REVIEW ARTICLE

C. Corey Hardin, M.D., Ph.D., *Editor*

Carceral Health Care

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N Engl J Med 2025;392:892-901.
DOI: 10.1056/NEJMra2212149

CME

Decades of strict sentencing laws, the racially motivated War on Drugs, and simultaneous erosion of community mental health and social services have contributed to the American public health crisis of mass incarceration.[1] The mass incarceration system includes jails (county institutions holding people who are awaiting trial or serving short sentences) and prisons (state or federal facilities holding people after conviction), as well as community supervision (probation and parole). In 2021, a total of 1.2 million people were incarcerated in U.S. prisons, and 11 million people cycled through jails — numbers that are 7 times as high as those in the late 1970s. The United States now holds 20% of the world's incarcerated people, although it accounts for just 5% of the global population.[2]

Overlapping medical, behavioral, and social forces produce distinctive health needs among incarcerated people. Many people arrive at carceral facilities with sociocultural health risks, including poor health care access, substance use disorder, mental illness, exposure to violence, housing instability, poverty, and physical or psychological trauma. These intersecting health risks become magnified in many carceral facilities, where exposure to violence and drugs, as well as loneliness, is the norm. Mass incarceration is also both a manifestation and a driver of structural racism. Black and Latinx people are more likely to be arrested and incarcerated and to serve longer sentences than their White counterparts.[3] Although incarcerated people have a constitutional right to health care, widespread, successful litigation suggests that inadequate primary care is common. Moreover, tertiary care in community hospitals is often complicated by the use of shackles; the presence of officers at the bedside, which compromises confidentiality; and health care staff who may be uncertain about the decision-making rights of incarcerated patients.

This nonexhaustive review introduces foundational literature about the health care needs of incarcerated persons in the United States. We focus on research from the past 5 years on growing subpopulations of incarcerated people, including women and older adults, as well as emerging areas of concern, such as coronavirus disease 2019 (Covid-19), opioid use disorder, and the need for oversight of carceral health care. We conclude by describing some of the health-related priorities that must be addressed to halt the engine of mass incarceration and its relentless adverse effects on public health.

Effects of Carceral Conditions on Health

Many people arrive at prisons or jails in poor health, and the conditions in carceral facilities — particularly solitary confinement, overcrowding, and extreme temperatures — can worsen health[4] (Fig. 1 and Table 1). The negative mental and

KEY POINTS

CARCERAL HEALTH CARE

- Mass incarceration is harmful to the health of individual persons, families, and communities.
- Health concerns for people who are incarcerated include early death and an increased risk of chronic and infectious diseases, opioid use and overdose, and coronavirus disease 2019.
- Emerging areas of health-related research in carceral settings include the health needs of older adults, women, and transgender persons and the need for abolition medicine (a health care practice that focuses on eradicating mass incarceration by optimizing social and health care infrastructures).
- Future efforts to improve the health of incarcerated persons should focus on improved linkages to care after release, expansion of Medicaid coverage during incarceration, and improved transparency and oversight of carceral health care systems.

physical health effects of solitary confinement are well documented.[5] A large body of evidence shows how extreme isolation increases self-harm and suicidal ideation, loneliness, and cardiovascular disease; exacerbates chronic conditions; and increases the risk of death after release.[6] Reducing solitary confinement can have positive effects on the health of both residents and staff.[7] Therefore, it is critical that health care professionals assess and document the psychological harm experienced by patients in isolation and advocate against the use of solitary confinement and for the return of patients to a less isolating environment as quickly as possible.[8]

The flip side of extreme isolation in carceral facilities is overcrowding. Together with outdated or poorly functioning HVAC (heating, ventilation, and cooling) systems, overcrowding is associated with the spread of infectious diseases, such as tuberculosis and Covid-19, and with an increased risk of self-harm and suicidality.[7,9-11] Poor HVAC infrastructures are particularly harmful in states with rising temperatures. One study showed that, on average, 14 heat-related deaths occur annually in facilities without air conditioning, as compared with no heat-related deaths in facilities with air conditioning.[12] Health care professionals should document the health effects of heat and overcrowding and advocate for improved conditions for their patients in these settings.

PRESSING HEALTH CARE CONCERNS IN CARCERAL FACILITIES

In a 1976 case, *Estelle v. Gamble*, the Supreme Court ruled that carceral facilities are constitutionally mandated to provide health care in a manner that does not constitute indifference to serious medical needs. This care is financed by local, state, and federal governments and is not usually eligible for supplemental coverage by public insurance programs such as Medicaid or Medicare. Incarcerated patients generally receive primary health care at their carceral facility and are transported to community hospitals or clinics for acute or tertiary care. Some carceral facilities have onsite specialty care (e.g., radiology and skilled nursing care); others rely on contracted community services. Health care staff outside carceral facilities are often unfamiliar with the rights of incarcerated patients, and differing medical center guidelines (e.g., policies with regard to family communication, disclosure of protected health information, and the use of shackles) can result in disparate care practices.[13]

TRACKING OF CAUSES OF DEATH

As of 2019, the leading cause of death was suicide in jails and cancer in prisons. Mortality from overdose and homicide was increasing in both settings. Researchers and community activists should continue to piece together numbers and causes of death through public-records requests.[14]

MANAGEMENT OF CHRONIC DISEASE

The prevalence of many chronic health conditions is much higher among people in U.S. carceral facilities than among community-dwelling persons, and the risk of death within the first 2 weeks after release from prison is almost 13 times that among other residents in the community.[15,16] Despite the effects of the carceral system on many Americans, knowledge about the health-related needs of incarcerated people is still in its infancy. A 2015 National Institutes

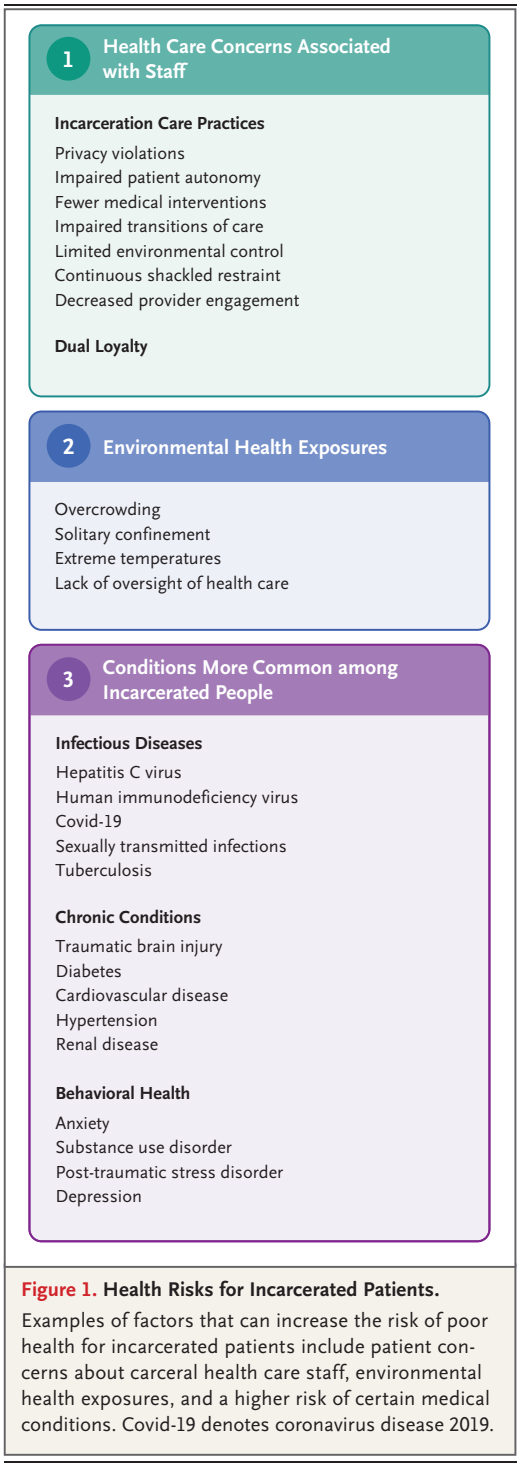

Figure 1. Health Risks for Incarcerated Patients.
Examples of factors that can increase the risk of poor health for incarcerated patients include patient concerns about carceral health care staff, environmental health exposures, and a higher risk of certain medical conditions. Covid-19 denotes coronavirus disease 2019.

of Health portfolio analysis showed that less than 0.1% of all grants and less than 1.5% of the budget for research on health disparities were dedicated to studies of the health of incarcerated persons.[17] The intervening years have seen an increase in published research on the health care needs of incarcerated people. A PubMed Central search for scientific review articles on this topic revealed an increase from 13 publications in 2018 to 34 in 2022.

Incarcerated persons are more likely than people in the community to have infectious diseases (e.g., human immunodeficiency virus [HIV] infection and other sexually transmitted infections,[18,19] hepatitis C virus [HCV] infection,[20] tuberculosis,[21] and Covid-19[22]) and chronic conditions (e.g., renal disease, diabetes, hypertension, traumatic brain injury, cardiovascular disease, obesity, and geriatric syndromes).[23-25] Substance use disorder and mental illness (including post-traumatic stress disorder, depression, and anxiety)[26,27] are also more prevalent among incarcerated persons, in part because of the criminalization of these conditions.[1]

Management of chronic disease differs among carceral facilities. In general, chronic disease is managed by health care professionals employed by the facility or a private company. Sometimes, chronic disease is managed by community clinics or academic health care institutions. Use of telemedicine has become more common in recent years. There is mixed evidence on the effects and outcomes of prison-based telemedicine, with some studies showing that it is as effective as in-person care.[28] Cost, training, diverse models of telemedicine across studies, and implementation barriers have been cited as factors contributing to these mixed findings.[28]

Few studies have described best practices for the management of chronic diseases in carceral settings.[29] Accreditation bodies (e.g., the National Commission on Correctional Health Care) publish standards for chronic disease management,[30] but accreditation is not required for carceral facilities, and uptake is limited.[31] The treatment of mental health conditions and the effects of exposure to stress and trauma in carceral settings are also understudied. Early studies show that cognitive behavioral and mindfulness therapies can have a moderate effect on depression and anxiety in carceral facilities, and trauma-informed care may reduce symptoms of post-traumatic stress disorder.[32,33] Social supports have also been found to mitigate trauma-related mental health symptoms in these settings.[34]

OPIOID USE AND OVERDOSE

The prevalence of substance use disorder is high in carceral facilities, and drug overdose is a leading cause of death after release.[35] Despite the ubiquitous presence of dangerous synthetic opioids, such as fentanyl, few carceral facilities offer medication for opioid use disorder (MOUD). Yet MOUD programs are highly effective in carceral settings. A statewide MOUD program in Rhode Island was associated with a 61% reduction in overdoses among recently incarcerated people and an overall 12% decline in statewide overdose deaths.[36] California prisons introduced a substance use treatment program that included screening, MOUD, behavioral interventions, supportive housing, and enhanced care coordination on release. Overall, 90% of people who were offered MOUD accepted it, and overdose deaths decreased by 58%; hospitalizations for overdoses and skin infections decreased by 18% and 21%, respectively; and the rate of reinfection with HCV was 29% lower among people who were given MOUD.[37]

COVID-19

Carceral facilities have accounted for many large, single-site Covid-19 outbreaks.[38] The incidence of Covid-19 among incarcerated people by early June of 2020 was 5.5 times as high as the incidence in the community, and Covid-19 related mortality was 3 times as high when adjusted for differences in age and sex distributions between the incarcerated population and the general population.[39]

Covid-19 case rates in carceral settings have been highest among Black and Latinx people and older adults. The cumulative prevalence of Covid-19 was highest among Black people in the four state systems that stratified their data by race,[40] and age-standardized death rates were highest for Latinx and Black people in 11 state departments of corrections.[41] Older age among incarcerated people has also been associated with an increased risk of Covid-19 related hospitalization and death.[42] Mitigation approaches to outbreaks in carceral settings have included reducing population sizes within carceral facilities[10] and bringing community-based education about vaccination into the facilities to provide an understanding of how vaccination decreases viral infectivity.[43] Studies have shown the critical need for public health agencies to recognize the link between carceral facilities and community outbreaks. For example, cycling of persons between Cook County Jail and the community was responsible for 15.7% of all Covid-19 cases in Illinois.[44] Nationally, counties with prisons had 9% higher Covid-19 case counts than counties without prisons.[45]

Table 1. Incarceration-Related Factors That Can Affect Health.*

Environmental factors
Extreme heat or cold
Overcrowding
Poor lighting
Geographic distance from hospitals
Unusual everyday physical requirements (e.g., top-bunk assignment, with the need to drop to the floor for alarms)
Poor ventilation
Profound isolation (solitary confinement)
Noise pollution or loud acoustics
Toxins from pollutants (e.g., contaminated water)
Institutional policies
Shackling
Use of restraints during ambulation or transport
Limited visitation
Forced detoxification rather than treatment
Strip searches
Copayments for accessing health care
Violence
Gang activity
Sanctioned use of force by staff
Vicarious trauma from witnessing violence
Conflict between incarcerated persons
Dehumanization
Limited access to standard health care practices
Hospice and palliative care
Advance care planning
Substance use prevention and treatment, particularly for current use
Freedom in making medical decisions
Family contact during hospitalization
Hormone therapy
Choice of surrogate decision maker for advanced illness
Preventive care

* Not all factors apply to all incarcerated people or all facilities.

DUAL LOYALTY

Dual loyalty is used to describe the ethical conflict that can arise in carceral health care when

the punitive (or, at a minimum, security-focused) mission of the facility comes into conflict with the patient care mission of health care professionals.[46] For example, health care professionals have been asked to alter the reported severity of an injury sustained by an incarcerated person after an incident involving staff use of force, to walk away from a patient requesting help, or to clear a patient for transfer to solitary confinement despite recent self-harm.[47] This phenomenon of dual loyalty undermines job satisfaction among health care professionals working in carceral facilities.[48]

Efforts have been made to engage health care professionals in training programs that are designed to improve patient care and reduce clinicians concerns about dual loyalty.[47] These programs cover the philosophical underpinnings of the equivalence of care (the availability of the same health care interventions to incarcerated persons that are available to the general population),[49] separation of forensic requests from clinical duties,[47] navigation of common challenges in the care of incarcerated persons in hospital settings,[50] and implicit biases and improvement in communication between health care services and security staff.[51] Findings from studies exploring the effects of dual loyalty on health care delivery, particularly in solitary-confinement units,[8,52] underscore the need for health care professionals to be on the watch for ways in which the punitive nature of carceral facilities can undermine ethical patient care.

EMERGING AREAS OF HEALTH-RELATED RESEARCH IN CARCERAL SETTINGS

Although the number of incarcerated people in the United States has begun to decline, the numbers of incarcerated women and older adults continue to rise, and 1 in 5 trans women experience incarceration.[53] Such demographic shifts call for new research.

OLDER ADULTS

The number of incarcerated older adults (55 years of age or older) increased from approximately 43,000 in 1999 to 164,000 in 2016. Chronic conditions and geriatric syndromes including urinary incontinence, hearing impairment, and impairments in activities of daily living develop at an earlier age in incarcerated persons than in community-dwelling persons.[25] This phenomenon, referred to as accelerated aging, has led carceral facilities to consider incarcerated persons in their 50s as geriatric. Population aging also increases the prevalence of chronic disease in the incarcerated population.

New research is required to understand the health care needs of this changing population. For instance, cancer is now the second leading cause of death in state prisons, yet very little is known about cancer care in carceral settings.[54] Efforts to understand and improve the care of incarcerated older adults have included correction of environment function mismatches (e.g., ensuring that older adults are not placed in top bunks and allowing them to go to meals early).[55] Other important strategies include improvement of knowledge about dementia and advance care planning in the carceral environment (e.g., patients should retain the right to make their own medical decisions and to identify a surrogate decision maker)[56-58]; access to early medical release (compassionate release); and access to palliative care and hospice services for patients with serious, life-limiting illness (including provision of high-quality training to peer caregivers).[59,60]

Incarceration affects people across the life span. Any history of incarceration (even of short duration) has been associated with a 20 to 80% increase in the risk of common geriatric syndromes among adults 55 years of age or older, including falls and impairment in activities of daily living, even after adjustment for socioeconomic factors.[61] Factors that affect the care of all hospitalized incarcerated patients[62] include mandatory shackling in community hospitals[63] and inadequate knowledge on the part of hospital staff with regard to advance care planning,[56] compassionate-release policies,[64] and the ethical care of incarcerated people hospitalized with Covid-19.[65] Such care includes access to vaccination,[66] surrogate decision-making arrangements when needed,[67] and palliative care.[68]

Recognizing the sudden growth in the population of incarcerated older adults, the National Institute on Aging funded the development of the Aging Research in Criminal Justice and Health Network. This network has spurred research into the health of this population, such

as assessment of the health of formerly incarcerated older women,[69] examination of the outsized effects of Covid-19 on incarcerated older adults,[42] and identification of drivers of depression and suicidal ideation in this population,[70] including lack of social support,[71] solitary confinement,[6] and recency of incarceration.[72]

WOMEN AND TRANSGENDER PERSONS

The United States has the world s highest rate of incarceration among women. The prevalence of medical and mental health conditions is higher among incarcerated women than among nonincarcerated women,[73] as is the prevalence of adverse childhood experiences and sexual violence. A history of incarceration can also negatively affect future health. For example, previous incarceration has been associated with reduced viral suppression and an increased risk of death among women with HIV infection.[74]

Improved delivery of health care for women is needed in many carceral facilities. For example, the incidence of cervical dysplasia and cancer is high, yet mistrust of medical professionals can prevent women from engaging in screening, and system-level barriers can undermine linkages to postrelease care in the community to address abnormal screening results.[75] The multistate Pregnancy in Prison Statistics Project has revealed instances in which shackling practices were used during childbirth, despite state antishackling laws.[76] Furthermore, studies have documented inadequacies in prenatal diets and in the treatment of opioid use disorder during pregnancy.[77,78] A lawsuit in California involved 148 women in state prisons who underwent unwanted or forced sterilization between 2006 and 2010 (despite a state law that outlawed such practices).[79] Studies that describe efforts to improve noncoercive, person-centered health care for incarcerated women are sorely needed.

More research on the health needs of transgender persons in U.S. carceral facilities is also needed. An international review showed a high prevalence of physical and sexual violence, mental health conditions, self-harm and suicide, and poor access to health care among incarcerated transgender people.[80] Health care professionals in carceral facilities and the community should screen for exposure to sexual violence in this population. The Prison Rape Elimination Act requires administration of an objective screening tool within 72 hours after incarceration and describes how the results may inform decisions about housing.[81] Jails and prisons do not always offer therapeutic environments for conducting this type of sensitive screening. Moreover, incarcerated transgender persons have reported a lack of access to medical professionals with proficiency in transgender health care, as well as assignment to solitary confinement solely on the basis of their gender identity.[82,83]

RECOMMENDATIONS FOR CHANGE

Carceral facilities provide health care for persons with a high prevalence of chronic health conditions, many of whom have had poor access to health care in the community. Thus, public health interventions delivered in a carceral setting can be a critical first step in improving health in this population. Examples of such interventions are listed in Table 2. Many of the greatest barriers to high-quality health care delivery come from systemic challenges and therefore require broad policy interventions.[88] Examples of such interventions include the expansion of Medicaid coverage during incarceration, the introduction of mechanisms for oversight of health care quality, and the improvement of linkages to health care after release.

IMPROVING LINKAGES TO POSTRELEASE CARE

Discharge planning in carceral health care systems should follow community norms, including the provision of health care records to patients, along with education about patients medical conditions, a sufficient supply of medications with instructions for correct use, and linkages to community care. The Transitions Clinic Network, a successful model of care coordination between carceral and community health care systems, integrates community health workers who have a history of incarceration into primary care teams,[89] a strategy that is associated with reduced use of emergency departments and reduced recidivism. Other transitional care models focus on specific subpopulations, such as persons with HIV infection.[90] Successful postrelease health care programs also address the collateral consequences of incarceration (e.g., housing, employment, and social support needs).

Table 2. Public Health Interventions That Can Be Deployed in Carceral Settings.*

Providing screening and initiating treatment for HIV infection
Providing screening and initiating treatment for hepatitis C[84]
Providing screening and treatment for sexually transmitted infections
Providing screening and treatment for opioid use disorder with FDA-approved MOUD
Providing screening and treatment for other substance use disorders, including timely treatment of life-threatening alcohol withdrawal
Providing appropriate and timely cancer screening and other health maintenance offerings
Offering annual vaccination for influenza and Covid-19
Offering other vaccinations, including vaccinations for hepatitis B and measles[85,86]
Addressing the needs of older patients and those with serious, life-limiting illness
Offering gender-affirming care when indicated[87]
Implementing strategies for primary prevention of atherosclerotic vasculature disease, given the increased risk of cardiovascular disease associated with incarceration
Providing appropriate access to primary care and urgent care
Ensuring postrelease linkages to care for patients with chronic medical conditions

* Covid-19 denotes coronavirus disease 2019, FDA Food and Drug Administration, HIV human immunodeficiency virus, and MOUD medication for opioid use disorder.

ADVOCATING FOR AND SHAPING EXPANDED MEDICAID COVERAGE DURING INCARCERATION

The Medicaid Inmate Exclusion Policy precludes Medicaid coverage during incarceration. In January 2023, California became the first state to institute a waiver in order to allow Medicaid coverage for complex health care needs, substance use disorder and mental health treatment, and steps to begin the transition to community-based care in the 90 days before release. As more states submit waiver applications, clinician advocates can work with policymakers to ensure that key components of care are included.

IMPROVING TRANSPARENCY AND OVERSIGHT OF CARCERAL HEALTH CARE SYSTEMS

Whereas community health care systems are accountable to oversight agencies, carceral health care services operate without transparency or accountability.[91] Health care services in many carceral facilities remain seriously flawed, as shown by decades of sustained litigation. Such lawsuits remain the primary source of carceral health care oversight. This approach is reactive triggered once a patient has already been harmed rather than proactive, with surveillance for system-level problems before harm befalls patients. Health care professionals should advocate for independent oversight of carceral facilities through mandated, routine inspections by a regulating body. Some states are taking the lead in improving the quality of health care in prisons. California now publishes dozens of health metrics on a public dashboard, which is updated monthly.[92]

CONCLUSIONS

Mass incarceration in the United States has created a public health crisis of incalculable magnitude that demands bold, relentless, and transformative action from health care professionals. The effects of Covid-19 in prisons and jails spurred urgent cries for improvements in health care by families and people directly affected by incarceration, as well as by health care professionals fighting to save the lives of their patients in carceral facilities. The result has been a doubling down on community-based efforts to divert people from the carceral system, renewed advocacy to change sentencing policies, increased attention from health care researchers, and community-led legislative efforts to reduce or eliminate the use of solitary confinement and increase the use of compassionate release for people with serious, life-limiting illness. In addition, public calls are mounting for divestment in the practices that bolster U.S. mass incarceration in favor of an infusion of capital into community programs that support health and social services.[93,94] This approach, increasingly referred to in the academic literature as abolition medicine, [94] is rooted in the belief that improvements in public safety require eradicating anti-Black violence and fostering social and health care infrastructures, rather than focusing on incarceration as the primary antidote to social ills and interpersonal violence.

As a complement to these efforts, health care professionals and researchers have made great strides in recent years to understand the health care needs of incarcerated patients. The research described herein highlights many important opportunities to improve health care for this patient population. The Accreditation Council for Graduate Medical Education has recently approved

standards for a new carceral medicine fellowship in order to enhance clinical training for physicians[95] and to provide in-depth education about the ethical issues faced by health care professionals in carceral facilities.[47,96] This effort is likely to spur additional research to understand the health care needs of this medically complex patient population and to identify ways to build improved health care systems for persons, families, and communities affected by mass incarceration.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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