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## US COVID-19 LESSONS

### Race, racism, and covid-19 in the US: lessons not learnt

**Keisha Bentley-Edwards and colleagues** argue that systemic racism and economic inequality are at the root of disparity in covid-19 outcomes and suggest how to distribute resources more equitably.

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The story of covid-19 in the United States is one of many systemic failures to protect its residents from preventable illness and death. Racist stereotypes about disease susceptibility<sup>1</sup> were subsequently discredited by the data.<sup>2</sup> Covid-19 brought the US to a sobering standoff with race, a social construct that through systemic racism materializes as disparate outcomes (box 1).<sup>3</sup> Once testing became available researchers disaggregated and analyzed data along racial lines, providing a more accurate understanding that was unsurprising to anyone who has examined health equity<sup>4</sup>: covid-19 is a preventable disease that disproportionately affects racial minorities. Although the effects were felt in all racialized communities, they were magnified most powerfully for black, Latino, and indigenous people in the US.

#### Box 1: Race is not a risk factor for disparate health outcomes—racism and capitalism are

Race has been largely debunked as a plausible reason for susceptibility to disease, despite lagging realization and action in the medical community.<sup>6, 7</sup>

If we can understand race as a social construct, then we can point to social contexts as causes for health inequalities rather than biology. The following definitions can be used to understand race in the US:

- Structural racism—"the totality of ways in which societies foster racial discrimination, through mutually reinforcing inequitable systems (eg, in housing, education, employment, earnings, benefits, credit, media, healthcare, criminal justice, etc) that in turn reinforce discriminatory beliefs, values, and distribution of resources"<sup>8</sup>
- Black physical peculiarity has been used as a tool by physicians and scientists to justify economic exploitation through slavery and unethical treatment of black people in medical research<sup>9-12</sup>
- Racialization refers to the process in which racial meaning is extended and elaborated to particular relationships, social practices, and groups on the basis of phenotype, culture, language, religion, and class.<sup>13</sup> Individuals and communities subject to this categorization, who are often minorities in nations with predominantly white people, are referred to as "racialized people"
- Racial capitalism refers to the centrality of race in structuring social and labor hierarchies in capitalist economies. This system ensures "a vulnerable supply of low wage workers" and reflects the "strategic deployment of racism by governing elites with the intention of reproducing class privilege"<sup>14-17</sup>

Any reckoning of America's catastrophic performance in averting mass death, disability, and hospital admission must consider the racial and economic inequities embedded in America's federal and state systems. In this article, part of a BMJ series examining US covid-19 lessons (<http://bmj.com/collections/us-covid-series>), we suggest how interventions to reduce discrimination must target contextual factors identified through critical analysis of race as a proxy for exposure to systemic racism.<sup>5</sup>

#### Systemic racism in the US

Race has long been used in the US for legal categorization, economic exploitation, and withholding of human rights to preserve systems of inequality (box 1). Unfounded claims about racial differences in biological susceptibility at the start of the pandemic evolved from theories that Black people were immune to covid-19<sup>1</sup> to black people having a genetic predisposition to disease.<sup>18</sup> These claims are sustained by false notions of "black physical peculiarity"<sup>9</sup> and contemporary racial essentialism—exposing people from racialized communities to policies and practices that suggest that they are suitable for "essential" labor yet more susceptible to preventable disease (box 1).<sup>9, 14, 19</sup>

Current health inequalities in the US originate from historical US policy decisions<sup>20</sup> that affected the lives of minoritized communities, including historical racialized residential segregation (eg, restriction of availability of loans from the government's Home Owners Loan Corporation, established in 1933), policing and carceral systems,<sup>21</sup> compulsory boarding school for Indigenous youth,<sup>22</sup> immigration policy,<sup>23</sup> and occupational segregation.<sup>14</sup> As a result, many Black, Latino, and Indigenous people experience work and living conditions with higher environmental toxins, psychosocial stressors, and less access to affordable primary and emergency care. Moreover, prison overcrowding resulting from high levels of incarceration, mainly affecting people from racialized minorities, and overpopulation of Immigration and Customs Enforcement detainment camps contributed to the highly inequitable covid-19 pandemic outcomes as the nation transitioned to lockdown.<sup>14, 21</sup>

#### Economic inequality and racial capitalism

Policies targeting Black people and other racialized groups in the US have led to the racial wealth gap—persistent and substantial wealth disparities between families of different racial and ethnic groups across various measures that are directly linked to

overall health and wellbeing.<sup>24 25</sup> In 2020, the median net worth of Black families was 10 times lower than that of white families.<sup>25</sup> Systemic racism shapes and drives wealth inequities by race, ethnicity, and tribal membership. For example, higher covid-19 case rates were associated with areas in the US with higher racialized populations and low income. Primary care provider access differed by these factors, linked to the direct results of social divestment at the time of “Jim Crow” racial segregation policies introduced at the end of the 19th century.<sup>24 26</sup> Before the pandemic, 80% of total US medical debt was held by households with zero or negative net worth, and 27% of Black households held medical debt compared with 16.8% of other households.<sup>27</sup>

Racial capitalism explains how racialized essential workers<sup>28</sup> were directly exposed to the dire consequences of the pandemic, with mortality among Black retail workers in 2020 increasing by up to 36% because of covid-19.<sup>29</sup> Racialized people often work in essential “high exposure” jobs and professions. With the exception of “high exposure professionals” with power and resources (eg medical doctors or executives in meatpacking industries), these essential workers (eg construction workers, agricultural, and nursing home staff) experienced the highest rates of infection.<sup>14 29</sup> Social networks for these individuals were densely populated with others who had high exposure because of residential segregation and overcrowded housing. Premature death of working household members may affect wealth generation and accumulation, exacerbating future family strain.<sup>30</sup>

### Chronic health conditions and susceptibility

Understanding why diseases like covid-19 disproportionately affect people from racialized minorities requires consideration of the influence of systemic racism within US socioecological structures and history.<sup>31</sup> These systems consistently expose people from racialized minorities to uneven health risks without offering equitable mitigation. One explanation often offered for higher covid-19 mortality among racialized groups was the greater prevalence of pre-existing health conditions.<sup>32 33</sup> However, this overlooks the broader role that systemic racism plays in producing worse health outcomes for these groups.<sup>14</sup> It also enables state and local governments to both abdicate their roles in providing equitable care for populations at higher risk of infection and avoid responsibility for historical policies that led to such disparities in pre-existing conditions. Following the Indian Civilization Act of 1819 for example, Indigenous children throughout the US were compelled to attend boarding schools and experienced high rates of abuse<sup>34</sup> and forced assimilation.<sup>22</sup> A 2019 analysis found that people who were forced to attend these boarding schools and their offspring are more likely than their indigenous counterparts to have chronic health conditions, pointing towards an intergenerational course of chronic disease inequity that likely left people more susceptible to devastating covid outcomes.<sup>35</sup>

Just as the notion of “black physical peculiarity” was used to justify Black slave labor and contemporary use of antiquated race based clinical algorithms, some of the public narrative attributed disparate covid outcomes and pre-existing conditions to health and health seeking behaviors,<sup>36</sup> multigenerational housing (rather than segregated and overcrowded housing), inadequate personal hygiene (rather than lack of access to personal protective equipment at work), and poor health literacy (rather than ineffective health communication).<sup>37</sup> This focus on individual level factors, assigning blame to cultural and behavioral practices, was not supported by adequate evidence that explained the differences in outcomes.<sup>5</sup> Neither did these narratives interrogate upstream structural drivers

of chronic health conditions such as racism or racial capitalism, as set out in public health critical race methods.<sup>38</sup>

### Healthcare dynamics and inequity

Health inequalities underpinning worse covid-19 outcomes are partially attributed to differences in access to the US healthcare system. Black, Latino, and Indigenous people are disproportionately represented among the uninsured and underinsured, often residing in areas with limited access to quality medical facilities.<sup>39</sup>

These groups also have lower incomes and less wealth than their white counterparts, restricting access to private insurance and ability to afford healthcare.<sup>40</sup> Southern states have the largest populations of Black Americans, with many states rejecting federal funding expansion for Medicaid (public insurance that serves low income populations) without providing adequate alternatives.<sup>39</sup> More southern states also have “right-to-work” laws that weaken labor unions and collective bargaining for health benefits.<sup>41</sup> The substantial rise in unemployment during the pandemic exacerbated these differences, further reducing access to health insurance.<sup>42 43</sup>

### Vaccine misinformation

Extremely low covid-19 vaccine uptake among Black pregnant people,<sup>44 45</sup> may reflect the intersection of historical mistrust of medical research with contemporary misinformation campaigns targeted at Black people.<sup>46-48</sup> Lack of clinical trial data on pregnant people and misinformation about the vaccine brought confusion and feelings of exclusion.<sup>49</sup> Misinformation and sceptic campaigns target Black families by erroneously likening the contemporary vaccine trials to historical scandals like the Tuskegee syphilis study, in which treatment was withheld from Black men without consent,<sup>46</sup> despite their differences in research design. The campaigns built on distrust and suggested that the vaccines would infect people with SARS-CoV-2 rather than protect them from disease, worsening vaccine hesitancy and reducing uptake among racialized groups and immunocompromised people. Other misinformation campaigns reflected ideas that vaccination would increase rates of stillbirth, miscarriages, and infertility without supporting data.<sup>50</sup>

### Long covid

Few policies have been developed to mitigate the physical and financial damage from pandemic related illness among Black and other racialized people. One clinical outcome that points to systemic failure in the aftermath of the pandemic is long covid—persistent constitutional, cardiorespiratory, neuropsychiatric, and gastrointestinal symptoms and complications ranging from mild to severe.<sup>51</sup> Studies show that Black and Hispanic Americans are more likely to develop symptoms of long covid than white Americans, and some may not have the condition diagnosed because of coding changes.<sup>52</sup> Although further research is needed to understand the mechanisms for these differences and the role of coding in covid-19 diagnosis, these disparities could be one of the many sequelae of systemic racism and economic inequality on health, as racialized people are less likely to seek further healthcare for persistent covid symptoms because of cost and access issues.<sup>53</sup> Further, people with long covid experience stigmatization because of perceived psychosomatization, while limited and overburdened referral centers hinder access to care, likely compounding issues for people from minority groups.<sup>54</sup>

### Implications and recommendations

Rather than waiting for the next pandemic to address systemic failures, the US must start working now to achieve equitable health outcomes for racialized and poor Americans. Tackling systemic

racism requires an approach that is grounded in critical race theory<sup>38</sup> and anti-racism. To be effective and responsive to the needs of racialized people, the approach must reflect and include the extensive knowledge on equity established by activists<sup>55</sup> and interdisciplinary public health researchers<sup>57</sup> long before the pandemic, while expanding on new methods of understanding in public health research.<sup>58</sup> The following recommendations all reflect an anti-racist approach.

**Resist the compulsion to pathologize racialized minority behavior without assessing structural drivers to health inequities**—Rather than focusing on individual health behaviors, health experts and communicators (eg, medical research, journalism, epidemiological studies) should be encouraged to assess how structural racism and economic inequality prompt and sustain those behaviors.<sup>36</sup>

**Disaggregate racialized data and develop measures to operationalize structural racism in public health studies**—Transdisciplinary health equity researchers and epidemiologists have suggested the need to disaggregate broad racial categories such as “Hispanic/Latino” to assess disease risk for specific individuals and communities.<sup>5</sup> Analyzing variation within ethnic groups can reduce the likelihood of missing key distinguishers in health outcomes. Similarly, separating out Native Hawaiians and Pacific Islanders from encapsulating terms such as Native American or Indigenous in statistical analysis,<sup>59</sup> can help to critically analyze the specific risk factors related to racism and identify populations at risk of exposure to structural racism,<sup>38</sup> based on their specific context rather than relying on race as a risk factor. Disaggregating at different intersections can reveal crucial information. For example, disaggregating racial data by age showed that black people were hospitalized or dying at a significantly younger age than white individuals and the general population.<sup>60</sup>

**Support community partnerships**—Institutions and governments should work with community based organizations in health promotion and disease prevention efforts. Initiatives such as the Black Doctors Consortium in Philadelphia<sup>61</sup> had a crucial role in bringing testing and vaccines to underserved communities. Collaborations between universities, trusted community organizations, faith groups, and state or local governments have been effective in vaccinating Black and Latino people, highlighting the importance of maintaining these partnerships and fostering innovation to reduce health inequalities.<sup>62</sup> In these partnerships, communities should have the power to intervene and contribute as experts rather than simply providing input. Community partners and community based organizations should reflect the people most affected by the health concern. As such, institutions should seek local partnerships that are led by and focused on racialized populations.

**Reparations for descendants of enslaved people**—As well as the compelling moral and historical arguments in favor of reparations, many analyzes suggest reparations are an effective public health strategy<sup>63</sup> that could not only have prevented more premature deaths from covid among all Americans<sup>64</sup> but also increase the life expectancy for Black Americans,<sup>65</sup> and have a lasting intergenerational effect on families.<sup>12</sup>

**Separate health insurance from employment**—Working age racialized people have high rates of unemployment and underinsurance or uninsurance.<sup>39</sup> Given the disproportionate toll on young, racialized people in essential roles, policies should frame healthcare as a universal right, rather than a fringe benefit from employment.

**Include vulnerable populations in vaccine trials and rethink vaccine distribution**—Perinatal death rates increased throughout the pandemic for most racialized groups,<sup>66</sup> with effects most pronounced among Black people. Delays in including pregnant Black people in clinical trials caused and inflamed the racialized misinformation campaigns. The Food and Drug Administration and drug companies must coordinate to make sure that all Americans are included in vaccine trials while critically assessing medical professional guidelines. Once vaccines were approved and demand grew beyond supply, the distribution and priority status became politicized. Essential workers who were initially included in the second tier moved down the priority list for vaccines, while occupations that typically have low Black representation (such as teachers) were moved up the list.<sup>67</sup> The vaccine rollout thus prioritized people who interacted with those at greatest risk of covid-19 infection rather than those who were actually at greatest risk themselves.<sup>68</sup>

**Improve conditions for incarcerated people and move towards abolishing carceral systems**—Incarceration has detrimental health effects on individuals and communities.<sup>21</sup> Incarcerated people and those who been recently released have increased rates of infectious diseases, chronic health conditions, and are more likely to acquire covid-19 and develop severe covid-19 symptoms. State prisons had over three times the rate of covid-19 infections than the general population.<sup>69</sup> Statistics for people detained in immigration camps were obscured by enforcement agency reporting practices,<sup>70</sup> but after a bill was passed calling for covid-19 data transparency, analysis showed over 10 000 covid-19 cases from March 2020 to March 2021. In October 2021, researchers at the American Public Health Association pointed to incarceration as a threat to public health and called for a move towards “the abolition of carceral systems.”<sup>71</sup> While progressing towards this crucial target, recommendations to improve health outcomes include developing a system for identifying medically vulnerable people in immigration detention centers, reducing dangerous facility transfers, release of incarcerated people who are better suited for care in the community, and reducing barriers for vaccination regardless of citizen status.<sup>72</sup>

While systemic racism exists in the United States, racialized people will continue to die prematurely and unnecessarily. Policy makers need to learn from missed opportunities to reduce the challenges affecting the most vulnerable Americans and take steps to reconcile longstanding issues from centuries of detrimental policy. Action now following an anti-racist approach will ensure the US is better prepared to meet future public health crises.

#### Key messages

- Covid-19 disproportionately affected racialized groups, who had higher hospitalization and death rates than white Americans
- Inequalities in hospital admissions rates were greatest for racialized people in young and middle adulthood
- Systemic racism, economic inequality, and racial capitalism all contribute to the racial gaps in health conditions linked to worse covid-19 outcomes
- Despite the pandemic exposing systemic inequality in the US, little progress has been made to change these conditions or address racial capitalism
- Efforts to reduce health inequities must be built on anti-racist action

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- Mock B. *Why you should stop joking that Black people are immune to coronavirus*. Bloom CityLab, 2020. -5.
- Lundberg DJ, Wrigley-Field E, Cho A, et al. Covid-19 mortality by race and ethnicity in US metropolitan and nonmetropolitan areas, March 2020 to February 2022. *JAMA Netw Open* 2023;6:e2311098. doi: 10.1001/jamanetworkopen.2023.11098 pmid: 37129894
- Smaje C. Not just a social construct: theorising race and ethnicity. *Sociology* 1997;31:27-40. doi: 10.1177/0038038597031002007
- Gould E, Wilson V. Black workers face two of the most lethal preexisting conditions for coronavirus—racism and economic inequality. 2020. <https://www.epi.org/publication/black-workers-covid/>
- Lett E, Asabor E, Beltrán S, Cannon AM, Arah OA. Conceptualizing, contextualizing, and operationalizing race in quantitative health sciences research. *Ann Fam Med* 2022;20:63. doi: 10.1370/afm.2792 pmid: 35045967
- Tsai J, Cerdeña JP, Khazanchi R, et al. There is no 'African American Physiology': the fallacy of racial essentialism. *J Intern Med* 2020;288:70. doi: 10.1111/joim.13153 pmid: 32808368
- Gannon M. Race is a social construct, scientists argue. *Sci Am* 2016;5:11.
- Bailey ZD, Krieger N, Agénor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. *Lancet* 2017;389:63. doi: 10.1016/S0140-6736(17)30569-X pmid: 28402827
- Guillory JD. The pro-slavery arguments of Dr Samuel A Cartwright. *La Hist* 1968;9:27. pmid: 11635310
- Cartwright SA. Report on the diseases and physical peculiarities of the Negro race. In: Caplan A, McCartney JJ, Sisti DA, eds. *Health, disease, and illness: concepts in medicine*. Georgetown University Press, 2004:39.
- Hoffman KM, Trawalter S, Axt JR, Oliver MN. Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites. *Proc Natl Acad Sci U S A* 2016;113:301. doi: 10.1073/pnas.1516047113 pmid: 27044069
- Bentley-Edwards KL. The African American health burden: disproportionate and unresolved. In: Darity WA, Jr, Mullen AK, Hubbard L, eds. *The Black reparations project: the case for redress and the path to get there*. UC Berkeley Press, 2023:95-108.
- HoSang D, LaBennett O, Pulido L. *Racial formation in the twenty-first century*. Univ of California Press, 2012.
- McClure ES, Vasudevan P, Bailey Z, Patel S, Robinson WR. Racial capitalism within public health—how occupational settings drive covid-19 disparities. *Am J Epidemiol* 2020;189:53. doi: 10.1093/aje/kwaa126 pmid: 32619007
- Pulido L. Geographies of race and ethnicity II: Environmental racism, racial capitalism and state-sanctioned violence. *Prog Hum Geogr* 2017;41:33. doi: 10.1177/0309132516646495
- Robinson C. Black marxism. In: *Social theory re-wired*. Routledge, 2023:156-64. doi: 10.4324/9781003320609-22
- Feldman JM, Bassett MT. US public health after covid-19: learning from the failures of the hollow state and racial capitalism. *BMJ* 2024;384:e076969. doi: 10.1136/bmj-2023-076969 pmid: 38316450
- Gravlee C. Racism, not genetics, explains why Black Americans are dying of COVID-19. *Sci Am* 7 Jun 2020. <https://blogs.scientificamerican.com/voices/racism-not-genetics-explains-why-black-americans-are-dying-of-covid-19/>
- Ross J. *Coronavirus outbreak revives dangerous race myths and pseudoscience*. NBC News, 2020: 19. <https://www.nbcnews.com/news/health/coronavirus-outbreak-revives-dangerous-race-myths-pseudoscience-n1162326>
- Bailey ZD, Feldman JM, Bassett MT. How structural racism works - racist policies as a root cause of US racial health inequities. *N Engl J Med* 2021;384:73. doi: 10.1056/NEJMs2025396 pmid: 33326717
- LeMasters K, Brinkley-Rubinstein L, Maner M, Peterson M, Nowotny K, Bailey Z. Carceral epidemiology: mass incarceration and structural racism during the COVID-19 pandemic. *Lancet Public Health* 2022;7:90. doi: 10.1016/S2468-2667(22)00005-6 pmid: 35247354
- Fonseca F. US grappling with Native American boarding school history. *Philadelphia Tribune* 2022 May 13. <https://news.yahoo.com/us-grappling-native-american-boarding-052214711.html>
- De Trinidad Young M-E, Wallace SP. Included, but deportable: a new public health approach to policies that criminalize and integrate immigrants. *Am J Public Health* 2019;109:6. doi: 10.2105/AJPH.2019.305171 pmid: 31318585
- Darity WAJ, Mullen AK. *From here to equality: reparations for Black Americans in the twenty-first century*. University of North Carolina Press, 2022.
- Hardy BL, Logan TD. Racial economic inequality amid the COVID-19 crisis. Hamilton Project, 2020. [https://www.brookings.edu/wp-content/uploads/2020/08/EA\\_HardyLogan\\_LO\\_8.12.pdf](https://www.brookings.edu/wp-content/uploads/2020/08/EA_HardyLogan_LO_8.12.pdf)
- Ramprasad A, Qureshi F, Lee BR, Jones BL. The relationship between structural racism and covid-19 related health disparities across 10 metropolitan cities in the United States. *J Natl Med Assoc* 2022;114:73. doi: 10.1016/j.jnma.2022.01.008 pmid: 35221074
- Perry AM, Crear-Perry J, Romer C, Adjeiwaa-Manu N. The racial implications of medical debt: how moving toward universal health care and other reforms can address them. Brookings Institution, 2021. <https://policycommons.net/artifacts/4142947/the-racial-implications-of-medical-debt/4952004/>
- Michaels D, Spieler EA, Wagner GR. US workers during the covid-19 pandemic: uneven risks, inadequate protections, and predictable consequences. *BMJ* 2024;384:e076623. doi: 10.1136/bmj-2023-076623 pmid: 38286467
- Chen Y-H, Glymour M, Riley A, et al. Excess mortality associated with the COVID-19 pandemic among Californians 18-65 years of age, by occupational sector and occupation: March through November 2020. *PLoS One* 2021;16:e0252454. doi: 10.1371/journal.pone.0252454 pmid: 34086762
- West S, Castro A. Impact of guaranteed income on health, finances, and agency: findings from the stockton randomized controlled trial. *J Urban Health* 2023;100:44. doi: 10.1007/s11524-023-00723-0 pmid: 37037977
- Williams DR, Mohammed SA. Racism and health II: a needed research agenda for effective interventions. *Am Behav Sci* 2013;57:26. doi: 10.1177/0002764213487341 pmid: 24347667
- Benjamin EJ, Muntner P, Alonso A, et al. American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics—2019 update: a report from the American Heart Association. *Circulation* 2019;139:528. doi: 10.1161/CIR.0000000000000659 pmid: 30700139
- Louis-Jean J, Cenat K, Njoku CV, Angelo J, Sanon D. Coronavirus (covid-19) and racial disparities: a perspective analysis. *J Racial Ethn Health Disparities* 2020;7:45. doi: 10.1007/s40615-020-00879-4 pmid: 33025419
- Brown M. Native Americans recall torture, hatred at boarding schools. *The Independent* 2022 Oct 15.
- Running Bear U, Thayer ZM, Croy CD, Kaufman CE, Manson SMAI-SUPERPFPP Team. The impact of individual and parental American Indian boarding school attendance on chronic physical health of Northern Plains Tribes. *Fam Community Health* 2019;42:7. doi: 10.1097/FCH.0000000000000205 pmid: 30431464
- Bunn C. *Black health experts say surgeon general's comments reflect lack of awareness of black community*. NBC News, 2020.
- Olivo A, Lang M, Harden J. Crowded housing and essential jobs: why so many Latinos are getting coronavirus. *Washington Post* 2020 May 26. [https://www.washingtonpost.com/local/latinos-coronavirus-2020/05/25/615c882a-946e-11ea-82b4-c8b16ff6e5\\_story.html](https://www.washingtonpost.com/local/latinos-coronavirus-2020/05/25/615c882a-946e-11ea-82b4-c8b16ff6e5_story.html)
- Ford CL, Airihienbuwa CO. The public health critical race methodology: praxis for antiracism research. *Soc Sci Med* 2010;71:8. doi: 10.1016/j.socscimed.2010.07.030 pmid: 20822840
- Artiga S, Hill L, Damico A. Health coverage by race and ethnicity, 2010-2021. Kaiser Family Foundation, 2022. <https://www.kff.org/racial-equity-and-health-policy/issue-brief/health-coverage-by-race-and-ethnicity/>
- Brundage V Jr. Labor market activity of Blacks in the United States. 2020. <https://www.bls.gov/spotlight/2020/african-american-history-month/pdf/african-american-history-month.pdf>
- Windham L. Knocking on labor's door: union organizing in the 1970s and the roots of a new economic divide. UNC Press Books, 2017.
- Groeger LV. *What coronavirus job losses reveal about racism in America*. ProPublica, 2020.
- Rachel G, Jennifer T. What we do and don't know about recent trends in health insurance coverage in the US. Kaiser Family Foundation 2020; <https://www.kff.org/policy-watch/what-we-do-and-dont-know-about-recent-trends-in-health-insurance-coverage-in-the-us/#:~:text=The%202.3%20million%20person%20growth,in%20Medicaid%20and%20direct%20purchase>
- Smith IZ, Bentley-Edwards KL, El-Amin S, Darity WJr. *Fighting at birth: eradicating the black-white infant mortality gap*. Duke University, 2018.
- Shephard HM, Manning SE, Nestoridi E, et al. Inequities in covid-19 vaccination coverage among pregnant persons, by disaggregated race and ethnicity—Massachusetts, May 2021-October 2022. *MMWR Morb Mortal Wkly Rep* 2023;72:6. doi: 10.15585/mmwr.mm7239a2 pmid: 37768877
- Brandt AM. Racism and research: the case of the Tuskegee Syphilis Study. *Hastings Cent Rep* 1978;8:9. doi: 10.2307/3561468 pmid: 721302
- Baptiste DL, Caviness-Ashe N, Josiah N, et al. Henrietta Lacks and America's dark history of research involving African Americans. *Nurs Open* 2022;9:8. doi: 10.1002/nop.2.1257 pmid: 35700235
- Darity W. *The Black reparations project: a handbook for racial justice*. University of California Press, 2023.
- Beigi RH, Krubiner C, Jamieson DJ, et al. The need for inclusion of pregnant women in covid-19 vaccine trials. *Vaccine* 2021;39:70. doi: 10.1016/j.vaccine.2020.12.074 pmid: 33446385
- Sparks G, Lopes L, Montero A, Hamel L, Brodie M. KFF covid-19 vaccine monitor: pregnancy misinformation—May 2022. KFF, 2022. <https://www.kff.org/coronavirus-covid-19/poll-finding/kff-covid-19-vaccine-monitor-pregnancy-misinformation-may-2022/>

- 51 CDC. Long covid or post-covid conditions. 2023. <https://stacks.cdc.gov/view/cdc/133106>.
- 52 Tanne JH. Covid-19: US studies show racial and ethnic disparities in long covid. *BMJ* 2023;380:. doi: 10.1136/bmj.p535 pmid: 36878599
- 53 Boehmer TK, Koumans EH, Skillen EL, et al. Racial and ethnic disparities in outpatient treatment of covid-19—United States, January–July 2022. *MMWR Morb Mortal Wkly Rep* 2022;71:–65. doi: 10.15585/mmwr.mm7143a2 pmid: 36301738
- 54 Nikolic JŽ, Rosen CJ. Toward comprehensive care for long covid. *N Engl J Med* 2023;388:–5. doi: 10.1056/NEJMp2304550 pmid: 37158440
- 55 Du Bois WEB. The Philadelphia negro: a social study: University of Pennsylvania, 1899.
- 56 Espino V. Equal medical care for all. Chicana and Chicano health activism in late 1960s Los Angeles. 123th Annual Meeting of American Historical Association, 2009.
- 57 Williams DR, Sternthal M. Understanding racial-ethnic disparities in health: sociological contributions. *J Health Soc Behav* 2010;51(Suppl):–27. doi: 10.1177/0022146510383838 pmid: 20943580
- 58 Dyer Z, Alcusky MJ, Galea S, Ash A. Measuring the enduring imprint of structural racism on American neighborhoods: study examines food insecurity low-income Asian Americans and low participation in the CalFresh nutrition program. *Health Aff* 2023;42:–82doi: 10.1377/hlthaff.2023.00659.
- 59 Kaholokula JK, Samoa RA, Miyamoto RES, Palafox N, Daniels SA. COVID-19 Special Column: COVID-19 Hits Native Hawaiian and Pacific Islander Communities the Hardest. *Hawaii J Health Soc Welf* 2020;79:–6.pmid: 32432218
- 60 McGough M, Lo J, Amin K, Artiga S, Hill L, Cox C. Racial disparities in premature deaths during the covid-19 pandemic. Kaiser Family Foundation, 2023. <https://www.healthsystemtracker.org/brief/racial-disparities-in-premature-deaths-during-the-covid-19-pandemic/#All-cause%20mortality%20rate%20for%20people%20under%20age%2075%20per%20100,000%20people%20under%20age%2075,%20by%20race/ethnicity,%202015-2022>
- 61 Jaklevic MC. Surgeon fills covid-19 testing gap in Philadelphia's Black neighborhoods. *JAMA* 2021;325:–6. doi: 10.1001/jama.2020.22796 pmid: 33326010
- 62 Marrett CB. Racial disparities and COVID-19: the social context. *J Racial Ethn Health Disparities* 2021;8:–7. doi: 10.1007/s40615-021-00988-8 pmid: 33733425
- 63 Bassett MT, Galea S. Reparations as a public health priority—a strategy for ending black-white health disparities. *N Engl J Med* 2020;383:–3. doi: 10.1056/NEJMp2026170 pmid: 33031653
- 64 Richardson ET, Malik MM, Darity WAJr, et al. Reparations for Black American descendants of persons enslaved in the U.S. and their potential impact on SARS-CoV-2 transmission. *Soc Sci Med* 2021;276:113741. doi: 10.1016/j.socscimed.2021.113741 pmid: 33640157
- 65 Himmelstein KEW, Lawrence JA, Jahn JL, Ceasar JN, Morse M, Bassett MT, et al. Association between racial wealth inequities and racial disparities in longevity among US adults and role of reparations payments, 1992 to 2018. *JAMA Network Open* 2022;5(11):e2240519-e.
- 66 Simpson KR. Effect of the covid-19 pandemic on maternal health in the United States. *MCN Am J Matern Child Nurs* 2023;48:. doi: 10.1097/NMC.0000000000000895 pmid: 36823723
- 67 Watson K. Biden says teachers and support staff should move up on vaccine priority list. CBS News 2021 Feb 21 <https://www.cbsnews.com/news/biden-covid-vaccine-teachers-schools/>
- 68 Bentley-Edwards KL, Scott MJ, Robbins PA. How systemic racism and preexisting conditions contributed to covid-19 disparities for Black Americans. In: *The pandemic divide: how covid increased inequality in America*. Duke University Press, 2022.
- 69 Lemasters K, McCauley E, Nowotny K, Brinkley-Rubinstein L. Covid-19 cases and testing in 53 prison systems. *Health Justice* 2020;8:. doi: 10.1186/s40352-020-00125-3 pmid: 33306151
- 70 Smart N, Garcia A, Siulc N. *One year later, we still don't know how many people in ice detention have been exposed to covid-19*. Vera Institute of Justice, 2021.
- 71 Jahn J, Pacino V, Spencer J, eds. Advancing public health interventions to address the harms of the carceral system. APHA 2021 Annual Meeting and Expo, 2021.
- 72 Marouf FE. The impact of covid-19 on immigration detention. *Frontiers in Human Dynamics* 2021;2:599222.doi: 10.3389/fhumd.2020.599222