Disparities in Opioid Overdose Death Trends by Race/Ethnicity, 2018–2019, From the HEALing Communities Study

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Objectives. To examine trends in opioid overdose deaths by race/ethnicity from 2018 to 2019 across 67 HEALing Communities Study (HCS) communities in Kentucky, New York, Massachusetts, and Ohio.

Methods. We used state death certificate records to calculate opioid overdose death rates per 100 000 adult residents of the 67 HCS communities for 2018 and 2019. We used Poisson regression to calculate the ratio of 2019 to 2018 rates. We compared changes by race/ethnicity by calculating a ratio of rate ratios (RRR) for each racial/ethnic group compared with non-Hispanic White individuals.

Results. Opioid overdose death rates were 38.3 and 39.5 per 100 000 for 2018 and 2019, respectively, without a significant change from 2018 to 2019 (rate ratio = 1.03; 95% confidence interval [CI] = 0.98, 1.08). We estimated a 40% increase in opioid overdose death rate for non-Hispanic Black individuals (RRR = 1.40; 95% CI = 1.22, 1.62) relative to non-Hispanic White individuals but no change among other race/ethnicities.

Conclusions. Overall opioid overdose death rates have leveled off but have increased among non-Hispanic Black individuals.

Public Health Implications. An antiracist public health approach is needed to address the crisis of opioid-related harms. (*Am J Public Health*. 2021;111(10):1851–1854. https://doi.org/10.2105/AJPH.2021.306431)

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Opioid overdose deaths continue to increase in the United States, reaching 49 860 in 2019, the highest ever recorded.[1] Non-Hispanic White individuals were disproportionately affected in the wave of prescription opioid deaths at the turn of the century; however, recent increases driven by heroin and fentanyl have been greater for non-Hispanic Black and Hispanic individuals.[2,3] Racial inequities in US drug policy are well chronicled.[4] These inequities include more severe criminal penalties for crack cocaine, more commonly used by Black individuals, compared with those for powder cocaine, more commonly used by non-Hispanic White individuals. Furthermore, the increase in opioid overdose deaths among non-Hispanic White individuals was associated with a shift toward a public health approach encompassing compassion and treatment.[4]

The Helping to End Addiction Long-term Communities Study (HCS) is an ongoing multisite, parallel-group, cluster-randomized, wait list–controlled trial in 67 communities disproportionately affected by opioid overdose deaths in 4 states (Kentucky, Massachusetts, New York, and Ohio).[5] HCS, the largest addiction implementation study ever conducted, is evaluating the impact of a community engagement intervention to reduce opioid overdose deaths. In the planning stage, community coalitions requested data by race/ethnicity to focus on equity. HCS created the infrastructure to provide data on opioid overdose deaths by race/ethnicity at the community level in a more timely and detailed manner than available through publicly available resources.[6] We reported trends in opioid overdose deaths by race/ethnicity from 2018 to 2019 during the preintervention baseline period in the 67 HCS communities. These trends directly

informed community intervention planning.

METHODS

We identified opioid overdose deaths for individuals aged 18 years or older for the 67 communities enrolled in HCS. We used death certificate records from the offices of vital statistics in Kentucky, Massachusetts, Ohio, and New York, consistent with the recommended approach of the Centers for Disease Control and Prevention ([CDC]; Appendix [available as a supplement to the online version of this article at http://www.ajph.org]).[6] We analyzed race/ethnicity to capture unmeasured social factors, including the experience of racism. We assigned individuals to 1 of 4 mutually exclusive race/ethnicity categories (non-Hispanic White, non-Hispanic Black, Hispanic, or other) using death certificate data. We obtained HCS community population size estimates stratified by race/ethnicity for individuals aged 18 years or older using the 2018 National Center for Health Statistics bridged-race population estimates and the 2014 to 2018 American Community Survey population estimates (Appendix).

We calculated opioid overdose death rates per 100 000 adults for calendar years 2018 and 2019 overall and stratified them by race/ethnicity and state. We used Poisson distribution to model deaths and Poisson regression with the logarithm of population as an offset variable to estimate the significance of changes in opioid overdose death rates by year and race/ethnicity.[7,8] In each racial/ethnic group, we calculated the ratio of the 2019 versus 2018 annual rates and its 95% confidence interval (95% CI). To determine whether changes in annual opioid overdose death rates differed by race/ethnicity, we calculated a ratio of rate ratios (RRR), comparing the rate ratio (RR) for each racial/ethnic group to non-Hispanic White individuals as a reference.

RESULTS

The total population aged 18 years or older across the 67 HCS communities was 8 316 922. The race/ethnicity distribution was 73% non-Hispanic White, 15% non-Hispanic Black, 7% Hispanic, and 6% other races/ethnicities. We identified 3188 opioid overdose deaths in 2018 and 3282 deaths in 2019, corresponding to opioid overdose death rates of 38.3 and 39.5 per 100 000 for 2018 and 2019, respectively. We identified no statistically significant difference in the overall opioid overdose death trend from 2018 to 2019 (RR = 1.03; 95% CI = 0.98, 1.08; Table 1). We observed a 14% decrease in the opioid overdose death rate in New York HCS communities (RR = 0.86; 95% CI = 0.77, 0.96) but no significant changes in other states.

We observed a 38% overall increase in the opioid overdose death rate for non-Hispanic Black individuals from 2018 to 2019 (RR = 1.38; 95% CI = 1.21, 1.57) but no change overall among the other racial/ethnic groups. We found opioid overdose death rate increases among non-Hispanic Black individuals in Kentucky (RR = 1.46; 95% CI = 1.01, 2.11) and Ohio (RR = 1.45; 95% CI = 1.24, 1.70) and a nonstatistically significant 26% increase among non-Hispanic Black individuals in Massachusetts (RR = 1.26; 95% CI = 0.73, 2.18). Although opioid overdose death rates were unchanged for non-Hispanic Black individuals in New York (RR = 1.03; 95% CI = 0.72, 1.48), this is amid an 18% decline among non-Hispanic White individuals (RR = 0.82; 95% CI = 0.72, 0.93).

Compared with non-Hispanic White individuals, there was a significant increasing trend in opioid overdose deaths among non-Hispanic Black individuals across all HCS communities (RRR = 1.40; 95% CI = 1.22, 1.62; Table 1). Although these trends were observed in all 4 states, statistically significant differences were identified only in Kentucky and Ohio.

DISCUSSION

Across the 67 HCS communities, opioid overdose death rates were flat between 2018 and 2019. However, in these communities highly affected by opioid overdoses, we identified marked disparities by race/ethnicity, with a 38% increase in opioid overdose deaths among non-Hispanic Black individuals. Unfortunately, these data confirm that disparities in opioid overdose fatality trends by race/ethnicity observed through 2018 in previous studies continue to widen.[2,3]

Public health leaders have called for the use of critical race theory to intentionally address structural racism in the development and execution of policy, practice, and research to ensure that gains from addressing opioid use disorder are achieved equitably.[4] The director of the National Institute on Drug Abuse highlighted the impact of structural racism on emerging overdose disparities and the need for research to ameliorate these disparities.[9] HCS recognizes that interventions aimed at reducing opioid overdose deaths may worsen underlying disparities and has made an explicit commitment to equity.[10]

TABLE 1— Trends in Opioid Overdose Death Rates by Race/Ethnicity, Across HEALing Communities Study Communities: Kentucky, New York, Massachusetts, and Ohio, 2018–2019

			Rate Change 2018–2019		Comparison of Rate Change 2018–2019 by Race/Ethnicity, Ratio of RRs (95% CI)
	2018 Rate[a]	2019 Rate[a]	Absolute	RR (95% CI)	
All research sites combined	38.3	39.5	1.1	1.03 (0.98, 1.08)	
Non-Hispanic White	41.7	41.0	−0.7	0.98 (0.93, 1.04)	1 (Ref)
Non-Hispanic Black	31.3	43.2	11.9	1.38 (1.21, 1.57)	1.40 (1.22, 1.62)
Hispanic	41.1	41.6	0.5	1.01 (0.84, 1.22)	1.03 (0.85, 1.25)
Other	7.5	6.0	−1.5	0.80 (0.49, 1.31)	0.81 (0.49, 1.34)
Kentucky	43.6	43.9	0.3	1.01 (0.90, 1.13)	
Non-Hispanic White	48.5	47.5	−1.1	0.98 (0.87, 1.10)	1 (Ref)
Non-Hispanic Black	27.2	39.7	12.5	1.46 (1.01, 2.11)	1.49 (1.01, 2.19)
Hispanic	19.5	7.8	−11.7	0.40 (0.13, 1.28)	0.41 (0.13, 1.31)
Other	16.7	16.7	0.0	1.00 (0.40, 2.52)	1.02 (0.40, 2.60)
Massachusetts	54.1	52.5	−1.6	0.97 (0.84, 1.12)	
Non-Hispanic White	57.9	52.0	−6.0	0.90 (0.75, 1.07)	1 (Ref)
Non-Hispanic Black	36.4	45.9	9.5	1.26 (0.73, 2.18)	1.41 (0.79, 2.50)
Hispanic	64.6	73.1	8.5	1.13 (0.85, 1.50)	1.26 (0.90, 1.76)
Other	15.2	9.5	−5.7	0.63 (0.20, 1.91)	0.70 (0.22, 2.16)
New York	29.5	25.4	−4.2	0.86 (0.77, 0.96)	
Non-Hispanic White	31.9	26.0	−5.9	0.82 (0.72, 0.93)	1 (Ref)
Non-Hispanic Black	21.4	22.2	0.7	1.03 (0.72, 1.48)	1.27 (0.87, 1.86)
Hispanic	31.0	31.0	0.0	1.00 (0.72, 1.40)	1.23 (0.86, 1.75)
Other	10.3	10.3	0.0	1.00 (0.43, 2.31)	1.23 (0.53, 2.86)
Ohio	38.6	43.4	4.8	1.12 (1.05, 1.20)	
Non-Hispanic White	42.0	45.2	3.1	1.07 (0.99, 1.16)	1 (Ref)
Non-Hispanic Black	35.5	51.6	16.1	1.45 (1.24, 1.70)	1.35 (1.14, 1.61)
Hispanic	41.3	39.3	−2.1	0.95 (0.66, 1.37)	0.88 (0.61, 1.28)
Other	2.8	1.2	−1.6	0.43 (0.11, 1.66)	0.40 (0.10, 1.55)

Note. CI = confidence interval; RR = rate ratio.

[a]Rates expressed per 100 000 population aged 18 years or older.

HCS is striving to increase evidence-based practices, including overdose education and naloxone distribution and enhanced delivery of medications for opioid use disorder.[5] Disparities in overdose education and naloxone distribution and medications for opioid use disorder delivery by race/ethnicity are well documented.[11,12] When HCS community coalitions began to develop action plans, they asked for community-specific data by race/ethnicity. The data infrastructure from HCS permitted the sharing of the community-specific opioid overdose death trends presented here, well in advance of when statewide data from the same period were made publicly available.[6] These community-specific data were instrumental in informing consideration of an equitable approach to selecting which evidence-based practices and venues to target.

Limitations of this study are potential misclassification of cause of death and race/ethnicity on death certificates and differences in death investigation practices by state. However, we are not aware of contemporaneous classification changes that would explain observed trends. Death counts for New York in 2019 are preliminary and may

be revised upward. Data to calculate age-adjusted rates were unavailable; however, a comparison with statewide crude and age-adjusted rates from CDC's WONDER (Wide-ranging ONline Data for Epidemiologic Research) produced similar estimates (Appendix).

PUBLIC HEALTH IMPLICATIONS

These data add to the evidence of worsening disparities in opioid overdose deaths by race/ethnicity. In the context of HCS, these data highlight the importance of timely, local data to inform an equitable approach for developing community-tailored strategies to reduce opioid overdose deaths. An antiracist public health approach that explicitly examines the role of racism is urgently needed in research, public health, and policy approaches to address the crisis of opioid-related harms. AJPH

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CONTRIBUTORS

M. R. Larochelle conceptualized the study and led its execution. S. Slavova, E. Root, and D. J. Feaster collaborated on the study design and analysis. All of the authors made substantial contributions to this brief and were involved in editorial preparation and review.

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CONFLICTS OF INTEREST

M. R. Larochelle received consulting funds for research on opioid use disorder treatment pathways paid to his institution from OptumLabs. No other authors have disclosures to report.

HUMAN PARTICIPANT PROTECTION

This study protocol (Pro00038088) was approved by Advarra, the HCS single institutional review board.

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