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Carceral epidemiology: mass incarceration and structural racism during the COVID-19 pandemic

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The COVID-19 pandemic and the ongoing epidemic of mass incarceration are closely intertwined, as COVID-19 entered US prisons and jails at astounding rates. Although observers warned of the swiftness with which COVID-19 could devastate people who are held and work in prisons and jails, their warnings were not heeded quickly enough. Incarcerated populations were deprioritised, and COVID-19 infected and killed those in jails and prisons at rates that outpaced the rates among the general population. The COVID-19 pandemic highlighted what has been long-known: mass incarceration is a key component of structural racism that creates and exacerbates health inequities. It is imperative that the public health, particularly epidemiology, public policy, advocacy, and medical communities, are catalysed by the COVID-19 pandemic to drastically rethink the USA's criminal legal system and the public health emergency that it has created and to push for progressive reform.

Introduction

The USA has the highest number of COVID-19 infections and the highest number of individuals incarcerated in the world.¹ The COVID-19 pandemic and the ongoing epidemic of mass incarceration are closely intertwined. Despite containing less than 5% of the world's population, the USA has recorded 66 526 927 confirmed cases as of Jan 18, 2022, accounting for 20% of the world's COVID-19 infections and 15% of deaths.¹ Similarly, a disproportionate percentage (25%) of those incarcerated across the globe are in the USA.² According to the COVID Prison Project, state prisons have over three times the rate of COVID-19 infections than the general population, and most of the largest COVID-19 outbreaks in a single site in the USA have been in prisons and jails.^{3,4} People who are incarcerated, staff who work in carceral facilities, advocates, and researchers have long known that incarceration negatively affects health and wellbeing. These harms include individuals' physical health (eg, increased mortality after release from prison) and mental health (eg, trauma), family members' physical and mental health, and the community's health (eg, HIV incidence).⁵ However, the pandemic has made many people aware of the widespread effect of the criminal legal system on health and the need for increased efforts towards prisons and jails: notably, in October, 2021, the American Public Health Association formally recommended "moving towards the abolition of carceral systems".⁶

The COVID-19 pandemic spotlights health harms of mass incarceration

At the beginning of the COVID-19 pandemic, researchers, advocates, and reporters familiar with the environment of correctional facilities warned of the swiftness with which COVID-19 would devastate carceral settings.⁷⁻⁹ Akiyama and colleagues¹⁰ highlighted the pervasive risk of infectious diseases in jails and prisons (eg, hepatitis C and tuberculosis), how the 2009 H1N1 influenza pandemic exposed the lack of preparedness of carceral

settings, and how prisons and jails are largely unable to follow physical distancing measures. The Prison Policy Initiative documented how prisons and jails did little to reduce their populations during the pandemic.¹¹ The Marshall Project revealed the lack of implementation of COVID-19 protocols in prisons and jails.¹² In light of this, Nowotny and colleagues¹³ amplified the need for progressive criminal legal reform based on a prison abolitionist ethic to address the public health emergency of mass incarceration itself. In the year that followed, these warnings had not been heeded quickly enough, incarcerated populations had been deprioritised, progressive reform had been ignored (eg, the Centers for Disease Control and Prevention does not mention decarceration as a mitigation strategy),¹⁴ and COVID-19 had infected and killed those in carceral settings at rates that far outpace that of the general population.

In the wake of COVID-19 spreading rapidly through prisons and jails, there has been an increase in public attention in the media and the academy to mass incarceration as a public health emergency affecting people who are incarcerated and the general public. For example, *The New York Times* highlighted the spread of COVID-19 in carceral settings in addition to exploring why cases were particularly high in jails given high turnover, detailing vaccine rollout for those incarcerated and working in carceral settings, and explaining how movements of people and prison officers between prisons led to the spread of COVID-19 within and outside of prisons.¹⁵⁻¹⁸ Although, these discussions have long been taking place in the academy among those focused explicitly on mass incarceration, among advocates and impacted communities, their attention in popular media and the general public provides a time-sensitive imperative to act. The urgent nature of this action is punctuated by the American Public Health Association finally adopting the statement in October, 2021, that mass incarceration poses a threat to public health.⁶ This is reiterated by Bailey and colleagues who describe how mass incarceration and police violence are facets of structural racism, defined as "the totality of ways in

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which societies foster [racial] discrimination, via mutually reinforcing [inequitable] systems... (eg, in housing, education, employment, earnings, benefits, credit, media, health care, criminal justice, etc) that in turn reinforce discriminatory beliefs, values, and distribution of resources", reflected in history, culture, and interconnected institutions.^{19,20}

Yet, media attention, professional statements, and publications are not enough. It is imperative that the medical and public health communities acknowledge mass incarceration to be a key component of structural racism in the USA, recognise the mechanisms linking mass incarceration to public health at individual, family, and population levels, and work in collaboration with state and local entities to create systemic change through both research (eg, evaluating non-carceral community safety programmes) and advocacy.²¹

The term mass incarceration, although accurate, masks one of the key elements of the event. In the USA, incarceration is disproportionately concentrated among Black, Native American, Native Hawaiian and Other Pacific Islander, and Latinx individuals with a high school education or less, living in historically segregated and disinvested communities.^{22,23} Mass incarceration not only affects individuals with criminal legal contact, but affects entire communities in which mass incarceration is concentrated.²⁴ These disproportionately Black, low-income communities are often heavily overpoliced, and a large number of people are removed from these communities or under state control through community supervision. This high level of criminal legal involvement disrupts social and family networks and relationships, erodes social capital, and lowers informal social control, affecting the wellbeing of communities.²⁵⁻²⁷ Nevertheless, data on those incarcerated has largely been absent from nationally representative health datasets.²⁸ Less than 0.1% of US National Institutes of Health funded grants focus on mass incarceration,²⁹ and the topic of mass incarceration has largely been absent from epidemiological studies and analyses, masking the harmful and reverberating effects of this system on health, specifically racial and ethnic health inequities.

Towards a carceral epidemiology

The relative dearth of meaningful discussions of mass incarceration within epidemiology and public health is partially driven by an emphasis on decontextualised modifiable risk factors of disease. This approach does not give full attention to multilevel, simultaneous drivers of health inequities, such as structural racism. Structural racism is a fundamental cause of health inequity that has become increasingly recognised, and its operationalisation would be incomplete without mass incarceration as one of structural racism's many mutually reinforcing systems of inequity.^{20,30} Furthermore, the more we are able to see structural racism and, in turn, mass

incarceration, as the modifiable risk factors they are, the better we will be able to address health inequities.

Although the ratio of imprisonment of Black to White people has recently been integrated into quantitative measures of structural racism, there is less nuanced discussion about the collateral effects of mass incarceration on other components of structural racism (eg, residential segregation and housing opportunity).³¹ Residential segregation and housing opportunity are extensively researched as key proxies of structural racism, since they often set the stage for race-implicit distribution resources and hazards.³² For example, most residents in the USA live in racialised and economically segregated neighbourhoods, such that neighbourhoods in which people of colour reside have a high concentration of dilapidated housing, poor social and built environments, high exposure to pollutants and toxins, and low access to quality health care—all of which are associated with poor health—when compared with predominantly White neighbourhoods.²⁰ Mass incarceration must also be considered as one of the integral mutually reinforcing systems that operate together to drive structural racism, as mass incarceration not only steps from racialised policing practices in segregated communities, but also fosters racial and ethnic inequalities in social determinants of health including housing, employment, and access to health care, reinforces stereotypes that are the basis of discrimination, and consequently drives racial and ethnic health inequities.

Furthermore, the role of mass incarceration as a mechanism of how structural racism affects racial health disparities has been heightened during the COVID-19 pandemic. This is evidenced both at the individual and the community level. People who are incarcerated are more likely to acquire COVID-19 and develop severe COVID-19 symptoms, as they have a higher burden of poor underlying health.¹⁰ Although prisons and jails have high COVID-19 infection rates overall, given their congregate living settings, overcrowding, and minimal COVID-19 mitigation, poor underlying health is also associated with transmission and severity of disease.^{33,34} Much of the disproportionately poor health among incarcerated populations is driven by underlying, society-wide disparities in health combined with higher incarceration rates in Black, Native American, and Latinx communities when compared with White communities.^{35,36}

Specifically, the disproportionately Black incarcerated population is structurally vulnerable due to historic and contemporary public and private disinvestment in Black communities, increased exposure to environmental toxins, inadequate access to health care, and trauma from state-sanctioned violence, which have resulted in poorer health.³⁷ Again, these inequities are observed in the COVID-19 pandemic. Black individuals are more likely to develop severe COVID-19 outcomes, being hospitalised at 2.9 times the rate of White individuals.³⁸ The mortality rate of COVID-19 for Black individuals is

2.75 times the rate of White individuals and for Hispanic individuals it is 4.18 times the rate of White individuals, with these disparities being heightened among younger age groups.³⁹ These inequities are also present within carceral systems. In Vermont, USA, where these data are available, Black prison residents experience 2.3 times the risk of acquiring COVID-19 compared with White prison residents.⁴⁰ Yet, widespread COVID-19 data by race within prisons and jails are largely absent, making it impossible to understand the racial health inequities present among those involved in the criminal legal system.

Additionally, the communities that incarcerated people originate from, and later return home to, bear a high burden of COVID-19, partially driven by incarceration. Black Americans are overrepresented in the criminal legal system and are more likely to live in areas with higher poverty rates, have poor access to health care, and have higher rates of jobs in service industries requiring in-person work, increasing exposure to COVID-19 infection.^{41,42} Beyond these factors, with over 200 000 people coming in and out of correctional facilities in any given week,⁴³ a large proportion of community COVID-19 cases have been attributed to incarceration (eg, jail churn) across the USA.⁴⁴ The vast health inequities we are able to document with our scarce data, and the need for more transparently reported data, further emphasise the need for epidemiology to focus on mass incarceration as a structural determinant of health and as a key mechanism of structural racism.

Conclusion

Mass incarceration, structural racism, and public health are integrally related. As the past year has shown, the carceral system's lack of public health preparedness and roots in structural racism has allowed COVID-19 to enter prisons, jails, and communities impacted by mass incarceration at astounding rates. The COVID-19 pandemic has clearly exposed mass incarceration as a dominant mechanism of structural racism in the USA. Public health has long ignored carceral structures as crucial to their mission; however, the COVID-19 pandemic has created momentum that has led to the formal recognition of the harms jails and prisons inflict on people, families, and entire communities. The pandemic has also made clear that we as public health researchers must apply our expertise to political advocacy.²¹ When we decide that issues such as abolition are outside of our scope of work, we betray both our field and the health of those affected by mass incarceration. We, as researchers and advocates, must address the harms of the carceral system by not only pursuing carceral epidemiology, but also reducing the incarcerated population;^{7,45} investing in social determinants of health rather than carceral systems; committing to non-carceral measures for accountability, safety, and wellbeing; restoring voting rights for those with criminal legal

involvement; and funding research to evaluate determinants of exposure to the criminal legal system and propose alternatives.^{6,46}

Contributors

KL conceptualised, drafted, reviewed, edited, and finalised the manuscript, and did the literature searches. LB-R and KN conceptualised, reviewed, and edited the manuscript, and acquired funding. MM and MP did the literature searches, and drafted, reviewed, and edited the manuscript. ZB conceptualised, reviewed, and edited the manuscript.

Declaration of interests

We declare no competing interests.

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