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Health Disparities and Their Effects on Children and Their Caregivers During the Coronavirus Disease 2019 Pandemic

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KEYWORDS

• COVID-19 pandemic • Health disparities in children • Systemic racism

KEY POINTS

- COVID-19 disproportionately affects children of color, and children considered vulnerable due to their living situations or underlying health conditions.
- Children of color have higher rates of hospitalization and more serious disease from COVID-19 than white children, mirroring the demographics of adult patients with COVID-19.
- Health disparities of children uncovered during the COVID-19 pandemic are due to structural racism, underlying medical problems, limited access to care, the occupations/ employment of their caregivers, and the limited ability to minimize exposure/transmission in their home environments.
- To reduce health disparities among vulnerable populations of children during this
 pandemic and in the future, an intensified effort must be initiated and sustained to
 dismantle the social determinants of health, particularly measures to provide economic
 stability for families and access to health care and community infrastructure to support
 technology needed for education and telemedicine to achieve health equity.

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INTRODUCTION

As of the end of January 2021, there have been more than 26,000,000 infections and more than 435,000 deaths attributable to COVID-19.¹ Unfortunately, racial and ethnic minorities have been affected most significantly by this pandemic, particularly African Americans, Latinx Americans, and Indigenous Americans.² For example, African Americans compose 13.4% of the US population but represent 15.5% of COVID-19-related deaths.¹ In addition, although severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) affects children to a lesser extent than adults, non-Hispanic black and Hispanic children are hospitalized at a higher rate than white children and have more serious disease.^{3,4} Finally, children with underlying health conditions, including obesity, chronic lung disease, and prematurity are hospitalized with COVID-19 at a higher rate than those without chronic medical conditions.³ This disproportionate impact of COVID-19 in minoritized communities has been linked to pre-existing health disparities.^{5–7}

Health disparities are defined as differences among specific populations in the ability to achieve full health potential (as measured by differences in incidence, prevalence, mortality, burden of disease, and other adverse health conditions).⁵ Among children, multiple factors contribute to these disparities, including economic stability, and access to health care. According to the Annie E. Casey Foundation, before the current pandemic, 12 million children in the United States were living in poverty in 2019, including one-third of African American and Native American children and 25% of Latinx children.⁸ During the same period, of the 4.4 million children without health insurance, 14% were Native American, 9% were of Hispanic descent, and 18% were immigrants.⁸ At present, owing to the impact of the pandemic on job security, more than 50% of African American, Latinx, and multiethnic adults are now without medical insurance, directly affecting the health security of their children.⁸ With the onset of the pandemic and the social and political upheaval felt by many disenfranchised communities, these well-documented disparities (and the importance of addressing them) have again been brought to the attention of the medical community.^{2–8}

This overview will examine the effects of these health disparities in various populations of children in this country. We will first examine the historical context of health disparities, how they developed, and why they still exist. We will then examine how specifically the COVID-19 pandemic impacted these disparities among children and adolescents, both directly and indirectly. Finally, we hope to provide some recommendations to reduce these disparities.

Historical Review of Health Care Disparities

Health care disparities have been described in the medical literature over the decades. Unequal distribution of resources along with the social determinants of health (economic stability, education, social and community context, health and health care and neighborhood) all contribute to the overall health and well-being of individuals in our society.⁹

A well-established reason for inequitable distribution of resources is systemic racism (racial bias across institutions and society), which has operated over centuries and has impacted generations of citizens in this country. This form of racism is more subtle than interpersonal racism and is unattributable to a particular individual or group of individuals. Examples include "red-lining" (restricting financial services, including loans and mortgages, to persons living in certain neighborhoods based on race), denying land ownership to ethnic/racial minorities, and minimizing access to

resources such as healthy foods and transportation in communities where racial/ ethnic minorities tend to live. Systemic racism has also contributed to decreased property values in communities of color, reducing federal, state, and local services (such as school funding and community resources) to impoverished communities. These policies have become embedded into the fabric of our society, and over time have become the status quo.^{9,10}

Systemic racism has resulted in devastating effects on communities of color. Over centuries, policies endorsed and supported by systemic racism have limited opportunities where racial/ethnic minorities live, work, and obtain an education.⁹ A longstanding history of the denial of basic rights and resources has burdened African Americans with lower socioeconomic status relative to whites, along with underresourced communities, which over time has contributed to comorbid conditions leading to vulnerability to poor health outcomes.¹¹ In addition, migrants from certain countries were not automatically granted citizenship, resulting in diminished opportunities to improve their economic status. Citizens of Hispanic descent, particularly those whose families emigrated from Mexico and Central America, have been denied home ownership and have lived under the scrutiny of immigration laws and policies.¹² Indigenous Americans have suffered forced migration and forced assimilation under racist laws and policies. Therefore, based on the policies, laws, and social structure of the United States, structural racism was successful in preventing communities of color to thrive. Structural racism also significantly accounts for the differences in health and well-being among ethnic and racial minorities in this country.^{13,14} In effect, centuries of discrimination and racial trauma have negatively impacted the overall health of people of color.11-14

While racism has played a major role in health disparities, poorer health outcomes also have been demonstrated in patients with other medical and social constraints. Homelessness,¹⁵ physical disability and/or special care needs,^{16–19} and geography²⁰ all have been implicated in disparate health outcomes among adults and children. Recent work has suggested that vulnerable populations warrant close attention to ensure receipt of appropriate health care during the current COVID-19 pandemic.²¹

Health Disparities and Pandemics, Including Coronavirus Disease 2019

Historically, communities that are most impacted by new epidemics are often facing other threats to health and overall well-being.⁷ Looking back at the Spanish flu in 1918 and the AIDS epidemic in the 1980s to the 1990s, marginalized communities were hit the hardest.⁷

Evidence demonstrates that although whites may have higher cases of COVID-19 based on raw numbers, blacks and Hispanics have higher rates and mortality based on percentage of the population.¹ There are many reasons for these discrepancies, most of which surround social determinants of health. Access to health care, immigration status, and language barriers all contribute to health inequity among Hispanics. For example, currently, Hispanics have the lowest rates of medical insurance coverage of all racial/ethnic groups in the United States (19.8% compared with 5.4% non-Hispanic whites). Compounding this statistic is that immigration status might impede eligibility to access health care, and almost 30% of this population is not fluent in English, thus posing additional barriers.¹² In addition, underfunding of the American Indian health system along with the additional burden of chronic disease predisposes this population to poorer outcomes secondary to COVID-19.¹⁴

Historically, blacks and Hispanics have higher disease burdens in the case of chronic lung disease, heart disease, diabetes, and obesity, conditions that also are risk factors of higher risk of mortality due to COVID-19.^{11,12} These disparities extend

to children as well. For children hospitalized with COVID-19-related illnesses, 45.7% of Hispanic children and 29.8% of black children had an underlying medical condition (obesity, chronic lung disease, or prematurity) compared with 14.9% of white children.³ However, when social determinants of health, including neighborhood conditions, employment, and access to healthy foods are superimposed on these biological risks, the reasons for the higher case load and mortality become clear.⁷ Many African Americans, Hispanic Americans, and Indigenous Americans live in dense housing (often in multigenerational families) and therefore are unable to socially distance. Strategies to minimize risk, such as facial coverings and frequent handwashing, may not always be attainable if someone in the household tests positive for COVID-19, making appropriately quarantining/isolation impossible.^{6,11-14} In addition, essential workers typically tend to be people of color, who, despite the pandemic, must interact daily with the public (as opposed to telecommuting), increasing their risk of exposure.⁶

Impact of Health Disparities and Coronavirus Disease 2019 on Specific Pediatric Populations

Newborns

Amid this pandemic, important attention must be directed to the medical outcomes of neonates. The effects of SARS-CoV-2 extend across the antenatal to neonatal continuum, particularly affecting communities that traditionally have been marginalized. Studies of pregnant and parturient women in major US cities have demonstrated increased SARS-CoV-2 infection and/or seroprevalence among ethnic/racial minorities, and national data indicate an increased risk of death among infected Hispanic and non-Hispanic black women.^{22–25} Additionally, pregnant women infected with SARS-CoV-2 have an increased risk of preterm delivery,^{26,27} which may exacerbate the known disparity in such deliveries among African American women in the United States.^{28,29} Finally, Niles and colleagues³⁰ argue that care and non–evidence-based policies implemented during the outbreak, including early inductions and elective cesarean deliveries (to manage hospital volumes) and limiting care partners during labor and delivery, disproportionately affect outcomes among women of color. These factors may reduce or eliminate opportunities for establishment of the maternal-neonatal dyad.

Data indicate rates of neonatal acquisition of SARS-CoV-2 at approximately 2% to 7%, with newborns presenting predominately with respiratory symptoms and being more significantly ill than older children.^{31,32} Intrauterine and postnatal acquisition of SARS-CoV-2 infection in newborns has been described, although the mechanisms and risk factors for neonatal infection are not completely clear.^{31,33–35} Additionally, specific data on racial disparities among SARS-CoV-2-infected newborns still are being investigated.

Further challenges remain in hospital-based newborn care during the pandemic, which may directly impact minoritized communities. In April, 2020, the American Academy of Pediatrics (AAP) recommended temporary separation of SARS-CoV-2-positive mothers from their newborns after birth to minimize the risk of neonatal infection.³⁶ Subsequent data demonstrated decreased rates of immediate and long-term breastfeeding among separated maternal-neonatal dyads.³⁷ These results, along with data showing no increased risk of neonatal infection with rooming-in, led the AAP in July 2020 to endorse room sharing (with appropriate infection control practices) for healthy babies with their nonacutely ill mothers.³⁶ However, the previous restrictions may have impaired nursing practices among African American mothers, who are less likely to initiate and continue breastfeeding through infancy.³⁸

Additional stressors may occur at home and in outpatient settings. Newborn care (and provision of discharge instructions) to nonmaternal caregivers may be required, especially if an ill mother remains hospitalized. However, as a disproportionate number of cases of SARS-CoV-2 occur in racial/ethnic minorities,³⁹ these additional caretakers may place the baby at risk for postnatal viral acquisition and illness. Furthermore, hand hygiene and mask wearing (with breastfeeding and other components of neonatal care) still are recommended for mothers and family members convalescing from SARS-CoV-2 illness,³⁶ which may represent an additional expense for families. Finally, routine newborn appointments (for state newborn screening, hyperbilirubinemia monitoring, and weight/feeding assessment) may be delayed due to limitations in physical space (for isolating infected or at-risk patients) and personal protective equipment (for providers) in primary care offices. Telemedicine and home health nursing visits, evolving alternatives to traditional office appointments, seem to be attractive models for pediatric primary care in the midst of the pandemic. However, minoritized communities, many with limited financial resources and technology access, residua of racial residential segregation, and existent language barriers, may be unable to use these opportunities, possibly worsening disparities in short-term neonatal outcomes.

School-aged children and adolescents

Almost 60 million students have been significantly affected from school closures due to COVID-19.⁴⁰ Evidence has grown about the adverse effects on the physical, developmental, socioemotional, and environmental health of children before the COVID-19 pandemic by various social determinants of health, including poverty and racism. The impact has exponentially increased since the pandemic's arrival.

One example of these effects on children is the growth of the nation's digital divide. Before the pandemic, underserved and marginalized populations already had difficulty accessing stable telephone and Internet connections. Per the Pew Research Center, in 2019, 79% of white households had home broadband connection, compared with 66% of black households and 61% of Hispanic households.⁴¹ Financial disparities also impact this divide; 92% of those who make \$75,000 or more had home broadband compared with 87% who make \$50,000 to \$74,999, 72% who make \$30,000 to \$49,999, and 56% who make \$30,000 or less.⁴¹ The pandemic has intensified this inequity, and as health care systems nationwide converted to telehealth options to continue to provide care, so did the amplification of the digital divide. Social determinants of health fostered this negative impact, in mechanisms ranging from limited or lack of Internet access, patients' level of literacy on use of technology, building rapport and trust with patients, and cost.⁴² This divide leads to families trying to access the Internet in not ideal ways via public spaces, such as parking lots.⁴³ Those individuals who come from a lower socioeconomic status, elderly, racial/ethnic minority, and/or with disabilities, need to be considered as the digital divide is addressed.⁴⁴ Cities (such as Baltimore, Philadelphia, and San Antonio) and organizations have become creative in delivering secure Internet connections to underserved communities. The need for continued advocacy nationwide on this effort is imperative.⁴³

The COVID-19 pandemic may also have impacted childhood obesity. One study using a microsimulation model of students followed from kindergarten through fifth grade showed that mean body mass indices and childhood obesity prevalence increased as the time of the school closure increased (based on different scenarios of school closures due to COVID-19).⁴⁵ A 0.640% change in childhood obesity was noted from a 2-month closure alone for kindergarten students (closed April and May 2020), and a 2.373% change was noted from closures and decreased activity from April 2020 through December 2020.⁴⁵ More of an impact on childhood obesity was noted in male, non-

Hispanic black and Hispanic children.⁴⁵ Another study demonstrated that decreased physical activity and increased sedentary behavior were noted in children in the United States, early in the COVID-19 pandemic, and specifically more among children aged 9 to 13 years compared with children aged 5 to 8 years.⁴⁶ There is guidance from the AAP on identifying children at risk for obesity, acknowledging and addressing the inequities in accessing opportunities and obesity rates, and supporting families on the importance of healthy eating and physical activity during the COVID-19 pandemic.⁴⁷

Unique childhood populations

During the 2018 to 2019 academic year, more than 7 million children in the nation received special education services in school, with the highest percentage for American Indian/Alaska Native students at 18%.⁴⁸ It was reported that 16% of Black students, 14% of white students, 14% of students of 2 or more races, and 13% of Hispanic students were reported to have disabilities requiring special education services.48 Jeste and colleagues,⁴⁹ in evaluating how access to educational and health care services have changed since the pandemic, noted that 74% of parents of children with disabilities reported their children lost at least one therapy or educational service, 56% reported their children received "at least some" services, and 36% reported losing access to a health care provider. These data indicate that the pandemic has adversely affected daily functioning and routine of children with special needs. Depending on the type of disability (for example, autism spectrum disorder), this decrease in support may lead to an increase in challenging behaviors by frequency and/or intensity.⁵⁰ Guidance to support children with disabilities and their families receiving their educational services exist at federal and state levels, including virtual options. Although some virtual options have shown success for some students with disabilities, addressing the barriers to access and education (as previously discussed) to those options are vital for true equitable academic success for students from all backgrounds.

Before the pandemic, cases of pediatric mental illness and suicide trends have been on the rise and are concerning, as children as young as 5 years have been identified with mental health problems.⁵¹ COVID-19 has gravely affected pediatric mental health, both directly and indirectly. This pandemic is traumatizing, leading to children becoming fearful of having COVID-19 or a family member becoming ill or dying. In addition, children realize this pandemic has affected their ability to interact with peers, celebrate birthdays (or other holidays), and attend school. Parents and caregivers are also enduring this trauma and the difficulties navigating employment, providing for their families, and keeping everyone healthy. These stressors have led to missed appointments with health care providers, and for some families, worsening housing and food insecurity, significantly increasing adverse childhood experiences.

Researchers reviewed the mental health effects in children impacted by the pandemic and noted abuse, neglect, and a variety of psychiatric disorders, including suicidal ideations.⁵² Leeb and colleagues⁵³ found that starting in April 2020, pediatric mental health-related emergency department visits increased 24% in children aged 5 to 11 years, and increased 31% in children aged 12 to 17 years, when compared with 2019 data. Additionally, given the importance of schools as an option for health care delivery (specifically for mental health treatment), closures significantly disrupted these services, particularly for racial and ethnic minority students.⁵⁴ Leff and colleagues⁵⁵ further noted that black children were more than 50% less likely to come to the emergency department (ED) with a mental health condition compared with before the pandemic, possibly for a few reasons, such as unequal access to care (especially with school closures) and COVID-19 disproportionately affecting black communities and delaying seeking care.⁵⁵

Children with medical complexity are at risk of reduced health care access during the pandemic due to decreased care from home health aides and school closures, where medical care was provided during the day.⁵⁶ Because of the increased vulner-ability of these children, parents were at risk for unemployment if they were not able to work from home and at risk for mental/emotional stress without respite and in-home support⁵⁶; this further increases the isolation of these families and increases the vulnerability of children with medical complexity. Medical visits may be reduced as parents/caregivers fear exposure to COVID-19.^{8,56}

During this time of the pandemic, children are at a higher risk for maltreatment.^{56,57} With school closures the number of mandatory reporters that see children on a regular basis is significantly reduced. The more than 400,000 children in the foster care system during the pandemic are particularly vulnerable because of the shelter-in-place and social distancing executive orders that were placed to decrease the transmission of COVID-19.^{56,57} Many children in foster care have experienced adversity and trauma, which led to their initial placement.⁵⁶⁻⁵⁸ Compounding this is that social distancing in many areas meant that these children were not able to have face-to-face visits with their birth families, which may contribute to their emotional stress.⁵⁶ In some states, case workers have been either furloughed or unable to make home visits with children in care for routine safety checks, delaying the potential for reunification with birth families. In addition, delays in court proceedings delay adoptions for children in care left in a more vulnerable state as they try to navigate life as adults during a public health and economic crisis.⁵⁶

Homeless families with children do not have the privilege of adhering to the public health recommendations to decrease the spread of COVID-19.56 Sheltering in place, access to hygiene supplies, and practicing social distancing are not always possible or practical for families with housing insecurity.⁵⁵ Of those families, approximately 75% are "doubling up," that is, living with another family; approximately 14% live in shelters, 7% live in hotels or motels, and approximately 3% are unsheltered.^{56,57} During the pandemic, 78% of families experiencing homelessness are Hispanic, again in line with the health disparities seen during the pandemic.⁵⁶ Unaccompanied youth who are homeless are more likely to be African American; identify as lesbian, gay, bisexual, transgender, and gender or sexual orientation questioning (LGBTQ), or have less than a high school education.⁵⁷ According to the Annie E. Casey Foundation, 18% of families are concerned that they will not be able to pay for their rent on time during the pandemic, with higher proportions of African American families (31%) and Hispanic families (26%) compared with white families (12%).⁸ Families who are doubling up are frequently under the threat of being asked to leave due to financial or safety reasons.⁵⁶ Those living in shelters use communal bathrooms and kitchens, again making social distancing and hygiene difficult.⁵⁶ In general, contact tracing, prevention, and treatment are more difficult for families that are homeless.⁵⁶

Impact of Coronavirus Disease 2019 on Caregivers

Children depend on their parents, guardians, and/or caregivers for basic needs (food, shelter, clothing) as well as transportation, education, and health care access (ie, insurance). Any condition that impacts the caregivers' ability to provide these needs negatively impacts the overall well-being of the child. For example, a caregiver employed as an essential worker during this pandemic might be unable to provide supervision of children at home as they attend school virtually. Caregivers may be at a greater risk of exposure to COVID-19 depending on his or her employment status and might not adequately be able to quarantine upon exposure, thus increasing the

risk of infection to the entire family.⁶ In addition, many frontline jobs do not compensate workers who have to stay home due to illness, placing workers at risk of losing their source of income.^{6,8} Furthermore, many of these workers have inadequate health insurance coverage and may delay care once symptomatic, risking their own health and the health of their family and community.^{6,8}

Although the percentage of whites working essential jobs was only slightly lower than nonwhites (Hispanics, blacks, and Asians), job characteristics of essential workers varies with race/ethnicity.⁶ Approximately 12% of Whites and 17% of Asians are essential workers able to work from home, compared with 10% blacks and 9% Hispanics.^{6,8} A higher proportion of blacks tend to work in health care (eg, nursing assistants, home health care aides, ambulance drivers, housekeeping) and public safety (eg, police officers, firefighters, security guards, corrections officers, postal employees, public transportation workers, and those who work in funeral homes and crematoriums).^{6,59} Hispanics are overrepresented in the foodservice industry.^{6,60} These occupations increase the exposure risk to COVID-19 among minorities.

Impact of Coronavirus Disease 2019 on Physicians and Other Health Care Workers of Color

The COVID-19 pandemic has also had a significant effect on physician and skilled health workers of color. Of the 18.6 million health care workers in the United States, 40% are people of color (16% blacks, 13% Hispanic, and 7% Asian).^{60,61} At present, African Americans, Hispanics, and Native American constitute 5%, 5.8%, and 0.4% of practicing physicians, respectively.^{60,61} These discrepancies in themselves have led to some of the health disparities seen in minority communities, and one of the interventions to counteract this is to increase the pipeline to include more physicians of color into the profession.⁶¹ However, this pandemic has caused a disparate toll on these physicians of color. Many disproportionately practice in communities with higher rates of COVID-19 and thus are at a higher risk of exposure.^{60,61} In addition, these physicians are more likely to have chronic health conditions, placing them at higher risk for severe morbidity and mortality from COVID-19.60,61 Also, those physicians in private practice have witnessed the economic impact of the pandemic on their livelihood, and those who serve their communities in safety net health care institutions have had to deal with understaffed and underresourced personnel.⁶¹ Furthermore, when African Americans enter the health care system as patients, they are at a higher risk of receiving lower-quality care, particularly if they are treated using diagnostic criteria and clinical pathways embedded with racial bias.⁶¹ Finally, physicians of color in general are at a greater risk of developing mental health problems including anxiety, depression, posttraumatic stress disorder, imposter syndrome, and survivor guilt.^{12,61}

SUMMARY

Steps to Minimize Health Disparities and Their Impact on Children, Caregivers, and Health Care Workers During the Coronavirus Disease 2019 Pandemic and Beyond

COVID-19 has illuminated the areas of needed improvement in the delivery of equitable child health and education. Several agencies and organizations are providing guidelines on how to support families, schools, and health care systems in this effort. The Economic Policy Institute has highlighted the lessons learned and suggested a plan through "relief, recovery, and rebuilding,"⁶² where this nation critically reviews its resources and interest in child development. The Centers for Disease Control and Prevention created a resource kit to support child behavioral and mental health, categorized by age groups.⁶³ Pediatric providers must continue to check in with their families and keep open

communication. A resource to assist providers is the Roadmap to Resilience, Emotional, and Mental Health from the American Board of Pediatrics.⁶⁴

For parents and caregivers who are unable to secure economic stability and health care through employment, there must be mechanisms available to assist with access to safety net resources easily and without the threat of legal action or deportation.^{12–14,56–60}

For children of unique populations, steps to minimize the impact of COVID-19 include:

- Providing access to telehealth visits
- Endorsing caregiver support groups
- Ensuring respite care for children with complex medical conditions and their families
- Heightening awareness among other mandatory reporters
- Providing paid leave and economic assistance to foster families
- Enhancing technical support and connectivity for parents for telemedicine visits and resource acquisition
- Increasing state funding for family preservation services for children in foster care
- Offering emergency rental assistance and upholding a moratorium on evictions and foreclosures for homeless children^{55–58}

Whatever obstacle may come, be it COVID-19 or another global disaster, steps must be taken to ensure the resilience of children and adolescents and their families. In addition to those efforts, we must also ensure that our health care system has the resources and personnel needed to ensure the equitable delivery of health care services to everyone. Policies to promote the overall health and well-being of children, adolescents, and their families, including the promotion and sustaining of safety net resources, access to health care, safe living environments, and economic security, should continue to be this nation's top priority.

CLINICS CARE POINTS

- Compared with the general population, non-Hispanic blacks, indigenous Americans/Alaskan Natives, and Hispanics have higher rates of COVID-19 infection and deaths, because of several factors including:
 - Timely access to medical care
 - Poverty
 - Occupation
 - Systemic racism
- Although children in general have lower rates of COVID-19 infection and hospitalization, non-Hispanic black and Hispanic children have higher rates of hospitalization due to COVID-19 infection.
- In addition to people of color, unique populations of children at higher risk of medical complications of COVID-19 due to health disparities include:
 - Children who are immigrants
 - Children who are obese
 - $\circ~$ Children with chronic illnesses and/or disabilities
 - Children who are homeless
 - Children who are impoverished
 - Children who are in foster care
- Health disparities during the COVID-19 pandemic have also been demonstrated in education, safety net programs, and mental health support services.

- Recommendations to decrease these disparities include addressing social determinants of health:
 - Education: providing schools and families with appropriate resources to stabilize and enhance virtual learning, offering individualized instruction for students falling behind, and redesigning the educational system to focus on the whole child
 - Health and health care: monitoring and addressing the physical and mental health of patients and families during the pandemic, advocating for the elimination of barriers to COVID-19 testing and vaccines, and recommending appropriate compensation for telemedicine care
 - Economic stability: providing personal protective equipment (PPE) for all essential workers, supporting fair housing practices (rental assistance, eviction moratoria) during the pandemic, and promoting affordable/free PPE supplies to families with high-risk household members.

DISCLOSURE

The authors have nothing to disclose.

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