## COVID-19 Cases, Hospitalization, and Death by Race/Ethnicity

### Factors that Increase Community Spread and Individual Risk

<table>
<thead>
<tr>
<th></th>
<th>American Indian or Alaska Native, Non-Hispanic persons</th>
<th>Asian, Non-Hispanic persons</th>
<th>Black or African American, Non-Hispanic persons</th>
<th>Hispanic or Latino persons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cases</strong></td>
<td>2.8x higher</td>
<td>1.1x higher</td>
<td>2.6x higher</td>
<td>2.8x higher</td>
</tr>
<tr>
<td><strong>Hospitalization</strong></td>
<td>5.3x higher</td>
<td>1.3x higher</td>
<td>4.7x higher</td>
<td>4.6x higher</td>
</tr>
<tr>
<td><strong>Death</strong></td>
<td>1.4x higher</td>
<td>No Increase</td>
<td>2.1x higher</td>
<td>1.1x higher</td>
</tr>
</tbody>
</table>

Race and ethnicity are risk markers for other underlying conditions that impact health — including socioeconomic status, access to health care, and increased exposure to the virus due to occupation (e.g., frontline, essential, and critical infrastructure workers).

### Actions to Reduce Risk of COVID-19

- **Wearing a Mask**
- **Social Distancing (6 FT Goal)**
- **Hand Hygiene**
- **Cleaning and Disinfection**

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1 Data source: COVID-19 case-level data reported by state and territorial jurisdictions. Case-level data include about 80% of total reported cases. Numbers are unadjusted race ratios.


Undocumented During COVID-19: Essential for the Economy but Excluded from Relief

A UCLA study published today found the exclusion of undocumented residents and their families from the $1,200 given to taxpayers as a result of the COVID-19 pandemic resulted in a loss of $10 billion in potential economic output.
What are we going to do?
Anti-Black racial bias in healthcare algorithm.
Pitfalls of computing for social good.

**Solutionism**: tendency to assume computing will solve social problems.

**Tinkering**: take problematic sociopolitical systems as fixed and optimize around them.

**Diversion**: distract from the root of problems and other forms of addressing them.
Does computing have *any* role to play?
Does computing have any role to play?

Roles for Computing in Social Change
Abebe, Barocas, Kleinberg, Levy, Raghavan, & Robinson (FAT* '20)
Social change is the work of many hands. How can computing support (not supplant) other routes to broad social change?
Computing as **diagnostic**.

*Computing can help us measure social problems and diagnose how they manifest in technical systems.*
Computing as diagnostic.

Sweeney (2013): racial bias in ad delivery
Computing as diagnostic.

Sweeney (2013): racial bias in ad delivery

Buolamwini & Gebru (2018): gender and skin-tone bias in facial analysis

Bolukabsci et al. (2016): Cliskan et al. (2017): bias in word embeddings

Obermeyer et al. (2019), racial bias in healthcare algorithms

Koenecke et al. (2020): racial bias in speech recognition

Abebe et al. (2019): health information bias in search engines
Using Search Queries to Understand Health Information Needs in Africa

Abebe, Hill, Vaughan, Small, & Schwartz (ICWSM, ’19)
Data inequalities.

How do we measure and meet HIV/AIDS health information needs in Africa?
**Drugs:** drug, treatment, patients, abuse, therapy, drugs, resistance, antiretroviral, substance

**Breastfeeding:** positive, baby, mother, breastfeeding, breast, mothers, child, born, feeding, babies

**Symptoms:** pain, sign, lymph, swollen, nodes, sore, symptom, symptoms, throat, infection

**Stigma:** stigma, issues, discrimination, related, ethical, legal, prevention, safety, pdf, workplace

**Natural Cures:** cure, oil, black, healing, heal, healed, seed, herbs, natural, cures

**healthy lifestyle:** food, positive, people, person, diet, healthy, living, eat, good patients, medication, nutrition, foods, lifestyle
Sample natural cure queries.

- Prophet *** *** heals aids
- Blackseed oil olive leaf hiv
- Prophet *** testimonies healing hiv
- HIV healing prayers *** ***
- Olive leaf extract cures hiv
- Honey bee venom cures aids
- Lemon baking soda cures aids
- Nigella sativa cures hiv
- Chlorine dioxide cures hiv
Sample natural cure queries.

- Prophet heals aids
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<table>
<thead>
<tr>
<th>The % of adult internet users who have looked online in the last 12 months for information about...</th>
</tr>
</thead>
<tbody>
<tr>
<td>55% Specific disease or medical problem</td>
</tr>
<tr>
<td>43% Certain medical treatment or procedure</td>
</tr>
<tr>
<td>27% How to lose weight or how to control your weight</td>
</tr>
<tr>
<td>25% Health insurance, including private insurance, Medicare or Medicaid</td>
</tr>
<tr>
<td>19% Food safety or recalls</td>
</tr>
<tr>
<td>16% Drug safety or recalls</td>
</tr>
<tr>
<td>16% A drug you saw advertised</td>
</tr>
<tr>
<td>15% Medical test results</td>
</tr>
<tr>
<td>14% Caring for an aging relative or friend</td>
</tr>
<tr>
<td>12% Pregnancy and childbirth</td>
</tr>
<tr>
<td>11% How to reduce your health care costs</td>
</tr>
<tr>
<td>20% Any other health issue</td>
</tr>
<tr>
<td>72% at least one of the above topics</td>
</tr>
</tbody>
</table>

Source: Pew Research Center's Internet & American Life Project, August 7-September 6, 2012 Survey. N=3,014 adults. Margin of error for internet users (N=2,392) is +/- 2.6 percentage points.
Garlic revs up the immune system’s disease-fighting ability, killing many bacteria and viruses on contact, preventing their proliferation. Bacteria and viruses, furthermore, do not form resistance to garlic as they can to regular pharmaceutical antibiotics and medications. In addition, garlic, unlike pharmaceutical antibiotics, does not harm the intestinal flora, which is so important to digestion and absorption of nutrients. Garlic is thus important as an adjunct treatment for HIV/AIDS, significantly helping improve a patient’s life.

HIV/AIDS Treatment with Garlic - miracleofgarlic.com
www.miracleofgarlic.com/hiv-aids-treatment-with-garlic/
Garlic revs up the immune system’s disease-fighting ability, killing many bacteria and viruses on contact. However, viruses, furthermore, do not feel garlic as a threat to their survival. Pharmaceutical antibiotics and antiretroviral therapies are important to digestion and ability to live, but they cannot cure HIV. Garlic is not a cure, it is just an additional treatment for HIV patients.

HIV/AIDS Treatment with Garlic

www.miracleofgarlic.com/hiv-aids-treatment
Causes of disparities in access to health information.
Causes of disparities in access to health information.

Discrepancies in “backend” processing by search engines.
Web Search

Availability of Web pages on *drugs vs. natural cure*:

- CDC: 4.56x
- NIH: 4.97x
- WHO: 6.56x
- UNAIDS: 7.41x

Causes of disparities in access to health information.
Computing as **diagnostic**.

Computing can *help us measure social problems and diagnose how they manifest in technical systems.*

**Risks:** diagnosis ≠ treatment
Computing as diagnostic.

Computing can help us measure social problems and diagnose how they manifest in technical systems.

Risks: diagnosis ≠ treatment

“Data, in short, do not speak for themselves and don’t always change hearts and minds or policy.”

(Benjamin, 2019)
Computing can inform treatment.

allocation of kidney, seats in public schools, low-income housing resources, food stamps, home energy, …
Computing as formalizer.

Computing requires explicit specifications of inputs and objectives, and can shape how social problems are understood.
Computing as *formalizer*.

*Computing requires explicit specifications of inputs and objectives, and can shape how social problems are understood.*

Social worker must act in the best interests of the child.

Employer aims to hire the most qualified applicant.

Housing assistance programs aim to help the most number of people.
Computing as *formalizer*.

Computing *requires* explicit specifications of inputs and objectives, and can shape how social problems are understood.

Social worker must act in the *best interests* of the child.

Employer aims to hire the *most qualified* applicant.

Housing assistance programs aim to *help the most number* of people.
Computing as **formalizer**.

*Computing requires explicit specifications of inputs and objectives.*

Ara Sparkman by Sally Ryan Photography
Computing as *formalizer*.

*Computing requires explicit specifications of inputs and objectives.*

Subsidy Allocations in the Presence of Income Shocks

Abebe, Kleinberg, Weinberg (AAAI ’20)

Ara Sparkman by Sally Ryan Photography
Optimization problems can yield policy insights.

Abebe, Kleinberg, & Weinberg (AAAI ’20)
Optimization problems can yield policy insights.

- **Information matters.** Income vs. income and shocks
- **Objective functions matter.** Min-sum vs. min-max
- **Intervention types matter.** Income vs. wealth subsidy

Abebe, Kleinberg, & Weinberg (AAAI ’20)
Three Out of Four Low-Income At-Risk Renters Do Not Receive Federal Rental Assistance

All low-income renters with housing needs

75% Unassisted

25% assisted

Families with children: 77%
Elderly without children: 60%
Disabled without children: 53%
Other households: 91%

Note: Low-income renters are considered “at-risk” if they pay more than 30 percent of their monthly income for housing and/or live in overcrowded or substandard housing. Households are considered low-income if they earn 80 percent or less of the local median income.

Source: CBPP analysis of the 2013 American Housing Survey; 2015 HUD administrative data; FY2015 McKinney-Vento Permanent Supportive Housing bed counts; 2015-2016 Housing Opportunities for Persons with AIDS grantee performance profiles; and the USDA FY2015 Multi-Family Fair Housing Occupancy Report.

CENTER ON BUDGET AND POLICY PRIORITIES | CBPP.ORG
Roles for Computing in Social Change

Computing as diagnostic
Computing as formalizer
Computing as rebuttal
Computing as synecdoche
We have a responsibility to shape how our research is understood and used.
Build partnerships with domain experts and affected communities based on mutual trust and respect.
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MD4SG
Mechanism Design for Social Good
Representation in computing matters.
<table>
<thead>
<tr>
<th>Category</th>
<th>CS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonresident Alien</td>
<td>906</td>
<td>61.7%</td>
</tr>
<tr>
<td>Amer Indian or Alaska Native</td>
<td>2</td>
<td>0.1%</td>
</tr>
<tr>
<td>Asian</td>
<td>151</td>
<td>10.3%</td>
</tr>
<tr>
<td>Black or African-American</td>
<td>13</td>
<td>0.9%</td>
</tr>
<tr>
<td>Native Hawaiian/Pac Islander</td>
<td>1</td>
<td>0.1%</td>
</tr>
<tr>
<td>White</td>
<td>365</td>
<td>24.9%</td>
</tr>
<tr>
<td>Multiracial, not Hispanic</td>
<td>9</td>
<td>0.6%</td>
</tr>
<tr>
<td>Hispanic, any race</td>
<td>21</td>
<td>1.4%</td>
</tr>
<tr>
<td>Total Residency &amp; Ethnicity Known</td>
<td>1,468</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Full</td>
<td>Associate</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------</td>
<td>-----------</td>
</tr>
<tr>
<td>Nonresident Alien</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Asian</td>
<td>677</td>
<td>361</td>
</tr>
<tr>
<td>Black or African-American</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>Native Hawaiian/Pacific Islander</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>White</td>
<td>1,403</td>
<td>664</td>
</tr>
<tr>
<td>Multiracial, not Hispanic</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>Hispanic, any race</td>
<td>47</td>
<td>34</td>
</tr>
<tr>
<td>Resident, race/ethnic unknown</td>
<td>83</td>
<td>39</td>
</tr>
<tr>
<td>Total known residency</td>
<td>2,265</td>
<td>1,152</td>
</tr>
<tr>
<td>Residency Unknown</td>
<td>225</td>
<td>159</td>
</tr>
<tr>
<td>Total</td>
<td>2,490</td>
<td>1,311</td>
</tr>
</tbody>
</table>

Source: Taulbee Survey, CRA (2019)
Combating Anti-Blackness in the AI Community

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Abstract

In response to a national and international awakening on the issues of anti-Blackness and systemic discrimination, we have penned this piece to serve as a resource for allies in the AI community who are wondering how they can more effectively engage with dismantling racist systems. This work aims to help elucidate areas where the AI community actively and passively contributes to anti-Blackness and offers actionable items on ways to reduce harm.
Representation in computing matters.
Thank you!

MD4SG.COM