Covid-19: Challenges and Opportunities of Addressing Health Equity in MA

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Deaths of Covid-19

Deaths Through October 13, 2020

Deaths per/100,000

White: 54.4
Black: 108.4
Hispanic: 73.5
Asian: 45.4

Covid-19 Deaths by Race

• If all racial/ethnic groups had died at the same rate as white Americans, at least:
  - 21,800 Black Americans
  - 11,400 Latino Americans, and
  - 750 Indigenous Americans
would still be alive

Around the Globe, Race Matters for Health
Infant Mortality in the U.S., 2015

- White: 4.9
- Black: 11.3
- American Indian: 8.6
- Hispanic: 5
- Asian/Pl: 4.1

Health United States, NCHS, 2017
Infant Mortality by Ethnicity
England 2014

Deaths per 1,000 live births. Public Health England, 2018
There are large Inequities in Health by Socioeconomic Status (SES)
Relative Risks of All-Cause Mortality by Household Income Level: U.S. Panel Study of Income Dynamics

P. McDonough, Duncan, Williams, & House, AJPH, 1997
There are large Racial Inequities in SES in the U.S.
Racial Differences in Income are Substantial:

- Whites: $70,642
- Asians: $87,194
- Hispanics: $51,450
- Am Indians*: $41,882
- Blacks: $41,361

U.S. Census Bureau, Semega et al., 2019; *for 2017; US Census Bureau, ACS, 2017
Median Household Income and Race, 2018

Racial Differences in Income are Substantial:

<table>
<thead>
<tr>
<th>Race</th>
<th>Income Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whites</td>
<td>1 dollar</td>
</tr>
<tr>
<td>Asians</td>
<td>1.23 dollar</td>
</tr>
<tr>
<td>Hispanics</td>
<td>73 cents</td>
</tr>
<tr>
<td>Am Indians*</td>
<td>59 cents</td>
</tr>
<tr>
<td>Blacks</td>
<td>59 cents</td>
</tr>
</tbody>
</table>

U.S. Census Bureau, Semega et al., 2019; * For 2017; US Census Bureau, ACS, 2017
Large racial gaps in income markedly understate the racial gap in economic status
Wealth versus Income

- Home ownership
- Other real estate
- Checking, savings, money market accounts, CDs
- Vehicles
- Businesses
- IRA/Keogh, stocks, bonds, mutual funds, treasury bills
- Subtracting mortgages and debt
Median Wealth and Race, 2016

For every dollar of wealth that Whites have, Blacks have 10 cents, Latinos have 12 cents, and Other Races have 38 cents.

Dettling et al., FEDS Notes, Federal Reserve Board (SCF), 2017
Relative Wealth by Ethnic Group, 2014-16

Racial Differences in Wealth are Substantial:

1 pound
95 pence
50 pence
20 pence
10 pence
10 pence

White British
Indian
Pakistani
Black Caribbean
Black African
Bangladeshi

ONS Wealth and Assets Survey Omar Khan, Runnymede, 2020
Added Burden of Race
Life Expectancy at Age 25 Based on Level of Education

6.4-year gap

5-year gap overall

5.3-year gap

Murphy, NVSS 2000; Braveman et al. AJPH; 2010, NLMS 1988-1998
Blacks with a college degree have a lower life expectancy than Whites with only a high school degree.

Murphy, NVSS 2000; Braveman et al. AJPH; 2010, NLMS 1988-1998
Covid-19 Deaths, Relative to Whites

Fully Adjusted: age, urbanicity, IMD, HH, education, HH tenure, health

Office of National Statistics, May 7, 2020
Could racism be a critical missing piece of the puzzle to understand the patterning of racial disparities in health?
Racism Defined

- Racism: an organized system that,
  - categorizes and ranks
  - devalues, disempowers, and
  - differentially allocates opportunities/resources

- The development of racism is typically undergirded by an ideology of inferiority in which some population groups are regarded as being inferior to others

- This leads to the development of
  - negative attitudes/beliefs (prejudice and stereotypes) to out-groups, and
  - differential treatment (discrimination) by individuals and social institutions

Bonilla-Silva, 1996; Williams 2004
Individual vs Institutional/Structural/Systemic Discrimination
### Institutional Discrimination: Waiting to Vote

**Average number of minutes, 2012 Presidential Election**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Average Time (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Americans</td>
<td>23</td>
</tr>
<tr>
<td>Latinos</td>
<td>19</td>
</tr>
<tr>
<td>Asian Americans</td>
<td>15</td>
</tr>
<tr>
<td>Native Americans</td>
<td>13</td>
</tr>
<tr>
<td>Whites</td>
<td>12</td>
</tr>
</tbody>
</table>

Cooperative Congressional Election Study, 2012
Institutional Processes

• Length of time waiting to vote linked to the residence of the voter and the policies and procedures (budgeting and space constraints and local administrative procedures) linked to place:

• How many voters being served by a polling site?

• How many precincts in a given area?

• Staffing of a precinct affects how long it takes to vote
Residential Segregation is an example of Structural/Institutional Racism that has pervasive adverse effects on health and development.
Residential Segregation is a striking legacy of racism

- As is the forced removal and relocation of indigenous peoples
- The institutionalized isolation and marginalization of racial populations has adversely affected life chances in multiple ways
Racial Segregation Is ...

• One of the most successful domestic policies of the 20th century

• "the dominant system of racial regulation and control" in the U.S

John Cell, 1982
How Segregation Works

Segregation is like a toxic emission produced by an industrial plant. Like carbon monoxide it is often imperceptible but causes illness and death as valuable resources disappear:

- Quality schools
- Safe playgrounds
- Good jobs
- Healthy air, water, etc.
- Safe housing
- Transportation
- Healthcare
Racial Differences in Residential Environment

In the 171 largest cities in the U.S., there is not even one city where whites live in equal conditions to those of blacks.

“The worst urban context in which whites reside is considerably better than the average context of black communities.”

Sampson & Wilson 1995
Neighborhood Opportunity Index

1. **Institutions**: number & quality of schools, early childhood centers

2. **Influences shaping norms and expectations**: (high school graduation rate, adults with high skill jobs)

3. **Economic Resources**: income, home ownership, employment, public assistance

4. **Environmental Quality**: air, water, soil pollution, hazardous waste sites

5. **Resources for health**: green space, healthy food outlets, walkability

Acevedo-Garcia, 2020, Diversitydatakids.org
Percentage of Children at Neighborhood Opportunity Level

100 largest Metropolitan areas

Percent at opportunity level

<table>
<thead>
<tr>
<th>Very Low/Low</th>
<th>Moderate</th>
<th>High/Very High</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH White</td>
<td>Black</td>
<td>Hispanic</td>
</tr>
<tr>
<td>18</td>
<td>17</td>
<td>58</td>
</tr>
<tr>
<td>67</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>65</td>
<td>23</td>
<td>62</td>
</tr>
</tbody>
</table>

D. Acevedo-Garcia 2020, Diversitydatakids.org
Segregation Creates the Large Racial/Ethnic Differences in SES
Residential Segregation and SES

A study of the effects of segregation on young African American adults found that the elimination of segregation would erase black-white differences in:

- Earnings
- High School Graduation Rate
- Unemployment

And reduce racial differences in single motherhood by two-thirds

David Cutler & EL Glaeser, Quarterly J Economics, 1997
An Intergenerational Study

• Inequity usu. studied in one generation
• Black boys have lower earnings than white boys in 99% of Census tracts in America (controlling for parental income)
• Why? They live in neighborhoods that differ in access to opportunity
• Black boys do well in neighborhoods with good resources (low poverty) and good race-specific factors (high father presence, less racial bias)
• The problem: there are essentially no such neighborhoods in America

Raj Chetty et al, “Race & Econ Opportunity” NBER Working Paper, 2018
Inequities by Design

• Racial inequities in SES that matter for life & health do not reflect a broken system.

• Instead, they reflect a carefully crafted system, functioning as planned – successfully implementing social policies, many of which are rooted in racism.

• They are not accidents or acts of God.

• Racism has produced a truly “rigged system.”
What Low Economic Status Means

We are in the same storm but in different Boats
Low Income and Covid-19

• Not everyone can work from home

• For low-wage, non-salaried workers with unpredictable and unstable hours, working from home is a luxury

• In poor neighborhoods, with overcrowded housing, social distancing is not a viable option.

• Low income & minority workers overrepresented among essential workers – our drivers, building maintenance staff and grocery store employees.

• People who struggle financially often struggle to live a healthy life
Race/Ethnicity, Stress and Health

Lower economic status, living in disadvantaged, segregated, neighborhoods and exposure to racism leads to higher levels of:

1. Economic Stressors
2. Psychosocial Stressors
3. Racial Discrimination
4. Physical & Chemical Stressors

Williams, J Health and Social Behavior, 2016
Air Pollution and Covid-19

• Air pollution is associated with hypertension and asthma
• These are linked to more severe cases of Covid-19
• Air pollution linked higher death rates from Covid-19
• Poor & minority communities at higher risk (power plants, industries, car and truck emissions)

Xiaao Wu et al MedRiv, 2020
“... Discrimination is a hellhound that gnaws at Negroes in every waking moment of their lives declaring that the lie of their inferiority is accepted as the truth in the society dominating them.”

Martin Luther King, Jr. [1967]
Experiences of discrimination are a source of Toxic Stress
Every Day Discrimination

In your day-to-day life how often do these happen to you?

- You are treated with less courtesy than other people.
- You are treated with less respect than other people.
- You receive poorer service than other people at restaurants or stores.
- People act as if they think you are not smart.
- People act as if they are afraid of you.
- People act as if they think you are dishonest.
- People act as if they’re better than you are.
- You are called names or insulted.
- You are threatened or harassed.

What do you think was the main reason for these experiences?

Williams, Yu, Jackson, Anderson, J Health Psychology, 1997
## Everyday Discrimination & Adult Health

<table>
<thead>
<tr>
<th>Incident</th>
<th>Nicotine dependence</th>
<th>CAC (coronary artery calcification)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metabolic Syndrome</td>
<td>Binge eating</td>
<td>IMT (intima media thickness)</td>
</tr>
<tr>
<td>CVD outcomes</td>
<td>Smoking &amp; drug use</td>
<td>Visceral fat</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>At-risk drinking</td>
<td>HRV</td>
</tr>
<tr>
<td>Type 2 diabetes</td>
<td></td>
<td>Atrial fibrillation</td>
</tr>
</tbody>
</table>

| Adult onset asthma             |                      | Inflammation (CRP, IL-6, e-selectin) |
| Nocturnal amb. BP              |                      | Cortisol                             |
| Cognitive function             | Sleep duration       | Telomere length                      |
| Increases in SBP, DBP          | Sleep quality        | Allostatic load                      |

| Waist circumference            | Breast cancer screening | DSM Disorders |
| Obesit[y                        | Cervical cancer screening | Emotional Distress |
| Weight gain                    | Lower adherence         | Well-being |
|                                | Delays in seeking       | Changes in personality |
|                                | treatment               |                       |

| Increases in SBP, DBP          | Sleep duration       | Inflammation (CRP, IL-6, e-selectin) |
|                                | Sleep quality        | Cortisol                             |
| Williams, Lawrence, Davis & Vu, Health Services Research, 2019 | Telomere length | Allostatic load            |
The Consequences

“Accelerated Aging”
“Premature Aging”
Biological “Weathering”
Earlier Onset of Chronic Disease
Earlier Onset of High Blood Pressure

Behavioral Risk Factor Surveillance System, 2015
Earlier Onset of Diabetes

Behavioral Risk Factor Surveillance System, 2015
<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>57%</td>
</tr>
<tr>
<td>Obesity</td>
<td>42%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>34%</td>
</tr>
<tr>
<td>Heart Disease (CAD; CHF)</td>
<td>18%</td>
</tr>
<tr>
<td>Respiratory disease*</td>
<td>17%</td>
</tr>
<tr>
<td>Cancer</td>
<td>6%</td>
</tr>
</tbody>
</table>

Safiya Richardson et al. JAMA, April 22, 2020 *(Asthma 9%, COPD 5%, sleep apnea 3%)*
What Can We Do?
Strategy

Short-term Economic Relief

Minimizing the burden of economic stress on the health of the most vulnerable
Depth of Economic Collapse and Recession

• Only 25% of workers laid off or furloughed at the height of the pandemic lockdown received unemployment benefits.

• Unequal Recession: Whites have recovered more than half of jobs lost between April & February;

• Blacks have recovered a third

• Hispanics saw largest job losses and most ground to make up

• Include wealth in assessment of need

Strategy
Innovative Use of Medical Care to Address Racial/ethnic Inequities in Health
Colorectal Cancer (CRC) Intervention

- State of Delaware fully funds a CRC screening program promoting colonoscopy in 2002
- Provides reimbursement for uninsured residents up to 250% of Federal poverty level (FPL)
- Other state residents eligible through other insurance
- Cancer screening nurse navigator system added in 2004, at each of the 5 acute care hospital sites
- Cancer treatment program added in 2004: covers costs of cancer care for 2 years for newly diagnosed uninsured if income under 650% FPL
- Special outreach efforts for African Americans

Eliminated screening disparities

3 – year average, age adjusted

Equalized Incidence rates

3-year average, age adjusted

Near Elimination of Mortality Difference

3 – year average, age adjusted

Colorectal Cancer: Cost Savings

- The annual bill for the screening and the treatment program was $7 million
- The annual savings from reduced incidence of Colorectal Cancer was $8.5 million

Strategy

Renewed Investments in Eliminating Inequities in the Receipt of High Quality Care
Eliminating Inequities in the Receipt of High Quality Care
Building More Health into the Delivery of Medical Care

Diversifying the Workforce to meet the Needs of all Patients
Race of MD Newborn Survival

- Study of 1.8 million hospital births in Florida from 1992 to 2015
- When cared for by white doctors, black babies are 3 times more likely than white newborns to die in hospital
- Disparity cut in half when black babies are cared for by a black doctor
- Biggest drop in deaths in complex births and in hospitals that deliver more black babies
- No difference between MD race & maternal mortality

Brad Greenwood, et al. PNAS, 2020
Strategy

Addressing Election-related Stressors to minimize pathogenic consequences of socio-political stress
2016 Election Led to Heart Attacks & Strokes

• Hospitalization rate for heart attacks & strokes was 1.62 times higher in the two days after the 2016 presidential election, compared with the same two days in the prior week.

• Stress linked to political campaigns, rhetoric and election outcomes can directly harm health.

M. Mefford, M.A. Mittleman, … E. Mostofsky, & D.R. Williams, PNAS, 2020
Long-term Strategy #2

Create Communities of Opportunity to minimize, neutralize and dismantle the systems of racism that create inequities in health
Communities of Opportunity

- Ensure access to quality care
- Invest in early Childhood
- Reduce Childhood Poverty
- Enhance Income and Employment Opportunities for Youth and Adults
- Improve Neighborhood and Housing Conditions
- Provide Care that Addresses the Social context
- Raise Awareness levels of Racial Inequities and Build Political Will to Address them

David R Williams & Lisa Cooper, Int J Environmental Res & Public Health, 2019
Communities of Opportunity

Improve Neighborhood and Housing Conditions
Purpose Built Communities

• Based on efforts in Atlanta’s East Lake district

• Purpose Built Communities uses integrative strategies including cradle-to-college educational opportunities, mixed-income housing, early child development programs, employment support and recreational opportunities

• Community engagement and philanthropy

• **Key:** addressing all of the challenges faced by disadvantaged communities simultaneously

• Purpose Built Communities in Atlanta, New Orleans, Indianapolis, Charlotte, among others
Implementing the Purpose Built Model

Strong local leadership. A proven national model. Best in class partners.
East Lake Meadows - 1995

**Safety**
- 18x national crime rate
- 90% of families victims of a felony each year
- $35 million a year drug trade

**Housing**
- 100% public housing
- 1400 residents in 650 apartments
- 40% of units unlivable

**Employment**
- 13% employment
- 59% of adults on welfare
- Median income of ~$4,500

**Education**
- One of lowest performing schools in Georgia
- 5% of 5th graders meet state math standards
- 30% graduation rate
Villages of East Lake - Present

**Safety**
- 73% reduction in crime
- 90% lower violent crime

**Housing**
- High-quality, privately managed housing
- Mixed-income (50% public housing, 50% market rate)
- 1400 residents in 542 apartments

**Employment**
- 75% employment in public housing, remainder in job training, elderly or disabled
- Median income of ~$15k in public housing households

**Education**
- ~1500 in Pre-K through 10th
- 98% meet or exceed state standards
- A top performing school in Atlanta and the state
Principles of Purpose Built Communities

• Address all challenges faced by poor communities simultaneously
• (work across silos of education, housing, public safety, child care, employment, and nutrition)
• Comprehensive, integrated, place-based solutions
• Independently run, cradle-to-college high-quality education
• Quality mixed-income housing
• Affordability for low-income households
• Services: employment support, social services, workforce development, recreation, wellness

Long-term Strategy #3

We need to Raise Awareness levels of Racial Inequities and Build Political Will to Address them
What Is Holding Us Back?

What are the Barriers we have to Address?
What elephant?
3 Communication Challenges

1. We need to raise awareness levels of the problem of inequities in health.

2. We need to build the science base that will guide us in developing the political will to address racial and SES inequities in health.

3. We need to build empathy, that is, identify how to tell the story of the challenges of the disadvantaged in ways that emotionally connect and resonate with the public.
“The most difficult social problem in the matter of Negro health is the peculiar attitude of the nation toward the well-being of the race. There have... been few other cases in the history of civilized peoples where human suffering has been viewed with such peculiar indifference.” W.E. B. Du Bois, 1899 [1967] p.163
Recent Review on Empathy Gap

• Studies of empathic responses in brain activity when viewing suffering of persons of one’s own race vs. members of another race
• Racial ingroup bias consistently found in brain imagery studies in Europe, Africa, Asia, and the U.S.
• Stronger empathic neural response to the pain of same race versus other race individuals, using a variety of stimuli
• This racial bias in neural responses more consistent than self-reports of empathy

Han, S. Trends Cogn. Sci. 2018
Reducing Social Inequities in Health

Why Should We Care?
Costs of Inaction

Socioeconomic and Racial Disparities in health are really costly to our society
Economic Gains from Reducing SES Health Inequities

If all adult Americans had the better health of college graduates, they would live longer and healthier lives and these improvements would translate into economic gains $1.007 trillion annually.

Total Costs of Racial Disparities, 2003-2006

- Medical Care Costs = $229.4 Billion
- Lower worker productivity & premature death costs = $1,008 Trillion
- Total Costs = $1.24 Trillion
- More than GDP of India (12th largest economy)
- $309.3 Billion annual loss to the U.S. economy
- Doing nothing has a cost that we should not continue to bear

LaVeist, Gaskin, et al., Int J of Health Svcs Research, 2010
If we eliminate Racial Inequities by 2050, we would have

- Additional $8 trillion U.S. GDP (more than GDP of every country, except US & China)
- Additional $3.3 trillion in earnings (by closing gaps in productivity & opportunity)
Annual **Additional** Economic Benefits - 2

- **Additional $2.6 trillion** in consumer spending ($330B on food, $860B on housing, $440B on cars & transportation and $90B on clothes & services)

- **Additional $1.4 trillion** federal tax revenues and **$325B** state/local tax revenues

- **Increase of 0.5%** in long-term annual growth rate of US economy

Business Case for Racial Equity, Altarum Institute, WK Kellogg Foundation, 2018
CITI Group: Racism Cost $16 Trillion GDP Loss

4 Key racial gaps:

- $13 trillion loss in business revenue; discriminatory lending to Black entrepreneurs (6.1 million jobs not generated as a result)
- $2.7 trillion in income loss due to disparities in wages
- $218 billion loss (2 decades of discrimination in housing credit)
- $90 to $113 billion in lifetime income loss due to discrimination in accessing higher education

NPR, CITI Group Report
"True compassion is more than flinging a coin to a beggar; it understands that an edifice which produces beggars needs restructuring.”
“Each time a man stands up for an ideal, or acts to improve the lot of others, or strikes out against injustice, he sends forth a tiny ripple of hope, and those ripples build a current which can sweep down the mightiest walls of oppression and resistance.”

- Robert F. Kennedy
Further Reading