

VIEWPOINT

CLIMATE CHANGE AND HEALTH

The Intersection of Climate Justice and Criminal Justice

Extreme Heat and Health Inequities in Carceral Facilities

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Incarcerated individuals are uniquely poised to be negatively impacted by the consequences of climate change, with extreme heat presenting an acute and life-threatening danger to those detained. Climate change contributes to humanitarian crises worldwide, including extreme heat, wildfires, floods, drought, and tropical storms. It also generates myriad downstream effects on population health including food insecurity, forced migration, and the degradation of community social supports. As of December 2024, 3.6 billion people live in areas highly susceptible to climate change, which the World Health Organization expects will lead to an estimated 250 000 annual deaths worldwide by 2030.

Both climate change and climate policy negatively affect those with lower income, regardless of their country's wealth or health infrastructure.¹ Within the US, modeling estimates demonstrate that between 19 348 and 26 574 annual deaths will occur due to extreme heat by the mid-21st century, with the most devastating effects on older (≥ 65 years), Black, and Latinx populations.² As research into the health effects of climate change progresses, we must identify disproportionately affected subgroups for timely, targeted interventions.

A staggering 2 million people, predominately Black and Latinx men, are detained in our criminal legal system—both in jails (shorter-term city or county facilities typically detaining those awaiting trial or serving sentences less than 1 year) and prisons (longer-term state or federal detention centers). Housed in aging and poorly ventilated facilities, confined in cells and crowded dormitories, and entirely reliant on correctional officers for movement, the US carceral population is particularly susceptible to the adverse effects of climate change. Here we delineate the unique risk extreme heat poses to the health of incarcerated individuals, the systematic exposure of those imprisoned to these hazardous conditions, the resulting impact on mortality, and steps carceral facilities and policymakers can take to mitigate extreme heat risks.

Susceptibility to Heat

Individuals enter carceral settings with more medical and psychiatric comorbidities than community counterparts, with severe mental illness slightly more prevalent in jails than prisons.³ Consequently, many incarcerated patients are exposed to medications that can impair thermoregulation, including selective serotonin or serotonin-norepinephrine reuptake inhibitors, antipsychotics, and anticholinergics, as well as common agents for cardiovascular disease such as diuretics and β -blockers. These medications, referred to as *hot meds*, put patients at elevated risk of adverse outcomes when exposed to extreme heat, especially when combined with psychomotor agitation, sedation, or social isolation.

Many people are then held for decades in prisons and a phenomenon known as *accelerated aging*, or developing conditions that typically impact older adults (eg, impairment in activities of daily living, frequent falls, cognitive impairment) a decade earlier than community norms, contributes to an aging carceral population. With age, the body's endogenous ability to thermoregulate declines, leading older individuals to have more documented complications of extreme heat, including hospitalization for electrolyte disorders, kidney failure, septicemia, and heat stroke.⁴

While incarcerated, people regularly lack the autonomy of movement required to seek cooler spaces or climates or access shade, ice, or water during temperature spikes, leading some in Texas prisons to describe the experience as being "cooked alive." This experience can be worse in jails, where large numbers of individuals with serious mental illness or active psychotic symptoms may await trial or "competency restoration," with limited access to acute or chronic medical care. With the vast majority of detention systems lacking any legal requirement for air conditioning, imprisoned people are forced to react through piecemeal legal action to address unsafe living conditions, with lawsuits underway in Texas, Florida, Georgia, and Louisiana.

Systematic Environmental Exposure

Urban zoning laws and security concerns push carceral construction into low-cost land in sparsely populated desert or humid environments, subjecting prison sites in some states to more extreme heat relative to the rest of the state.⁵ This geographic disparity is compounded at a national level by state-specific criminal-legal policies, which leave a larger portion of the US population incarcerated in hotter states, systematically detaining incarcerated people within environments prone to environmental hazard.

Examination of air temperature data from 1990-2023 across 1614 US prisons showed that heat-exposed facilities were concentrated in Southwestern US states (California, Nevada, and Arizona) and locations without universal air conditioning regulations, and that 98.2% of all US prisons experience summer temperatures above the limits of thermal comfort.⁶ Most people in jails are still presumed innocent and thus constitutionally prohibited from punishment, making such extreme heat exposure even more unconscionable.

Mortality and Underreporting

US prison data from 2001-2019 reveal an association between both temperature increase and sustained heat on mortality of incarcerated persons, with the greatest increase in deaths among those older than 65 years; a 10 °F temperature increase was associated with

a 5.2% increase in all-cause mortality and a 6.7% increase in heart disease-related mortality.⁷ Exposure to extreme heat in the Louisiana state prison system was correlated with daily suicide incidents that increased between 29% and 36% as heat levels rose, while a study in Mississippi showed a 20% increase in violent incidents among people incarcerated during unsafe heat index levels.⁸

The true impact of heat on those imprisoned remains difficult to assess due to insufficient regulatory oversight, difficulties obtaining indoor temperature data in carceral facilities, and disincentives to disclose when heat contributes to death in custody. Quantifying the effect of extreme heat on jail populations poses particular challenges due to higher variance in local policies and practices compared with more centralized state or federal prison oversight. In September 2022, Congress recognized the failure of the US Department of Justice to implement the 2013 Death in Custody Reporting Act, which has undermined national comprehensive reporting of carceral death data. As a result, public health researchers remain unable to assess the scale of heat-related morbidity and mortality in carceral settings, meaning the true extent of harm remains underreported.

Creating Climate Justice Within Criminal Justice

Most immediately, carceral facilities with the highest current and projected heat indices need to ensure availability of air conditioning, or other evidence-based cooling mechanisms, and codify heat contingency plans within operating procedures to decrease exposure risk. Some states, such as California, have made public their heat response strategies (including individual risk assessment, temporizing facility measures, oral rehydration plans, and nursing interventions); these can serve as a starting place for others to develop and standardize heat exposure prevention and response plans.

Environmental impact statements should be used to advocate for decarceration to reduce overcrowding in overheated facilities and the closure of older prisons ill-suited to withstand extreme heat

and to push against prison construction in places prone to the risks of climate change. Publicly available resources, such as the Toxic Prisons Mapping Project under development by academicians and community advocates, provide real-time guidance to understand the environmental hazards carceral facilities face from extreme heat.

Health care professionals and policymakers must advocate for national systems to track heat-related illness and deaths in carceral settings and enforce current mechanisms, such as the Death in Custody Reporting Act, so that health agencies can accurately assess the dangers of extreme heat on incarcerated persons and estimate the scale of necessary cooling systems. Organizations such as Incarceration Transparency provide growing insight into jail mortality in select southern states, although data collection is limited by carceral reporting sources, which do not require increased guidance for coroners or medical examiners to consider whether heat exposure is a contributing factor to death.⁹

Expansion of Medicaid into some carceral settings offers a hopeful opportunity to standardize availability of medical treatments for heat-related health complications under Conditions of Participation, although legislation that might allow such change remains before Congress. The Federal Prison Oversight Act, passed in July 2024, introduced the potential to establish systems for tracking use of medications that impair thermoregulation, available cooling methods, and heat-related medical events in the federal prison system, though such monitoring and oversight, if included in enactment of the legislation, remains years away.

The medical community should advocate for a smaller carceral population through rational sentencing reform, including shorter sentences and expedited release of those whose health is most adversely impacted by extreme heat, akin to successful efforts under compassionate release during the COVID-19 pandemic. No incarcerated person was sentenced to die by heat exposure. Through a multimodal approach, we must ensure those detained in the criminal legal system are not left behind in the fight for climate health justice.

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