<td>803 (75.5)</td>
</tr>
<tr>
<td>Temperature ≥38°C — no. (%)</td>
<td>176 (55.2)</td>
<td>741 (69.7)</td>
</tr>
<tr>
<td>Oxygen saturation &lt;94% — no. (%)</td>
<td>278 (87.1)</td>
<td>895 (84.2)</td>
</tr>
<tr>
<td>White-cell count &lt;4000/μl — no. (%)</td>
<td>81 (25.4)</td>
<td>198 (18.6)</td>
</tr>
<tr>
<td>Absolute lymphocyte count &lt;1000/μl — no. /total no. (%)</td>
<td>191 (310 (61.6)</td>
<td>520 (1040 (50.0)</td>
</tr>
<tr>
<td>Platelet count &lt;150,000/μl — no. (%)</td>
<td>116 (36.4)</td>
<td>277 (26.1)</td>
</tr>
<tr>
<td>Sodium &lt;130 mmol/liter — no. (%)</td>
<td>36 (11.3)</td>
<td>42 (3.9)</td>
</tr>
<tr>
<td>Creatinine &gt;1.5 mg/dl — no. (%)</td>
<td>85 (26.6)</td>
<td>422 (39.7)</td>
</tr>
<tr>
<td>Total bilirubin ≥1.2 mg/dl — no. (%)</td>
<td>43 (13.5)</td>
<td>126 (11.9)</td>
</tr>
<tr>
<td>Aspartate aminotransferase &gt;40 U/liter — no. (%)</td>
<td>176 (55.2)</td>
<td>659 (62.0)</td>
</tr>
<tr>
<td>Acute renal failure</td>
<td>34 (10.7)</td>
<td>163 (15.3)</td>
</tr>
<tr>
<td>Acute hepatic injury</td>
<td>2 (0.6)</td>
<td>2 (0.2)</td>
</tr>
<tr>
<td>Cardiomyopathy or congestive heart failure</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Hypoxic respiratory failure</td>
<td>79 (24.8)</td>
<td>270 (25.4)</td>
</tr>
</tbody>
</table>
Ochsner Health study on Race and COVID-19

- Though Blacks represent 31% of the patients routinely cared for by Ochsner Health, they were 76.9% of Covid-19–positive patients (through [date]) hospitalized.

- Higher prevalence of obesity, diabetes, hypertension, and chronic kidney disease at baseline.

- Black race, increasing age, a higher score on the Charlson Comorbidity Index, public insurance (Medicare or Medicaid), residence in a low-income area, and obesity were associated with increased odds of hospital admission.

- Blacks were overrepresented among all patients who died in the hospital (70.6%).

- However, black race was not associated with higher in-hospital mortality than white race, after adjustment for differences in sociodemographic and clinical characteristics on admission.

Price-Haywood et al, NEJM, May 27, 2020
National Health Service (England) Study

- Over 17 Million patient records
- 5683 deaths attributed to COVID-19

medRxiv preprint, May 7, 2020
National Health Service Study

- “...[others] have reasonably speculated that this[disparity] might be due to higher prevalence of problems such as CVD.... Our findings show that this is only a small part of the excess risk [of death in hospital]....”

medRxiv preprint, May 7, 2020

<table>
<thead>
<tr>
<th>Ethnicity*</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>1.00 (ref)</td>
</tr>
<tr>
<td>Mixed</td>
<td>1.83 (1.33-2.51)</td>
</tr>
<tr>
<td>Asian or Asian British</td>
<td>1.95 (1.73-2.18)</td>
</tr>
<tr>
<td>Black</td>
<td>2.17 (1.84-2.57)</td>
</tr>
<tr>
<td>Other</td>
<td>1.34 (1.03-1.74)</td>
</tr>
</tbody>
</table>
Case Rate by Select Tribal Nations and States

State rate data obtained from John Hopkins data for May 11, 2020. This figure displays tribal nations and states with a total of 200 reported cases or more per 100,000 people.
The question of biological bases for COVID-19 disparities

• Inflammatory response differences by race
• Sarcoidosis prevalence
• Sickle Cell Disease/trait
• ACE-2 receptor differences

• Speculative
• Emerging evidence
• Genetic heterogeneity of groups suffering disparate (worse) outcomes (Asian British, African American, Native American, etc.)
Concluding Thoughts

- All studies to date show race-related disparities in rates of infection and death
- Near equal in-hospital case-fatality rates
- Structural realities can deprive access as well as compel behaviors that put health at risk
- Possible “super-spreader” events are occurring nationwide

- Focus on detection and reducing infections
- Guideline-based care for co-morbidities along with up to date COVID-19 care
- Successful discharge not the end of the story (disparities can re-emerge in home and service-oriented work settings)
“Two days after that parade, every hospital bed in Philadelphia was filled and it was a complete disaster and it was a disaster because the authorities ignored the advice to cancel this parade.”
Demonstration to Save Black Lives

May 29, 2020
Rethinking your social history: Tips to address health disparities at the bedside

Johanna Martinez, MD, MS
GME Director of Diversity and Health Equity
Associate Professor of Medicine
Zucker School of Medicine at Hofstra/Northwell

Director, Hofstra-Northwell Medical Legal Partnership
Case: Mr Brown (N=1)

58 yo, previously healthy man admitted with hypoxemic respiratory failure and chest pain. On admission he was an 100% NRB and was found to have multi-end organ damage. His presenting labs included:

- Hyponatemia 115
- Anemia 7.5
- Troponin 904
- CRP 185

Hospital Course: Despite receiving hydroxychloroquine, steroids and hours of proning, oxygenation worsened. Offered Remdesivir.

Developed DVT required anticoagulation.

On discharge eager to go back to work. Unable to home quarantine. Possibly losing his job and health insurance.
IMPACT OF SOCIAL DETERMINANTS OF HEALTH

Social determinants of health have tremendous affect on an individual’s health regardless of age, race, or ethnicity.

- **Socioeconomic Factors**:
  - Education
  - Job Status
  - Family/Social Support
  - Income
  - Community Safety

  *40%*

- **Physical Environment**

  *10%*

- **Health Behaviors**
  - Tobacco Use
  - Diet & Exercise
  - Alcohol Use
  - Sexual Activity

  *30%*

- **Health Care**
  - Access to Care
  - Quality of Care

  *20%*

**SDOH Impact**

- **20 percent** of a person’s health and well-being is related to access to care and quality of services.

- The physical environment, social determinants and behavioral factors drive **80 percent** of health outcomes.

Contributors to Health Disparities

- Genetics
- Individual Factors
- Provider factors
- Health Care System Factors
- Laws/Regulations
- Social & Environmental Factors, both current and historical
Tips to address health disparities at the bedside

• Routinely ask about social needs and cultural preferences
• Check your assumptions, judgements and bias
• Don’t forgo using an interpreter
• Incorporate a patient’s social needs into your treatment plan
• Finish with teachback
• Leverage your power, you are in a position to advocate for your patient