

Addressing inequities in COVID-19 morbidity and mortality: research and policy recommendations

Monica L. Wang,^{1,2,*} Pamela Behrman,^{3,*} Akilah Dulin,⁴ Monica L. Baskin,⁵ Joanna Buscemi,⁶ Cassandra I. Alcaraz,⁷ Carly M. Goldstein,⁴ Tiffany L. Carson,⁵ Megan Shen,⁸ Marian Fitzgibbon⁹

¹Boston University School of Public Health, Boston, MA 02118, USA

²Harvard T.H. Chan School of Public Health, Boston, MA 02115, USA

³College of Mt. St. Vincent, Bronx, NY 10471, USA

⁴Brown University, Providence, RI 02912, USA

⁵University of Alabama at Birmingham, Birmingham, AL 35294, USA

⁶DePaul University, Chicago, IL 60614, USA

⁷American Cancer Society, Atlanta, GA 30303, USA

⁸Weill Cornell Medicine, New York, NY 10065, USA

⁹University of Illinois at Chicago, Chicago, IL 60608, USA

*Wang and Behrman contributed equally to this work.

Correspondence to: Marian Fitzgibbon, mlf@uic.edu

Cite this as: *TBM* 2020;10:516–519
doi: 10.1093/tbm/ibaa055

© Society of Behavioral Medicine 2020. All rights reserved. For permissions, please e-mail: journals.permissions@oup.com.

Abstract

The COVID-19 pandemic is the greatest global public health crisis since the 1918 influenza outbreak. As of early June, the novel coronavirus has infected more than 6.3 million people worldwide and more than 1.9 million in the United States (US). The total number of recorded deaths due to COVID-19 are growing at an alarming rate globally (≥383,000) and nationally (≥109,000). Evidence is mounting regarding the heavier burden of COVID-19 infection, morbidity, and mortality on the underserved populations in the US. This commentary focuses on this global health pandemic and how mitigation of the virus relies heavily on health behavior change to slow its spread, highlighting how the pandemic specifically affects the most socially and economically disadvantaged populations in the US. The commentary also offers short, intermediate and long-term research and policy focused recommendations. Both the research and policy recommendations included in this commentary emphasize equity-driven: (1) *research practices*, including applying a social determinants and health equity lens on monitoring, evaluation, and clinical trials activities on COVID-19; and (2) *policy actions*, such as dedicating resources to prioritize high-risk communities for testing, treatment, and prevention approaches and implementing organizational, institutional, and legislative policies that address the social and economic barriers to overall well-being that these populations face during a pandemic. It is our hope that these recommendations will generate momentum in delivering timely, effective, and lifesaving changes.

Keywords

Health equity, Underserved minorities, Systemic racism, COVID-19

INTRODUCTION

The COVID-19 pandemic is the greatest global public health crisis since the 1918 influenza outbreak. As of early June 2020, the novel coronavirus has infected more than 6.3 million people worldwide [1] and more than 1.9 million in the USA [2]. The total number of recorded deaths due to COVID-19 are growing at an alarming rate globally (≥383,000) and nationally (≥89,000) [1,2]. Evidence is mounting regarding the heavier burden of COVID-19 infection, morbidity, and mortality on the underserved populations in the USA. This commentary focuses on this global health pandemic and how mitigation of the virus relies heavily on health behavior change

Implications

Practice: Behavioral scientists can contribute to an enhanced understanding of the impact of health inequities on underserved minority populations.

Policy: Prioritize high-risk communities for testing, treatment, and prevention approaches that address barriers to social and economic well-being.

Research: Apply a social determinants of health equity lens on monitoring, evaluation and clinical trials activities on COVID-19.

to slow its spread, highlighting how the pandemic specifically affects the most socially and economically disadvantaged populations in the USA. We then offer research and policy recommendations targeting COVID-19-related inequities.

The COVID-19 pandemic has exacerbated existing racial/ethnic and socioeconomic (SES) health inequities, most notably among Black Americans and low-income communities [3–6]. While Black Americans comprise less than half the population in states such as Louisiana, Michigan, and Illinois, they comprise as many as 70% of COVID-19-related deaths in those regions. As of this writing, the national COVID-19 death rate among Black Americans (23 deaths per 100,000) is 2.7 times higher than the rate for Whites, 2.5 times higher than the rate for Latinx, and is exceptionally high in several states (ranging from 27 to 88 deaths per 100,000) [7]. Native Americans, especially the Navajo Nation, have been likewise seriously impacted by the coronavirus pandemic. As of May 18, 2020, the Navajo Nation, comprised of 173,667 residents, surpassed New York and New Jersey by reporting the highest per capita rates of infection (2,304.41 per 100,000) in the USA [8].

The pandemic is also hitting low-income communities particularly hard. Since New York City began releasing COVID-19 data by zip code, the economic

divide is stark: zip codes in the bottom quartile of average incomes comprise 36% of COVID-19 cases compared to less than 10% for the wealthiest quartile [9]. Furthermore, the magnitude of disparities in COVID-19-related outcomes is likely underestimated due to inaccuracies in data collection, underreporting, undertesting, and lack of standardization in measuring demographic data [4].

Underrepresented racial/ethnic minorities (including Black Americans, Latinx, and Native Americans), lower-income communities, and essential workers suffer disproportionately higher rates of underlying health conditions (e.g., obesity, diabetes, hypertension, heart disease, respiratory illnesses) [10] that are associated with COVID-19 complications and are thus at greater risk of experiencing worse outcomes, if infected.

Guidelines to help slow the spread of the virus enacted through significant shifts in behavior include, frequent handwashing, decreased face touching, wearing masks, and physical or social distancing [11]. Disadvantaged populations are often less able to adopt these behavioral recommendations to slow spread of the virus. For example, low-income families are more likely to have limited or less access to clean running water [12] and hand sanitizer; lower-income and racial/ethnic minority populations who live in urban areas or in remote rural areas, such as Indian reservations [12], are more likely to live in more crowded, multigenerational homes and are thus less able to practice social distancing [12]; people who are under- or uninsured may delay or not seek health care; people without a car who rely on public transportation to go to work (e.g., frontline workers) cannot avoid large groups; and low-wage frontline workers cannot follow social distancing guidelines and often do not have paid sick leave [13]. These socioeconomic inequities also map onto inequities in preexisting conditions (e.g., diabetes, heart disease, respiratory conditions) linked to higher morbidity and mortality once a person is infected [14,15]. These underlying conditions are partially attributable to factors such as systemic discrimination, inadequate access to quality health care, and economic constraints that force decision-making trade-offs that limit the capacity for such populations to prioritize their overall health.

Of particular note is that race is heavily associated with SES in the USA [16] because of historic injustices stemming from institutionalized racism (e.g., Jim Crow laws, redlining) that systematically placed racial/ethnic minorities in *economically disinvested neighborhood environments* that are also more polluted and crowded (thus contributing to chronic respiratory illnesses and increasing risk of COVID-19 transmission) and in *lower-paying occupations*, including essential services [17]. Less than one fifth of Black Americans are able to work from home compared to nearly 30% of non-Latino Whites. Black Americans

are also more likely to work in essential service work (e.g., food, delivery, transportation) [13]. These circumstances position racial/ethnic minority and socioeconomically disadvantaged populations at higher risk for COVID-19 infection, morbidity, and mortality. Current inequities may be further exacerbated by inadequate health communication regarding the virus, thus increasing risk in these communities [18]. The potential for misinformation among underserved communities underscores the need for accurate science communication and the need to build trust and enhance engagement in public health measures [11]. Proactively partnering with trusted community members is critical to build the level and scope of trust needed to accelerate behavior change and increase adherence to evidence-based guidelines and advisories. Prioritization of these populations through public health messaging, research and policy actions, such as the ones detailed below, is critical to target current inequities at a population level.

RESEARCH RECOMMENDATIONS

1. *Standardize and improve accuracy of data collection.* We recommend measures be undertaken to improve the efficiency and accuracy of COVID-19 testing, incidence, and prevalence data in monitoring, evaluation, and research activities, including the collection and reporting of relevant sociodemographics, including race/ethnicity, measures of SES (e.g., income, occupation, education level), and neighborhood of residence (e.g., zip code, census tract).
2. *Apply principles of health communication and health literacy in the development of public health messaging related to COVID-19.* Conflicting and inadequate public health messaging related to COVID-19 can widen existing health inequities. Health experts, including behavioral scientists, have a responsibility to provide and disseminate accurate information and help implement behavior change measures in order to address the pandemic. There is a great need for more specific health information tailored for underserved communities. Rapid studies devoted to enhancing COVID-19 messaging and health literacy will be critical to address existing gaps in knowledge and awareness among underrepresented racial/ethnic minority groups and socioeconomically disadvantaged communities [18].
3. *Increase funding on research dedicated to understanding social determinants of COVID-19 disease-related morbidity and mortality [19].* It is critical to understand how key social determinants of health (e.g., race/ethnicity, SES, immigration status, primary language, health insurance status, housing and living conditions, neighborhood of residence, and access to health care) influence COVID-19-related outcomes, as well as the impact of COVID-19 stigma on vulnerable populations [20].
4. *Equitably recruit underrepresented racial/ethnic minorities in future COVID-19-related clinical trials.* It is imperative

that racial/ethnic minorities who are consistently underrepresented in clinical trials that assess potential treatment and prevention interventions [21], due in part to distrust of the health care system based on past systemic injustices and lack of available tools in non-English languages [22], be fairly represented—but not exploited—in testing of COVID-19 treatments. Best practices for obtaining informed consent and conducting ethical research must, as always, be followed.

POLICY ACTIONS

Short-term recommendations

1. *Local, state, and federal governments should provide free and accessible COVID-19 testing, prioritizing racial/ethnic minority and low-income communities who are at higher risk [23], and require comprehensive sociodemographic data collection across public health, hospital, and clinic reporting related to COVID-19.* Efforts devoted to improving the accuracy and standardization of sociodemographic data collection should be built into intake and follow-up of all medical and contact-tracing procedures.
2. *Policymakers, community leaders, and the media should consult and collaborate with experts in medicine, public health, and health care to provide consistent, up-to-date public health messaging regarding COVID-19 that is targeted and tailored (e.g., culturally appropriate, available in multiple languages) to racial/ethnic minority and low-income communities and addresses the implications of COVID-19 on other vulnerable populations such as children and the elderly.* Doing so will facilitate more equitable uptake of high-quality and evidence-based information.
3. *Local, state, and federal governments should work with internet providers to offer free and widely available internet access and educational resources to address disparities in internet access [24] and subsequent gaps in education and information access due to COVID-related closures of schools, businesses, and libraries.* Doing so will also enhance opportunities for occupational telecommuting and promote access to telemedicine services [25], a critical need particularly for those with chronic illnesses. Behavioral medicine and public health researchers indicate the value of harnessing technology and social media and online interactions to offset feelings of loneliness, promote psychological well-being, and support members of the community in adhering to behavioral targets and problem-solving barriers and challenges [11].
4. *The Occupational Safety and Health Administration (OSHA) and Departments of Health should dedicate resources to implement standardized, frequent inspections of open businesses to ensure that employers adhere to COVID-19-related safety policies and practices, including the provision of effective personal protective equipment (PPE) for employees.* Such measures are necessary to protect the health of essential and frontline employees [26].
5. *Employers should identify and provide flexible benefits to employees and their families should their employees acquire COVID-19 or need to care for a member of their household who has tested positive.* Additional

financial resources and policy initiatives to offset work and health-related losses should be considered to protect employees' health.

6. *Governments and health care systems should coordinate to protect insurance coverage of COVID-19 diagnostic, preventive, and treatment expenses, including underlying conditions [23], particularly among unemployed or underemployed individuals [27].* Given the skyrocketing unemployment rate—and subsequent loss of health insurance—among millions of Americans, insurance marketplace enrollment options should reopen immediately for uninsured populations and remain open indefinitely.
7. *Hospital administrators and health care providers must identify and address potential biases in treatment qualification algorithms [28] related to COVID-19, including rationing of ventilators.* Individuals who create these algorithms should consider the extent to which current algorithms and protocols may unintentionally exacerbate inequities.

Intermediate and long-term recommendations

1. *Policymakers should prioritize the development and implementation of affordable, accessible, culturally sensitive, multilingual, and systematic health-related outreach education [18], testing, and treatment, particularly among underrepresented, underserved, and marginalized groups [29].*
2. *Policymakers should restore funding and/or the equivalent of expected patient reimbursements to community-centric health delivery systems such as local hospitals, community health clinics, family practices, and school-based health clinics.* Telemedicine options should be considered during closures so clinics can operate as safely as possible.
3. *Policymakers should increase funding opportunities that call for the development of alternative creative, flexible, culturally sensitive, and affordable health care delivery options (e.g., mobile health care clinics) that can lessen health care disparities [30].*

BEHAVIORAL HEALTH IMPLICATIONS & CONCLUSIONS

The unfolding COVID-19 pandemic brings existing health inequities to the forefront once again and highlights ways that behavioral science can provide important insights into managing the pandemic and urgent efforts on mitigating such inequities. While behavioral health can contribute to the general understanding of health disparities among underserved communities (e.g., [17]), applications for the implications of COVID-19 on minority health (e.g., impacts of living in close quarters during quarantine; limited access to telecommuting work-from-home options) are needed (e.g., [11, 17, 31]). To this end, behavioral health should adopt multidisciplinary and multisiloed approaches (e.g., applications from the economics literature) for understanding the realities of social distancing measures among disadvantaged groups. For example, economics provides critical information about how frontline employees, who do not have the option of telecommuting, are disproportionately represented by underserved

minority groups in both urban and rural communities [13, 32–33].

The recommendations put forth in this commentary by the Society of Behavioral Medicine emphasize equity-driven: (i) *research practices*, including applying a social determinants and health equity lens on monitoring, evaluation, and clinical trials activities on COVID-19; and (ii) *policy actions*, such as dedicating resources to prioritize high-risk communities for testing, treatment, and prevention approaches and implementing organizational, institutional, and legislative policies that address the social and economic barriers to overall well-being that these populations face during a pandemic. These recommendations aim to generate momentum in delivering timely, effective, and lifesaving prevention and intervention strategies and policies, a mission we remain steadfastly committed to before, during, and long after a pandemic.

Acknowledgments: This commentary is the result of a collaborative effort from the coauthors representing the Health Policy Council, the Health Policy Committee, the Civic and Public Engagement Committee, and the Health Equity Special Interest Group on behalf of the Society of Behavioral Medicine. The authors have no funding sources to declare.

Compliance with Ethical Standards

Conflict of Interest: The authors have no conflicts of interests to declare.

Ethical Approval: This article does not contain any studies with animals performed by any of the authors.

Informed Consent: This article does not contain any studies with human participants performed by any of the authors. This study does not involve human participants and informed consent was therefore not required.

References

- WHO. Coronavirus (COVID-19) dashboard. Available at <https://covid19.who.int/>. Accessibility verified June 4, 2020.
- WHO. COVID-19: USA. Available at <https://covid19.who.int/region/amro/country/us>. Accessibility verified June 4, 2020.
- Yancy CW. COVID-19 and African Americans. *JAMA*. 2020;323(19):1891–1892.
- Wang Z, Tang K. Combating COVID-19: health equity matters. *Nat Med*. 2020;26(4):458.
- Dorn AV, Cooney RE, Sabin ML. COVID-19 exacerbating inequalities in the US. *Lancet*. 2020;395(10232):1243–1244.
- Garg S, Kim L, Whitaker M, et al. Hospitalization rates and characteristics of patients hospitalized with laboratory-confirmed coronavirus disease 2019 - COVID-NET, 14 states, March 1–30, 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(15):458–464.
- Lab AR. COVID-19 deaths by race and ethnicity in the U.S. Available at <https://www.apmresearchlab.org/covid/deaths-by-race>. Accessibility verified April 23, 2020.
- Silverman H, Toporin K, Sidner S, Perrot L. Navajo Nation surpasses New York state for the highest COVID-19 infection rate in the U.S. *CNN*. May 18, 2020.
- Wilson C. These graphs show how COVID-19 is ravaging New York City's low-income neighborhoods. *Time*. April 15, 2020.
- Howard G, Peace F, Howard VJ. The contributions of selected diseases to disparities in death rates and years of life lost for racial/ethnic minorities in the United States, 1999–2010. *Prev Chronic Dis*. 2014;11:E129.
- Bavel JJV, Baicker K, Boggio PS, et al. Using social and behavioural science to support COVID-19 pandemic response. *Nat Hum Behav*. 2020;4:460–471.
- Morales, L. Coronavirus infections continue to rise on Navajo Nation. *National Public Radio*. May 11, 2020.
- Statistics USBoL. Economic news release. Available at <https://www.bls.gov/news.release/flex2.t01.htm>. Accessibility verified April 23, 2020.
- Fothergill A, Peek LA. Poverty and disasters in the United States: a review of recent sociological findings. *Nat Hazards*. 2004;32(1):89–110.
- Bolin B, Kurtz LC. Race, class, ethnicity, and disaster vulnerability. In: Rodríguez H, Donner W, Trainor J, eds. *Handbook of Disaster Research. Handbooks of Sociology and Social Research*. Cham: Springer; 2018.
- Kawachi I, Daniels N, Robinson DE. Health disparities by race and class: why both matter. *Health Aff (Millwood)*. 2005;24(2):343–352.
- Jones CP. Levels of racism: a theoretic framework and a gardener's tale. *Am J Public Health*. 2000;90(8):1212–1215.
- Wolf MS, Serper M, Opsasnick L, et al. Awareness, attitudes, and actions related to COVID-19 among adults with chronic conditions at the onset of the U.S. outbreak: a cross-sectional survey. *Ann Intern Med*. 2020. doi:10.7326/M20-1239
- Association AH, Association AM, Association AN. Hospitals, physicians, nurses urge HHS to address COVID-19 disparities. Available at <https://www.aha.org/lettercomment/2020-04-16-hospitals-physicians-nurses-urge-hhs-address-covid-19-disparities>. Accessibility verified April 23, 2020.
- Logie CH, Turan JM. How do we balance tensions between COVID-19 public health responses and stigma mitigation? Learning from HIV research. *AIDS Behav*. 2020:1.
- Clark LT, Watkins L, Piña IL, et al. Increasing diversity in clinical trials: overcoming critical barriers. *Curr Probl Cardiol*. 2019;44(5):148–172.
- Oh SS, Galanter J, Thakur N, et al. Diversity in clinical and biomedical research: a promise yet to be fulfilled. *PLoS Med*. 2015;12(12):e1001918.
- Berger ZD, Evans NG, Phelan AL, Silverman RD. Covid-19: control measures must be equitable and inclusive. *BMJ*. 2020;368:m1141.
- Center PR. Internet/broadband factsheet. Available at <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/>. Accessibility verified April 23, 2020.
- Ahmed F, Ahmed N, Pissarides C, Stiglitz J. Why inequality could spread COVID-19. *Lancet Public Health*. 2020;5(5):e240.
- Berkowitz D. Worker safety & health during COVID-19 pandemic: rights & resources. Available at <https://www.nelp.org/publication/worker-safety-health-during-covid-19-pandemic-rights-resources/>. Accessibility verified April 23, 2020.
- Plans AoCH. Re: Special enrollment period during COVID-19 national emergency. Available at <https://achp.org/achp-calls-for-sep-covid/>. Accessibility verified April 23, 2020.
- Obermeyer Z, Powers B, Vogeli C, Mullainathan S. Dissecting racial bias in an algorithm used to manage the health of populations. *Science*. 2019;366(6464):447–453.
- Owen WF, Jr., Carmona R, Pomeroy C. Failing another national stress test on health disparities. *JAMA*. 2020;323(19):1905–1906.
- de Peralta AM, Gillispie M, Mobley C, Gibson LM. It's all about trust and respect: cultural competence and cultural humility in mobile health clinic services for underserved minority populations. *J Health Care Poor Underserved*. 2019;30(3):1103–1118.
- Blow C. Social distancing is a privilege: the idea that the virus is an equal-opportunity killer must itself be killed. *New York Times*. April 5, 2020.
- Rho JH, Brown H, Fremstad S. (2020). *A Basic Demographic Profile of Workers in Frontline Industries*. Washington, DC: Center for Economic and Policy Research.
- Fremstad S, Rho HJ, Brown H. Meatpacking workers are a diverse group who need better protections. Available at <https://cepr.net/meatpacking-workers-are-a-diverse-group-who-need-better-protections/>. Accessibility verified May 19, 2020.