

Addressing Racial Capitalism's Impact on Black Essential Workers During the COVID-19 Pandemic: Policy Recommendations

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Abstract

Black Americans are more likely to be essential workers due to racial capitalism. Because of the COVID-19 pandemic, essential workers are less able to adhere to social distancing and stay-at-home guidelines due to the nature of their work, because they are more likely to occupy crowded households, and are more likely to possess pre-existing health conditions. To assist Black essential workers in preventing infection or reducing the intensity of symptoms if contracted, vaccination against the virus is essential. Unfortunately, Black essential workers face considerable barriers to accessing vaccinations and are hesitant to receive the vaccine due to widespread misinformation and justified historical mistrust of the American medical system. The purpose of this work is to (1) describe the disproportionate impact of COVID-19 on Black essential workers due to racial capitalism, (2) outline the socioeconomic and racial barriers related to vaccination within this population, and (3) to suggest policy-related approaches to facilitate vaccination such as access to on-site vaccination opportunities, the funding of community outreach efforts, and the mandating of increased employee benefits.

Keywords Black essential workers · COVID-19 · Pandemic · Racial capitalism · Policy recommendations

Background

As of May 2022, over a million Americans have died from the COVID-19 virus [1]. Though the virus has significantly impacted all Americans, it has disproportionately affected the lives of Black Americans [2, 3]. According to the Centers for Disease Control and Prevention (CDC), Black Americans are approximately two times as likely to be hospitalized or die due to the contraction of the COVID-19 virus as of April 2022 [4]. With the spread of the Delta and Omicron variants, there is evidence that suggests the persistence of COVID-19 disparities between Black and White Americans amid the ongoing pandemic [5].

"Racial capitalism" refers to the social and economic exploitation of people of color for the sake of capitalistic gain [6–13]. Racial capitalism has been conceptualized by scholars as the source of racial disparities in health and socioeconomic status (SES) (e.g., income, education) between Black and White Americans. Due to racial capitalism, Black

Jocelyn L. Brown Jocelyn.robinson@som.umaryland.edu Americans are significantly more likely to hold essential worker positions, putting them at an added risk of contracting and transmitting COVID-19 [8–11]. Essential worker positions often result in low income [14], lack of adequate health care coverage, and inadequate sick leave options [15]. For Black essential workers, these socioeconomic conditions are exacerbated by other forms of structural racism such as residential segregation, medical bias, and the repetition of historical inequities (e.g., racist tropes during the Chicago flu epidemic) during global crises [8, 16].

According to Robinson [10], capitalism is inherently racialized as it can only thrive by producing severe inequality between certain groups of people. Black Americans, initially brought to America as slaves, have been perpetually dehumanized throughout American history, making them the permissible sustenance on which the economy thrives. After slavery ended, Black bodies (e.g., sharecroppers, prisoners, domestic workers) were used to create the foundation of modern-day American society [17]. In times of crisis, such as in the current pandemic, racial capitalism exacerbates the harmful social conditions that disproportionally impact Black people. Presently, Black people are being used in essential working positions without the appropriate response from policymakers to increase vaccination access.

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This appropriate response would, in turn, reduce the risk of Black essential workers contracting, transmitting, and dying from COVID-19 [10, 14, 15, 18].

Essential Workers' Risks

The pervasiveness of racial capitalism is evident in employers' and government officials' responses to COVID-19 [8]. Despite state-wide social distancing and stay-at-home orders to slow the spread of the COVID-19 virus, 55 million essential workers were required to report to work even after the outbreak of the novel coronavirus amidst serious uncertainty about its transmission and course [10, 17, 19]. Essential workers are people who perform a variety of operations and services in industries that are deemed vital to the functioning of the USA [20]. Due to the nature of their work, essential workers were and remain at substantial risk of COVID-19 infection compared to the general population [21, 22].

Essential workers are more likely to be people of color [16]. While Black Americans make up 15% of the workforce, the research shows that Black Americans are significantly more likely to hold essential worker positions that include 30% of bus drivers, 23% of personal care aides, and 20% food service workers [10, 20, 23]. Through the lens of racial capitalism, racism and capitalism are mutually reinforcing and exploitive as Black people are brought to the frontlines to sustain the economy at the expense of their health and well-being. Because many essential positions are low-wage, Black essential workers are more likely be of lower SES [24]. As such, they are less likely to have health insurance, access to affordable healthcare, or the availability of sick leave [4, 25]. These cascading racial and socioeconomic factors accumulate to produce continuing disparities in COVID-19 infection, transmission, and death among Black essential workers.

Household Crowding and Pre-existing Health Conditions

At the beginning of the pandemic, the CDC recommended that all individuals socially distance themselves and wear face masks to slow the spread of COVID-19 [26]. Due to racial capitalism perpetuating socioeconomic (e.g., low wages, essential worker status) and race-related (e.g., residential segregation, housing discrimination) factors, adherence to these social distancing and stay-at-home orders has been difficult for Black essential workers. Block et al. [27] found that only 67% of Black Americans were able to comply with social distancing guidelines. This is because Black Americans, in addition to working essential positions, are more likely to live in crowded, multigenerational households [19, 24, 28, 29]. For context, Black Americans have 70% higher odds of being unable to self-isolate due to household crowding [30]. In addition to the risks associated with essential worker positions, household crowding continues to put Black Americans at greater risk for contracting the COVID-19 virus *even though* most social distancing guidelines and stay-at-home orders have been suspended [5, 31]. This is because the virus has had the opportunity to penetrate and circulate within Black homes.

Household crowding has contributed to the disparaging rates of mortality and morbidity among this population not only due to Black Americans being in close contact with each other but because Black Americans are more likely to have pre-existing health conditions as well [23]. Racial capitalism "weathers" away at the health of people of color as long-term exposure to socioeconomic disadvantage, such as being essential workers, contributes to poor physical health [32]. As a result, Black Americans have higher rates of chronic health conditions compared to White Americans such as hypertension, heart disease, and diabetes [16]. These pre-existing health conditions, along with the likelihood of being an essential worker or living in crowded homes, put Black Americans at an added risk of severe illness or death after contracting COVID-19 [8].

Health-Protective Strategies

In addition to social distancing guidelines and stay-at-home orders, other health-protective strategies, such as providing essential workers with high-quality personal protective equipment (PPE), the wearing of face masks, and increasing access to diagnostic testing, are and have been crucial in the ongoing pandemic [33]. However, when considering the added risks that Black essential workers face compounded with the occupation of crowded homes, vaccination is essential in reducing the spread, transmission, and death from COVID-19 [19, 25, 28, 34, 35]. Unlike the aforementioned strategies, the benefits of vaccination are all encompassing as it addresses the risks that Black essential workers face both at work and at home. For example, because Black essential workers are in close contact with the public and live in multigenerational households, vaccination provides more protection from the virus than having increased access to PPE or wearing face masks. This is because they are more likely to live in close contact with other people outside of work.

Because vaccination is the more effective way of assisting Black essential workers in staving off COVID-19, an overview of potential policy interventions (i.e., vaccine-related strategies) to reduce susceptibility to the virus is essential to reduce mortality and morbidity among this population. Even so, Black Americans, in general, face considerable barriers to vaccination, resulting in only 57% of this population being at least partially vaccinated as of April 2022[36]. As such, the purpose of this piece is to detail the impact of COVID-19 on this population and to provide policy recommendations to address COVID-19 mortality and morbidity among Black essential workers through vaccination.

Current Policies and Approaches

Current Vaccines Available

Due to the unique risks Black essential workers face, the most obvious (yet challenging) solution to mitigating the risk of severe illness and death among essential workers is vaccination [21, 37, 38]. In late 2020, several vaccines (i.e., Pfizer, Moderna) were granted Emergency Use Authorization by the US Food and Drug Administration to prevent COVID-19 and to mitigate the illness for those who are infected with the virus [21]. Since then, Pfizer has received full FDA approval as of August 2021. Even so, these vaccines have not been universally accepted. US COVID-19 vaccination rates are modest with 65% of the US population being fully vaccinated but only 55% of Black Americans being fully vaccinated [36]. To date, a key strategy to increase vaccination rates among essential and non-essential workers includes the implementation of vaccine requirements put forth by state policymakers, federal policymakers, and private companies.

Vaccine Requirements

In November 2021, CMS required that *healthcare* workers, without medical or religious exemption, be vaccinated [39]. This requirement came without the option to be tested regularly instead of inoculation; however, this requirement has been suspended as of December 2021 due to court-ordered injunctions brought forth by Missouri and Louisiana [40]. Though the requirement is no longer in effect, states such as Colorado, Maine, New York, Oregon, Rhode Island, and Washington have required all *healthcare* workers to be vaccinated or face termination [41].

In September 2021, President Biden announced Path out of the Pandemic, a six-part plan to address the spread of the COVID-19 virus [42]. This plan included sweeping vaccine requirements that will require two-thirds (100 million) of American workers to be vaccinated. Furthermore, the plan would allow employers in the private sector to opt to test employees at least weekly instead of mandating the vaccine. The Path out of the Pandemic directed the Occupational Safety and Health Administration (OSHA) to issue a temporary vaccine *or* testing requirement for all US employers with over 100 workers [43]. This emergency temporary standard (ETS) went into effect on November 5, 2021; however, it was challenged with over 40 lawsuits, and the US Court of Appeals struck down the ruling in January 2022 [44].

Vaccination Hesitancy within the Black Workforce

Research shows that essential workers are hesitant about the COVID-19 vaccine even though they are at an increased risk of contracting COVID-19 [45]. According to the Kaiser Family Foundation (KFF), 21% of essential workers indicated that they were "definitely not" getting the vaccine compared to 7% of non-essential workers. The KFF suggests that this may be because they tend to be less educated and more politically conservative than those who are able to work from home, both of which are associated with resistance to getting the COVID-19 vaccine [46]. Similarly, Black Americans are also at an increased risk of contracting COVID-19 but less likely to vaccinate [27, 37]. Even so, Black Americans report higher levels of fear of the virus than their White counterparts. For example, Kricorian and Turner [38] found that Black individuals, overall, were less likely to want the COVID-19 vaccine, that they intentionally delayed receiving the vaccine for longer, and that they were more mistrustful of the vaccine compared to White individuals. Consequently, only 57% of Black Americans have received at least one vaccine dose as of April 2022 [36].

Generally, Black Americans are mistrustful of the several COVID-19 vaccinations due to hundreds of years of treatment bias, neglect, experimentation, and unethical practices by medical professionals and bio-medical researchers [47]. Additionally, the spread of misinformation has led many Black people to believe that the vaccine is dangerous or more harmful than contracting the virus [38]. For Americans who are both Black and essential workers, less education, political conservatism, historical mistrust, and widespread misinformation coalesce to produce a subgroup that is resistant to COVID-19 vaccination.

Though many Black essential workers are resistant to the coronavirus vaccine, Kricorian and Turner [38] found that Black individuals were more willing to receive the vaccine if it was endorsed by medical professionals of the same race. This outcome is supported within the literature suggesting that Black individuals are more receptive to the recommendations of Black medical professionals compared to White medical professionals [48]. Moreover, the concordant pairing of Black patients with Black medical professionals is positively associated with patient satisfaction, partnership building, and clear communication among other positive factors [39–41]. These findings are critical in determining how policymakers should proceed in addressing the issue

of COVID-19 vaccination within the Black community and within the Black essential workforce.

Policy Recommendations

Racial capitalism produces adverse conditions that put Black essential workers at an added risk of contracting COVID-19 [7, 8, 42, 43], making the issue of vaccine accessibility one of health equity. This manifests as the inability to socially distance effectively as the general populace due to constraints related to both work and home life [10, 14, 21, 35, 44, 45]. Furthermore, the widespread misinformation regarding the vaccine [38] has exacerbated hesitancy among Black Americans. Additionally, rigid, tiring, and/ or hectic work schedules provide an additional barrier to vaccination [49].

To address these inequities and to assist Black essential workers in reducing the risk of illness in the ongoing pandemic *and* future pandemics, policymakers and community leaders can do three things: (1) provide funding for Black community outreach organizations to advocate for vaccination, (2) increase employee benefits, and (3) increase vaccine accessibility as seen in Table 1. Most essential industries have not been mandated to receive the vaccination; however, the implementation of these mandates without addressing these nuances could potentially result in the resignation and further resistance on behalf of Black essential workers.

Funding Black Community Vaccine Outreach Programs

Black community leaders, medical professionals, and public officials have a responsibility to address the mistrust and misinformation surrounding the COVID-19 virus and the vaccine [18, 26], more specifically, providing transparent information regarding vaccine development, potential side effects, and addressing any concerns or questions [50]. Effective community interventions, such as the Black Coalition Against COVID-19 and Loma Linda University's

Policy Recommendations

Funding Black community vaccine outreach programs

Requiring employers to increase employee benefits

Legislatively eliminate employer liability to increase vaccine accessibility

COVID-19 faith summit, have the potential to create public messaging and public health activities sponsored by familiar faces and organizations [15, 49]. The Black Coalition Against COVID-19 is a coordinated outreach program between community, health, and religious organizations, which continue to conduct live-streamed meetings with a panel of medical experts on topics pertaining to the virus and vaccine. These meetings have reached over 750,000 people in a single event. Similarly, Loma Linda University partnered with two organizations dedicated to addressing prominent issues within the Black community, the Inland Empire Concerned African American Churches (IECAAC), and the Congregations Organized for Prophetic Engagement (COPE). Together, these institutions hosted a comprehensive COVID-19 information session with church pastors who then distributed registration paperwork and managed appointment lists for church members.

Initiatives such as The Black Coalition Against COVID-19 and Loma Linda University's faith summit suggest that seminars regarding vaccine literacy on both the state and local level have the potential to make a significant impact [15, 49]. Policymakers may support similar community initiatives by providing additional funding for their operation and outreach. Additionally, an increase in funding and coordination with Black community leaders may provide the infrastructure needed for more innovative vaccine distribution strategies, for example, the implementation of mobile vaccine clinics such as Prisma Health's mobile vaccination unit in South Carolina [51]. Mobile vaccination clinics should set up in and around public spaces commonly occupied by essential workers (e.g., bus stops, grocery stores, gas stations) and operate outside of normal business hours to accommodate irregular schedules. Similar strategies such as door-to-door vaccination teams in Black communities like Virginia's Health Wagon could also assist Black essential workers in receiving the COVID-19 vaccine.

At the federal level, the CDC has provided over 3 billion dollars to health departments and community-based organizations across communities disproportionately impacted by COVID-19 [52]. Increases in this funding at the state and local levels could further support Black organizations and therefore their leaders in addressing vaccine hesitancy within their community. In considering the importance of church organizations within Black American culture, policymakers could facilitate collaboration between religious/community institutions and health organizations by requiring municipal health departments to reach out to larger churches throughout their county to conduct a needs assessment surrounding the COVID-19 vaccine. Based on the vaccination needs of church members, health officials may be able to pinpoint specific churches or organizations that could benefit most from information sessions, additional funding, etc.

Requiring Employers to Increase Employee Benefits

Additional employee benefits in the form of increased paid time off (PTO) and scheduling flexibility for full-time *and* part-time employees are proactive measures that may better support Black essential workers in receiving the COVID-19 vaccine. As of June 2021, 53% of employers were offering PTO for employees to get vaccinated while only 34% were offering time off to recover from side effects [53]. Employers increasing the amount of PTO and expanding PTO options to part-time workers may provide them the opportunity to take leave to receive the vaccine or to recover from COVID-19 without either (a) taking time out of their typical day off and/or (b) sacrificing a day of wages.

Regarding scheduling flexibility, leniency on behalf of employers in allowing employees to take unscheduled leave to receive the vaccination is essential. For state and federal (e.g., OSHA) policymakers responsible for low-income or highly diverse areas with a significant number of essential workers, working with and pushing employers to implement these policies is necessary to bring these changes to fruition, for example, the mandating of certain numbers of PTO hours for vaccination and vaccine-related side effects. Similarly, drafting policies that prevent employers from firing employees who cannot work scheduled shifts either because of an opportunity for vaccination or because they are recovering from side effects.

LegislativelyEliminate Employer Liability to Increase Vaccine Accessibility

Vaccine accessibility refers to Black essential workers being able to receive the vaccine without sacrificing time, wages, or effort to do so [54]. Research shows that Black essential workers are more likely to experience unstable schedules, making it difficult to take time off for receiving the vaccine [49]. Accessibility may come in the form of employers, both private and public, partnering with health organizations (e.g., state health departments, clinics, pharmacies, hospitals) to provide opportunities for vaccination while employees are at work. Currently, only 6% of employers provide onsite vaccinations, 11% are to begin shortly, and 20% are considering onsite programs [53]. To increase onsite vaccination sites, the CDC has provided guidance for employers while the US Equal Employment Opportunity Commission (EEOC) has permitted employers to provide on-site access to and encourage vaccination among employees [55, 56].

The CDCs guidelines suggest that onsite or mobile clinics may be good for employers with many workers with predictable schedules [57]. For example, Amazon has rolled out on-site vaccine clinics for front-line employees living in Missouri, Nevada, and Kansas, providing access to over half a million employees [58]. The company also partnered with Virginia Mason Franciscan Health and vaccinated over 50,000 people at their meeting center in Seattle. For smaller employers with a high proportion of Black workers, parking lots and common areas at places of employment can be used as pop-up vaccination sites to encourage employees to receive initial and booster vaccination.

Policymakers could encourage employers to implement vaccination programs for their employees; however, when working with third-party vaccine providers to provide onsite vaccination, employers run the risk of being perceived as coercive by providing some sort of incentive (e.g., money, gifts, additional PTO, services) in return for vaccination [59]. The EEOC's guidance regarding such incentives is vague. As such, policymakers at the state or federal can protect employers by setting the standard of what constitutes an incentive. For example, specific monetary amounts, whether offering additional PTO is considered an incentive, and the number of goods or services that can be given to employees to incentivize vaccination. This legislation could potentially shield employers from legal action.

Conclusion

Under racial capitalism, [7-9] socioeconomic influences (e.g., low wage positions) reinforced by structurally racist power structures (e.g., residential segregation, housing discrimination) can trap Black essential workers in conditions in which they get infected, transmit, and die from the COVID-19 virus [3]. In addition to occupying low-wage essential positions (e.g., transportation, food service, healthcare) more so than White Americans [16], Black Americans are significantly more likely to occupy crowded households [19] and have pre-existing health conditions that increase the risk of severe illness or death due to COVID-19 [60-62]. As low-wage workers, they are also less likely to have adequate health care coverage, and Black Americans are more likely to have preexisting health conditions [15]. These factors amount to a higher risk of contracting the coronavirus. As such, policy intervention is necessary to focus on increasing vaccination among this population to reduce the spread of the virus.

The fight against COVID-19 is multifaceted with multiple proactive strategies (e.g., high-quality PPE, mask wearing) and reactive strategies (e.g., diagnostic testing, paid sick leave) needed to assist essential workers during the ongoing pandemic. These strategies are also essential in future pandemics as they can be implemented before a vaccine can be developed. Even so, vaccination is the most effective method of preventing illness or death among Black Essential workers on a large scale [18, 26, 27]. Unfortunately, Black Americans face significant barriers to getting vaccinated, resulting in lower rates of vaccination compared to their White counterparts [27, 37]. For example, in addition to scheduling issues and limited time off, they are generally hesitant to receive the vaccine due to widespread misinformation and distrust of the American medical system [27, 38]. In this context, policymakers should work to (1) allocate funding to Black community vaccination programs, (2) require employers to allow vaccine- and illnessrelated scheduling flexibility for both full-time and part-time employees, and (3) legislatively eliminate employer liability for providing on-site vaccinations. These recommendations begin to address the pandemic-mediated impact of racial capitalism on Black essential workers and better equip employers and community leaders to support these workers.

These policy suggestions apply to the Black essential worker population beyond the COVID-19 pandemic. By addressing barriers to vaccination within this population now, it is possible that Black essential workers would not be as adversely affected in future public health crises. If additional funding was allocated to Black community outreach programs, requirements were implemented to solidify scheduling flexibility for all essential employers, and if legislators acted to mitigate liability for employers wanting to provide on-site vaccination opportunities, the Black community would potentially fare better in the current and future pandemics. Assisting the Black essential workforce in combatting COVID-19 is not only an act of integrity on behalf of policymakers but has significant economic ramifications for the USA.

Throughout American history, Black bodies have been routinely sacrificed at the altar of racial capitalism. This sacrifice has come with little to no intervention or response from policymakers at the municipal, state, and federal levels. However, in the era of Black Lives Matter and the recognition of mounting racial inequities, it is high time for legislators to respond appropriately. If not to dismantle the racist structures that exist that sustain social inequalities, then to address the side effects of living in a racist society. Policymakers have a responsibility to assist Black essential workers in protecting themselves from the COVID-19 virus.

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Declarations

Ethics Approval This work did not involve data collection from human or animal participants.

Consent to Participate This work did not involve human participants and therefore consent to participate was not applicable.

Consent for Publication This work does not contain data from human participants and therefore does not require participant consent for publication.

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References

- The New York Times, Coronavirus in the U.S.: latest map and case count, The New York Times, 2022. https://www.nytimes.com/ interactive/2021/us/covid-cases.html. Accessed 23 Aug 2021.
- Nania R. COVID-19 is especially fatal to older African Americans. AARP, 2020. https://www.aarp.org/health/conditions-treat ments/info-2020/older-african-americans-coronavirus-risk. html. Accessed 10 Mar 2021.
- Vasquez Reyes M. The disproportional impact of COVID-19 on African Americans. Health Hum Rights. 2020;22(2):299–307.
- Hospitalization and death by race/ethnicity, Centers for Disease Control and Prevention, 2022. https://www.cdc.gov/coronavirus/ 2019-ncov/covid-data/investigations-discovery/hospitalizationdeath-by-race-ethnicity.html. Accessed 19 May 2022.
- Hill L. COVID-19 cases and deaths by race/ethnicity: current data and changes over time, KFF, 2022. https://www.kff.org/coronavirus-covid-19/issue-brief/covid-19-cases-and-deaths-by-race-ethni city-current-data-and-changes-over-time/. Accessed 16 Mar 2022.
- Leong N. Racial capitalism, Harv Law Rev126(8):2151–2226, 2013, [Online]. Available: https://cdn.harvardlawreview.org/wpcontent/uploads/pdfs/vol126_leong.pdf.
- 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(11):1244– 53. https://doi.org/10.1093/aje/kwaa126.
- Laster Pirtle WN. Racial capitalism: a fundamental cause of novel coronavirus (COVID-19) pandemic inequities in the United States. Heal Educ Behav. 2020;47(4):504–8. https://doi.org/10. 1177/1090198120922942.
- Robinson CJ, Cedric J. Robinson on racial capitalism, Black internationalism, and cultures of resistance. London: Pluto Press, 2019.
- Robinson, CJ. Black Marxism, revised and updated third edition: The making of the black radical tradition. Chapel Hill: UNC Press Books, 2020. Available: https://www.google.com/books/edition/ Black_Marxism_Revised_and_Updated_Third/Tjf_DwAAQBAJ? hl=en&gbpv=1&pg=PP1&printsec=frontcover.
- Robinson CJ. The terms of order. New York: State University New York Press, 1980. Available: https://www.google.com/books/

edition/The_Terms_of_Order/LhYV14mscZUC?hl=en&gbpv= 1&dq=Robinson+CJ.+%22The+terms+of+order%22+SUNY+ Press,+1980.&pg=PA1&printsec=frontcover.

- 12. Robinson CJ. Notes toward a" Native" Theory of History. Rev (Fernand Braudel Center). 1980;4(1):45–78.
- Robinson MN, Thomas Tobin CS. Is John Henryism a health risk or resource?: exploring the role of culturally relevant coping for physical and mental health among Black Americans. J Health Soc Behav. 2021;62(2):136–51. https://doi.org/10.1177/ 00221465211009142.
- 14. Yu Q, Salvador C, Melani I, Berg M, Neblett E, Kitayama S. Racial residential segregation and economic disparity jointly exacerbate the COVID-19 fatality in large American cities. Ann Acad Sci. 2020. https://doi.org/10.31234/osf.io/xgbpy.
- Taylor J. Racism, inequality, and health care for African Americans. The Century Foundation, 2019. https://tcf.org/conte nt/report/racism-inequality-health-care-african-americans/? agreed=1.
- Rogers TN, Rogers CR, VanSant-Webb E, Gu LY, Yan B, Qeadan F. Racial disparities in COVID-19 mortality among essential workers in the United States. World Med Heal Policy. 2020;12(3):311–27. https://doi.org/10.1002/wmh3.358.
- Perea JF. The echoes of slavery: recognizing the racist origins of the agricultural and domestic worker exclusion from the National Labor Relations Act. SSRN Electron J. 2012; 95. https://doi.org/10.2139/ssrn.1646496.
- Garcia M, Homan P, Garcia C, Brown T. The color of COVID-19: Structural racism and the pandemic's disproportionate impact on older racial and ethnic minorities. J Gerontol Ser B. 2020;76. https://doi.org/10.1093/geronb/gbaa114.
- Almagro M, Coven J, Gupta A, Orane Hutchinson A. Racial disparities in frontline workers and housing crowding during COVID-19: Evidence from geolocation data. SSRN Electron J. 2020. https://doi.org/10.2139/ssrn.3695249.
- Cybersecurity and Infrastructure Security Agency, "Guidance on the essential critical infrastructure workforce: ensuring community and national resilience in COVID-19 response," 2020. [Online]. Available: https://www.cisa.gov/publication/guida nce-essential-critical-infrastructure-workforce.
- Bunch L. A tale of two crises: addressing COVID-19 vaccine hesitancy as promoting racial justice. HEC Forum. 2021;33(1– 2):143–54. https://doi.org/10.1007/s10730-021-09440-0.
- 22. Miroff N, Natanson H, Bellware K, Shaver K. States begin imposing harsher measures to contain coronavirus as U.S. cases rise sharply. The Washington Post. 2020. Available: https:// www.washingtonpost.com/health/states-begin-imposing-harsh er-measures-to-contain-coronavirus-as-us-cases-rise-sharply/ 2020/03/15/267577a6-65b3-11ea-acca-80c22bbee96f_story. html.
- Rho HJ, Brown H, Fremstad S. A basic demographic profile of workers in frontline industries. Center for Ecnomic and Policy Research, 2020. https://cepr.net/a-basic-demographic-profileof-workers-in-frontline-industries/ (Accessed Jun. 10, 2021).
- 24. Kinder M, Stateler L. Essential workers comprise about half of all workers in low-paid occupations. They deserve a \$15 minimum wage. Brookings, 2021.
- 25. Roberts JD, et al. Clinicians, cooks, and cashiers: examining health equity and the COVID-19 risks to essential workers. Toxicol Ind Health. 2020;36(9):689–702. https://doi.org/10. 1177/0748233720970439.
- Schuchat A. Public health response to the initiation and spread of pandemic COVID-19 in the United States, February 24-April 21, 2020, MMWR Morb Mortal Wkly Rep 69(18): 551–556, 2020. https://pubmed.ncbi.nlm.nih.gov/20736107/.
- 27. Block R, Berg A, Lennon R, Miller E, Nunez-Smith M. African American adherence to COVID-19 public health

recommendations. Heal Lit Res Pract. 2020;4(3):e166–70. https:// doi.org/10.3928/24748307-20200707-01.

- Vopham T, Weaver MD, Adamkiewicz G, Hart JE. Social distancing associations with COVID-19 infection and mortality are modified by crowding and socioeconomic status. Int J Environ Res Public Health. 2021;18(9):4680. https://doi.org/10.3390/ijerp h18094680.
- Garnier R, Benetka JR, Kraemer J, Bansal S. Socioeconomic disparities in social distancing during the COVID-19 pandemic in the United States: Observational study. J Med Internet Res. 2021;23(1):1–8. https://doi.org/10.2196/24591.
- Sehgal AR, Himmelstein DU, Woolhandler S. Feasibility of separate rooms for home isolation and quarantine for COVID-19 in the United States. Ann Intern Med. 2021;174(1):127–9. https://doi. org/10.7326/M20-4331.
- Perez A. Mobility and essential travel during COVID-19, Active Transportation Alliance, 2020. https://activetrans.org/blog/mobil ity-and-essential-travel-during-covid-19 (Accessed Jun. 10, 2020).
- Geronimus AT, Hicken M, Keene D, Bound J. 'Weathering' and age patterns of allostatic load scores among blacks and whites in the United States. Am J Public Health. 2006;96(5):826–33. https:// doi.org/10.2105/AJPH.2004.060749.
- Carlsten C, et al. COVID-19 as an occupational disease. Am J Ind Med. 2021;64(4):227–37. https://doi.org/10.1002/ajim.23222.
- Burki T. Increasing COVID-19 vaccine uptake in Black Americans. Lancet Infect Dis. 2021;21(11):1500–1. https://doi.org/10. 1016/s1473-3099(21)00637-x.
- 35. Kinder M, Ford T. Black essential workers' lives matter. They deserve real change, not just lip service, Brookings, 2020.
- Ndugga N, Hill L, Artiga S, Haldar S. Latest data on COVID-19 vaccinations by race/ethnicity, Keiser Family Foundation, 2022. https://www.kff.org/coronavirus-covid-19/issue-brief/latest-dataon-covid-19-vaccinations-by-race-ethnicity/.
- Laurencin CT. Addressing justified vaccine hesitancy in the Black community. J Racial Ethn Heal Disparities. 2021;8(3):543–6. https://doi.org/10.1007/s40615-021-01025-4.
- Kricorian K, Turner K. COVID-19 vaccine acceptance and beliefs among Black and Hispanic Americans. PLoS One. 2021;16(8):e0256122. https://doi.org/10.1371/journal.pone.02561 22.
- Berklan J. CMS: no test-out option for health worker vax mandate, McKnights Long-Term Care News, 2021. https://www.mcknights. com/news/cms-no-test-out-option-for-health-worker-vax-manda te/.
- 40. Centers for Medicare and Medicaid Services. Vaccination regulation: enforcement of rule imposing vaccine requirement for health care staff in Medicare-and Medicaid-certified providers and suppliers is suspended so long as court ordered injunctions remain in effect, 2021.
- Mendelson L. Mandatory employee vaccines coming to a state near you?, Littler Mendelson, 2021. https://www.littler. com/publication-press/publication/mandatory-employee-vacci nes-coming-state-near-you.
- Goodman B. Sweeping new vaccine mandates will impact most U.S. workers, WebMD, 2021. https://www.webmd.com/vaccines/ covid-19-vaccine/news/20210909/sweeping-new-vaccine-manda te-will-impact-most-us-workers.
- O. S. and H. Administration. COVID-19 vaccination and testing ETS, United States Department of Labor, 2021. https://www.osha. gov/coronavirus/ets2.
- Stark L. Biden administration to withdraw COVID-19 vaccination and testing regulation aimed at large businesses, CNN, 2022. https://www.cnn.com/2022/01/25/politics/vaccine-mandate-oshawithdrawn/index.html.
- Palosky C. Essential workers employed outside health care are less enthusiastic about getting a COVID-19 vaccine than other adults,

Keiser Family Foundation, 2021, April 23. https://www.kff.org/ coronavirus-covid-19/press-release/essential-workers-employedoutside-health-care-are-less-enthusiastic-about-getting-a-covid-19-vaccine-than-other-adults/.

- 46. Stroope S, Kroeger RA, Williams CE, Baker JO. Sociodemographic correlates of vaccine hesitancy in the United States and the mediating role of beliefs about governmental conspiracies. Soc Sci Q. 2021;102(6):2472–81. https://doi.org/10.1111/ssqu.13081.
- Gwynn RC. Health inequity and the unfair impact of the COVID-19 pandemic on essential workers. Am J Public Health. 2021;111(8):1459–62. https://doi.org/10.2105/ajph.2021.306386.
- Saha S, Beach MC. Impact of physician race on patient decisionmaking and ratings of physicians: a randomized experiment using video vignettes. J Gen Intern Med. 2020;1–8. https://doi.org/10. 1007/s11606-020-05646-z.
- Schneider D, Harknett K. How work schedule instability matters for workers, families, and racial inequality, Shift, no. October, 2019. Available: https://shift.hks.harvard.edu/files/2019/10/Its-About-Time-How-Work-Schedule-Instability-Matters-for-Worke rs-Families-and-Racial-Inequality.pdf.
- Doherty IA et al. COVID-19 vaccine hesitancy in underserved communities of North Carolina., medRxiv Prepr Serv Heal Sci. 2021;1–30. https://doi.org/10.1101/2021.02.21.21252163.
- Rural COVID-19 innovations, Rural Health Information Hub, 2021. https://www.ruralhealthinfo.org/assets/4743-21176/ruralcovid-19-innovations.pdf.
- CDC. COVID-19 vaccine equity, Centers for Disease Control and Prevention., 2021. https://www.cdc.gov/coronavirus/2019-ncov/ community/health-equity/vaccine-equity.html.
- Miller S. Employers step up efforts to raise workers' vaccination rates, SHRM, 2021. https://www.shrm.org/resourcesandtools/hrtopics/benefits/pages/employers-step-up-efforts-to-raise-workervaccination-rates.aspx.
- Karim SA. COVID-19 vaccine affordability and accessibility. Lancet. 2020;396(10246):238. https://doi.org/10.1016/S0140-6736(20)31540-3.

- 55. Shen MJ, Peterson EB, Costas-Muñiz R, Bylund CL. The effects of race and racial concordance on patient- physician communication: a systematic review of the literature. J Racial Ethn Heal Disparities. 2018;5(1):117–40. https://doi.org/10.1007/ s40615-017-0350-4.
- Hardaway C, Mcloyd V. Escaping poverty and securing middle class status: how race and socioeconomic status shape mobility prospects for African Americans during the transition to adulthood. J Youth Adolesc. 2009;38(2):242–56. https://doi.org/10. 1007/s10964-008-9354-z.Escaping.
- CDC. Workplace vaccination program," Centers for Disease Control and Prevention, 2021. https://www.cdc.gov/coronavirus/2019ncov/vaccines/recommendations/essentialworker/workplace-vacci nation-program.html.
- Amazon Staff. Amazon's COVID-19 blog, Amazon, 2021. https:// www.aboutamazon.com/news/company-news/amazons-covid-19blog-updates-on-how-were-responding-to-the-crisis.
- 59. What you should know about COVID-19 and the ADA, the Rehabilitation Act, and other EEO Laws, Commission, U.S. Equal Employment Opportunity, 2021. https://www.eeoc.gov/wysk/what-you-should-know-about-covid-19-and-ada-rehabilita tion-act-and-other-eeo-laws.
- 60. Abedi V, et al. Racial, economic, and health inequality and COVID-19 infection in the United States. J Racial Ethn Heal Disparities. 2021;8(3):732–42. https://doi.org/10.1007/ s40615-020-00833-4.
- 61. Alcendor DJ. Racial disparities-associated COVID-19 mortality among minority populations in the US. J Clin Med. 2020;9(8):2442. https://doi.org/10.3390/jcm9082442.
- Millett GA, et al. Assessing differential impacts of COVID-19 on black communities. Ann Epidemiol. 2020;47:37–44. https://doi. org/10.1016/j.annepidem.2020.05.003.

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