2022-2023 Service Category Definition - DSHS State Services

Local Service Category:	**Early Intervention Services – Incarcerated**
Amount Available**:**	**To be determined**
Unit Cost	
Budget Requirements or Restrictions **(TRG Only)**:	Maximum 10% of budget for Administrative Cost. No direct medical costs may be billed to this grant.
DSHS Service Category Definition:	Support of Early Intervention Services (EIS) that include identification of individuals at points of entry and access to services and provision of: • HIV Testing and Targeted counseling • Referral services • Linkage to care • Health education and literacy training that enable PLWHs to navigate the HIV system of care These services must focus on expanding key points of entry and documented tracking of referrals. Counseling, testing, and referral activities are designed to bring people living with HIV into Outpatient Ambulatory Medical Care. The goal of EIS is to decrease the number of underserved individuals with HIV/AIDS by increasing access to care. EIS also provides the added benefit of educating and motivating PLWHs on the importance and benefits of getting into care. Limitations: Funds can only be sed for HIV testing where existing federal, state, and local funds are not adequate *and* funds will supplement, ***not supplant***, existing funds for testing. Funds cannot be used to purchase at-home testing kits.
Local Service Category Definition:	This service includes the connection of incarcerated in the Harris County Jail into medical care, the coordination of their medical care while incarcerated, and the transition of their care from Harris County Jail to the community. Services must include: assessment of the PLWH, provision of education regarding disease and treatment, education and skills building to increase PLWH's health literacy, completion of THMP/ADAP application and submission via ARIES upload process, care coordination with medical resources within the jail, care coordination with service providers outside the jail, and discharge planning.
Target Population (age, gender, geographic, race, ethnicity, etc.):	People living with HIV (PLWHs) incarcerated in The Harris County Jail.
Services to be Provided:	Services include but are not limited to CPCDMS registration/update, assessment, provision of education, coordination of medical care services provided while incarcerated, medication regimen transition, multidisciplinary team review, discharge planning, and referral to community resources.

	EIS for the Incarcerated is provided at Harris County Jail. HCJ's population includes both individuals who are actively progressing through the criminal justice system (toward a determination of guilt or innocence), individuals who are serving that sentence in HCJ, and individuals who are awaiting transfer to Texas Department of Criminal Justice (TDCJ). The complexity of this population has proven a challenge in service delivery. Some individuals in HCJ have a firm release date. Others may attend and be released directly from court. Therefore, EIS for the Incarcerated has been designed to consider the uncertain nature of length of stay in the service delivery. Three tiers of service provision haven been designated. They are: • **Tier 0:** The individuals in this tier do **not** stay in HCJ long enough to receive a clinical appointment while incarcerated. The use of zero for this tier's designation reinforces the understanding that the interaction with funded staff will be minimal. The length of stay in this tier is traditionally less than 14 days. • **Tier 1:** The individuals in this tier stay in HCJ long enough to receive a clinical appointment while incarcerated. This clinical appointment triggers the ability of staff to conduct multiple interactions to assure that certain benchmarks of service provision should be met. The length of stay in this tier is traditionally 15-30 days. • **Tier 2:** The individuals in this tier remain in HCJ long enough to get additional interactions and potentially multiple clinical appointments. The length of stay in this tier is traditionally 30 or more days. Service provision builds on the activities of the previous tier if the individual remains in HCJ. Each tier helps the staff to focus interactions to address the highest priority needs of the individual. Each interaction is conducted as if it is the only opportunity to conduct the intervention with the individual.
Service Unit Definition(s) **(TRG Only)**:	One unit of service is defined as 15 minutes of direct PLWH services or coordination of care on behalf of PLWH.
Financial Eligibility:	Due to incarceration, no income or residency documentation is required.
Eligibility for Service:	People living with HIV incarcerated in the Harris County Jail.
Agency Requirements **(TRG Only)**:	As applicable. the agency's facility(s) shall be appropriately licensed or certified as required by Texas Department of State Health Services, for the provision of HIV Early Intervention Services, including phlebotomy services.

	Agency/staff will establish memoranda of understanding (MOUs) with key points of entry into care to facilitate access to care for those who are identified by testing in HCJ. Agency must execute Memoranda of Understanding with Ryan White funded Outpatient Ambulatory Medical Care providers. The Administrative Agency must be notified in writing if any OAMC providers refuse to execute an MOU.
Staff Requirements:	Not Applicable.
Special Requirements **(TRG Only)**:	Must comply with the Houston EMA/HSDA Standards of Care. The agency must comply with **the DSHS Early Intervention Services Standards of Care** and **the Houston HSDA Early Intervention Services for the Incarcerated Standards of Care**. The agency must have policies and procedures in place that comply with the standards ***prior*** to delivery of the service.

FY 2022 RWPC "How to Best Meet the Need" Decision Process

Step in Process: **Council**		Date: **06/10/2021**
Recommendations:	Approved: Y:_____ No: _____ Approved With Changes:_____	If approved with changes list changes below:
1.		
2.		
3.		

Step in Process: **Steering Committee**		Date: **06/03/2021**
Recommendations:	Approved: Y:_____ No: _____ Approved With Changes:_____	If approved with changes list changes below:
1.		
2.		
3.		

Step in Process: **Quality Improvement Committee**		Date: **05/18/2021**
Recommendations:	Approved: Y:_ ___ No: _____ Approved With Changes: _____	If approved with changes list changes below:
1.		
2.		
3.		

Step in Process: **HTBMTN Workgroup #3**	Date: **04/21/2021**
Recommendations:	Financial Eligibility:
1.	
2.	
3.	

EARLY INTERVENTION SERVICES - INCARCERATED
2019 CHART REVIEW REPORT

PREFACE

DSHS Monitoring Requirements

The Texas Department of State Health Services (DSHS) contracts with The Houston Regional HIV/AIDS Resource Group, Inc. (TRG) to ensure that Ryan White Part B and State of Texas HIV Services funding is utilized to provide in accordance to negotiated Priorities and Allocations for the designated Health Service Delivery Area (HSDA). In Houston, the HDSA is a ten-county area including the following counties: Austin, Chambers, Colorado, Fort Bend, Harris, Liberty, Montgomery, Walker, Waller, and Wharton. As part of its General Provisions for Grant Agreements, DSHS also requires that TRG ensures that all Subgrantees comply with statutes and rules, perform client financial assessments, and delivery service in a manner consistent with established protocols and standards.

As part of those requirements, TRG is required to perform annual quality compliance reviews on all Subgrantees. Quality Compliance Reviews focus on issues of administrative, clinical, data management, fiscal, programmatic, and quality management nature. Administrative review examines Subgrantee operating systems including, but not limited to, non-discrimination, personnel management and Board of Directors. Clinical review includes review of clinical service provision in the framework of established protocols, procedures, standards and guidelines. Data management review examines the Subgrantee's collection of required data elements, service encounter data, and supporting documentation. Fiscal review examines the documentation to support billed units as well as the Subgrantee's fiscal management and control systems. Programmatic review examines non-clinical service provision in the framework of established protocols, procedures, standards and guidelines. Quality management review ensures that each Subgrantee has systems in place to address the mandate for a continuous quality management program.

QM Component of Monitoring

As a result of quality compliance reviews, the Subgrantee receives a list of findings that must be address. The Subgrantee is required to submit an improvement plan to bring each finding into compliance. This plan is monitored as part of the Subgrantee's overall quality management monitoring. Additional follow-up reviews may occur (depending on the nature of the finding) to ensure that the improvement plan is being effectively implemented.

Scope of Funding

TRG contracts with one Subgrantee to provide Early Intervention Services in the Houston HSDA.

INTRODUCTION

Description of Service

Early Intervention Services-Incarceration (EIS) includes the connection of incarcerated in the Harris County Jail into medical care, the coordination of their medical care while incarcerated, and the transition of their care from Harris County Jail to the community. Services must include: assessment of the client, provision of client education regarding disease and treatment, education and skills building to increase client's health literacy, establishment of THMP/ADAP post-release eligibility (as applicable), care coordination with medical resources within the jail, care coordination with service providers outside the jail, and discharge planning.

Tool Development

The Early Intervention Services review tool is based upon the established local standards of care.

Chart Review Process

The collected data for each site was recorded directly into a preformatted computerized database. The data collected during this process is to be used for service improvement.

File Sample Selection Process

Using the ARIES database, a file sample was created from a provider population of 677 who accessed Early Intervention Services in the measurement year. The records of 40 clients were reviewed (representing 5.9% of the unduplicated population). The demographic makeup of the provider was used as a key to file sample pull.

Demographics-Early Intervention Services

2018 Annual

Total UDC: 789

Age	Number of Clients	% of Total
Client's age as of the end of the reporting period		
Less than 2 years	0	0.00%
02 - 12 years	0	0.00%
13 - 24 years	56	7.10%
25 - 44 years	449	56.90%
45 - 64 years	274	34.72%
65 years or older	10	1.27%
Unknown	0	0.00%
	789	100%
Gender	**Number of Clients**	**% of Total**
"Other" and "Refused" are counted as "Unknown"		
Female	122	15.46%
Male	651	82.50%
Transgender FTM	0	0.00%
Transgender MTF	16	2.03%
Unknown	0	0.00%
	789	100%
Race/ Ethnicity	**Number of Clients**	**% of Total**
Includes Multi-Racial Clients		
White	223	28.26%
Black	557	70.60%
Hispanic	103*	13.05%
Asian	1	0.1%
Hawaiian/Pacific Islander	0	0.00%
Indian/Alaskan Native	2	0.25%
Unknown	7	0.89%
	760	100%

From 01/01/18 - 12/31/18

2019 Annual

Total UDC: 672

Age	Number of Clients	% of Total
Client's age as of the end of the reporting period		
Less than 2 years	0	0.00%
02 - 12 years	0	0.00%
13 - 24 years	41	6.10%
25 - 44 years	386	57.4%
45 - 64 years	237	35.2%
65 years or older	8	1.1%
Unknown	0	0.00%
	672	100%
Gender	**Number of Clients**	**% of Total**
"Other" and "Refused" are counted as "Unknown"		
Female	100	15%
Male	572	85%
Transgender FTM	0	0.00%
Transgender MTF	13	2%
Unknown	0	0.00%
	672	100%
Race/ Ethnicity	**Number of Clients**	**% of Total**
Includes Multi-Racial Clients		
White	190	28%
Black	476	70%
Hispanic	93*	14%
Asian	0	0.0%
Hawaiian/Pacific Islander	0	0.0%
Indian/Alaskan Native	5	0.74%
Multi-Race	6	0.90%
	677	100%

From 01/01/19 - 12/31/19

RESULTS OF REVIEW

Intake Assessment

Percentage of clients who had a completed intake assessment present in the client record.

	Yes	No	N/A
Number of client records that showed evidence of the measure	40	0	-
Number of client records that were reviewed.	40	40	-
Rate	**100%**	**0%**	-

Health Literacy and Education: Risk Assessment

Percentage of clients that had documentation of the client being assessed for risk and provided targeted health literacy and education in the client record (including receipt of a blue book).

	Yes	No	N/A
Number of client records that showed evidence of the measure	40	0	-
Number of client records that were reviewed.	40	30	-
Rate	**100%**	**7%**	-

Linkage: Newly Diagnosed

Percentage of newly diagnosed clients that initiate care through the EIS program

	Yes	No	N/A
Number of client records that showed evidence of the measure	3	0	37
Number of client records that were reviewed.	3	40	40
Rate	**100%**	**0%**	**92.5%**

Referral: Medical Care

Percentage of clients that accessed a referral to a primary care provider and/or essential service in the client record.

	Yes	No	N/A
Number of client records that showed evidence of the measure	39	1	-
Number of client records that were reviewed.	40	40	-
Rate	**97.5%**	**2.5%**	-

Percentage of clients that had referral follow-up in the client record

	Yes	No	N/A
Number of client records that showed evidence of the measure	3	29	8
Number of client records that were reviewed.	32	32	40
Rate	**9%**	**91%**	**20%**

Discharge Planning

Percentage of clients who had a discharge plan present in the client record.

	Yes	No	N/A
Number of client records that showed evidence of the measure	36	1	3
Number of client records that were reviewed.	37	37	40
Rate	**97%**	**3%**	**7.5%**

Percentage of clients who had documentation of access to medical care upon release in the client record.

	Yes	No	N/A
Number of client records that showed evidence of the measure	0	39	1
Number of client records that were reviewed.	39	39	40
Rate	**0%**	**100%**	**2.5%**

CONCLUSIONS

Overall, quality of services is met. Through the chart review: 100% (40) of clients completed an intake assessment and 97% (36 of 37) developed a discharge plan, an increase of 14% from last year. Of the clients enrolled into the EIS program 100% of the newly diagnosed clients accessing care. Of the files reviewed 97.5% (39 of 40) documented an appropriate referral to medical care upon release and/or other appropriate referrals, however there was limited documentation of follow-up at 9% (3 of 32).

INVITED COMMENTARY

HIV and Mass Incarceration:
Where Infectious Diseases and Social Justice Meet

David Alain Wohl

More than 1% of all adults in the United States are currently in a jail or prison. This mass incarceration, particularly of African American men, fosters conditions that facilitate the spread of HIV in communities where both HIV and incarceration are endemic. Recognition of the role of mass incarceration in the perpetuation of the HIV epidemic is essential to development of effective HIV prevention policies.

The United States is home to 5% of the global population but accounts for 25% of the world's prisoners [1]. Per capita, the United States incarcerates more of its own people than any other nation, with 1 in 99 adults currently behind bars, in either a jail or a prison; an additional 4 million people are supervised under parole or probation [1-3]. The consequences of this large-scale incarceration, beyond the considerable financial cost to taxpayers, are multiple and not always obvious. The policies that have led to mass incarceration have affected minorities and those living in poverty the most, and this unevenness in the application of the law has perpetuated economic and other disparities, as ex-offenders struggle to find work, housing, and stable medical care. In addition, the incarceration of a sizable proportion of the community causes societal disruptions that foster the spread of infectious diseases, including HIV.

This commentary describes how the coincident epidemics of incarceration and HIV infection have led to a concentration of HIV in US prisons and jails, which facilitates the spread of HIV infection in communities where both incarceration and HIV are prevalent.

Mass Incarceration in the United States

Prior to 1970, the rate of incarceration in the United States was similar to that of other nations in North America and Europe. Then a succession of legislative and policy changes, crafted as a "war on drugs," began in the early 1960s and accelerated over the following 2 decades, resulting in a dramatic expansion of the criminal justice system and an increase in the number of people behind bars (Figure 1) [4, 5]. During this period, laws punishing illicit drug use were enacted and toughened, sentences were lengthened, and policing tactics became more aggressive. To house the resulting explosion in incarceration—a 700% increase from 1972 to 2013—more prisons were constructed [4, 5].

This shift toward a more punitive and less rehabilitative approach to public safety not only led to large-scale imprisonment but also disproportionately affected racial and ethnic minorities and people living in poverty. The United States currently incarcerates a greater proportion of its black population than did South Africa during the Apartheid era [6]. States with the highest rates of incarceration are found in the Southern region of the United States.

Drug laws, in particular, have led to a substantial increase in incarceration rates for African American men. In 2012, the incarceration rate per 100,000 African American men was 2,841, compared to 463 for white men [7]. African American men are estimated to have a lifetime risk of imprisonment of 1 in 3, compared to 1 in 6 for Latino men and 1 in 17 for white men [8]. Similar trends are seen among women, with an estimated lifetime risk of incarceration for African American women at 1 in 18, compared to 1 in 45 for Latina women and 1 in 111 for white women.

High Concentration of HIV Infection Within Correctional Facilities

At the same time that incarceration rates were increasing in the United States, so too was the incidence of HIV infection. Initially confined to populations of men who have sex with men in large cities on the East and West coasts, HIV infection quickly entered into and spread among networks of injecting drug users and those using crack cocaine. Consequently, the policies that were established to arrest and imprison those involved in the use and trafficking of illicit substances inadvertently targeted for incarceration those with an elevated risk of HIV and viral hepatitis infections, including substance users, many of whom suffer from mental illness.

At present, the national prevalence of HIV infection in state and federal prisons is estimated at 1.5%—approximately 5-fold greater than the rate in the general US population—but rates vary greatly by state [9]. In a study

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Address correspondence to Dr. David Alain Wohl, University of North Carolina, 130 Mason Farm Rd, CB #7215, Chapel Hill, NC 27599 (wohl@med.unc.edu).

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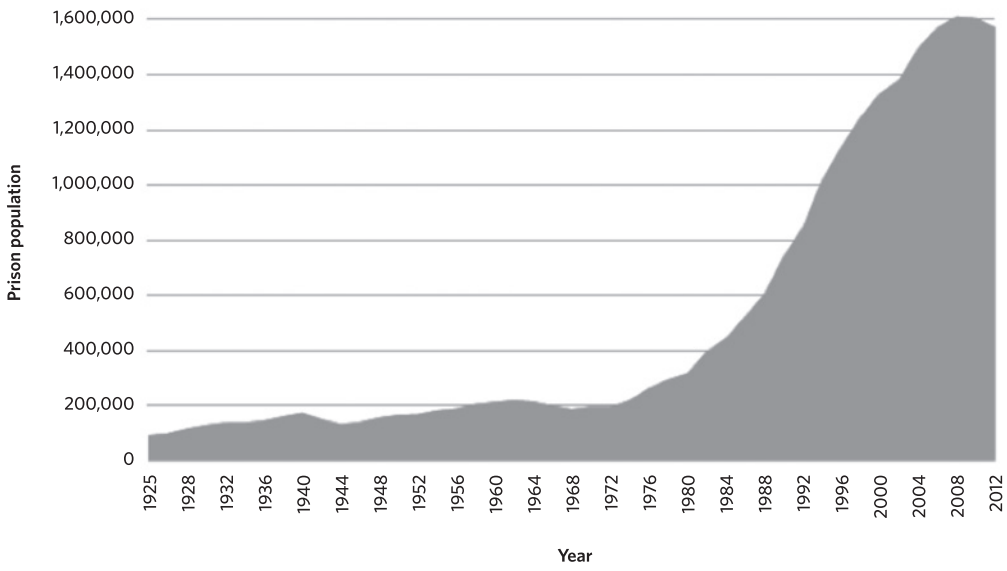
FIGURE 1.
US State and Federal Prison Population, 1925–2012



Source: Warren J [1].

performed by our group at the University of North Carolina (UNC) at Chapel Hill, excess blood specimens that remained after routine medical screening of over 23,000 adult men and women entering the North Carolina prison system in 2008–2009 were anonymously tested for HIV antibodies [10]. Overall, 1.45% of inmates entering the prison system during this period tested HIV seropositive; this rate is many times greater than the state's HIV prevalence rate but on par with the average for prisons nationally.

The flip side of the concentration of HIV infection in our nation's correctional facilities is the high prevalence of imprisonment among persons living with HIV. According to one study, an estimated 14% of all persons living with HIV infection in the United States, and 20% of African American HIV-infected individuals, pass through a jail or prison each year (as do one-third of all those identified with chronic hepatitis C virus infection) [11].

More recent data indicate that in North Carolina, and in the nation as a whole, incarceration rates have started to drop, as have the number of state and federal prison inmates with HIV infection. There are less data available on rates of HIV-infected persons in jails, which mostly house those who have not yet been tried or who have been convicted but are completing relatively short sentences. The high cost of maintaining jails and prisons and the overcrowding of correctional facilities have been the driving forces behind the small but meaningful decline in the incarcerated population.

HIV Screening and Treatment During Incarceration

In terms of HIV prevention and treatment, incarceration provides opportunities as well as challenges. Ideally, HIV screening at the time of jail or prison entry can identify those with previously undiagnosed infection, allow for the initiation of secondary prevention counseling and treatment, and promote linkage to community care prior to release. Approximately 20% of those infected with HIV in the United States are unaware that they are HIV-positive [12], and screening for HIV infection at prison entry is seen as an opportunity to identify some of these undiagnosed individuals. In many states, including North Carolina, HIV testing is mandatory for all individuals entering prison. In our study, which collected and HIV-tested excess blood from over 23,000 prison entrants in North Carolina, we found 320 individuals who were HIV seropositive at screening [10]. However, all but 20 were already known to the state health authorities as being HIV-infected. Therefore, testing of prisoners, at least in North Carolina, is more likely to identify those already known to be infected rather than to detect undiagnosed cases. For jails, the situation may be different, given the larger number of people who are jailed. HIV screening procedures in jails vary, including among those in North Carolina. Short jail stays and limited resources for testing and discharge planning challenge HIV screening in jails, although many jails do provide rapid HIV testing.

As mentioned previously, those in jail or prison who are identified as being HIV-infected, whether or not they are newly diagnosed, can be offered care during their incarceration. Effective HIV therapies are almost always available in prisons—both state and federal—and available data suggest that treatment for HIV-infected prison inmates is as good as, if not better, than treatment in community-based HIV clinics. Additionally, HIV-related mortality has declined among prisoners in parallel with the decrease seen in the general population [9, 13]. HIV treatment outcomes in the nation's

many thousands of jails are harder to assess and are likely to vary greatly. Jails are operated by towns, municipalities, or counties and are not always able to or committed to making HIV therapy available to inmates in a timely manner. In addition, jail budgets may not be able to accommodate the relatively high cost of HIV medications. Therefore, interruptions in HIV therapy during jail stays are common.

Linkage to Community Care

While HIV care in prisons is generally effective, a major challenge in HIV correctional care is maintaining the benefits of treatment achieved during incarceration following community reentry. Ample data demonstrate that a large proportion of HIV-infected individuals who leave state prisons experience a loss of control of their HIV infection [14-16]. We found that, among HIV-infected individuals who were released from prison and later re-incarcerated, plasma HIV RNA levels were significantly greater at the time of re-incarceration than at the time of release [14]. Furthermore, rates of viral suppression are low for HIV-infected individuals who are frequently involved in the criminal justice system [17].

In Texas, HIV-infected prisoners are given a 10-day supply of their HIV medication when they are released from prison, and all qualify for free antiretrovirals via the state AIDS Drug Assistance Program. However, one study found that only 30% of HIV-infected individuals picked up their antiretroviral medication within 60 days following community re-entry (see Figure 2) [16].

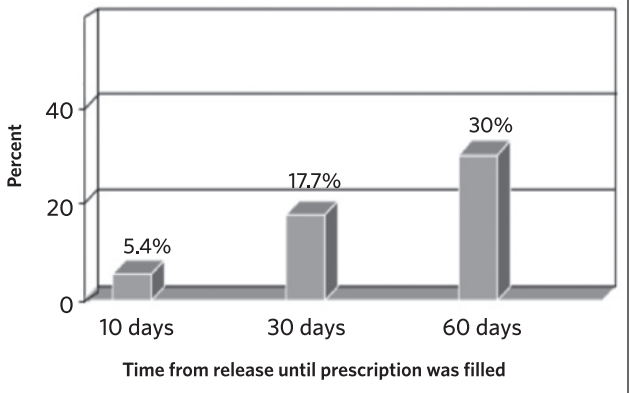
As a result of this unsettling finding, our research group at UNC working with collaborators at Texas Christian University launched a study funded by the National Institute of Drug Abuse at the National Institutes of Health to develop and test an intervention to improve linkage to HIV care after release from prison. This randomized trial enrolled over 400 men and women with suppressed HIV viral load who were being released from state prisons in North Carolina or Texas. The purpose of the intervention was to increase the motivation of individuals to receive HIV care after re-entering the community. Techniques included motivational interviewing, a reduction in barriers to care using brief case management, and support of adherence to HIV medications via study-supplied cell phones that would send reminders before scheduled doses. In comparison to a control group that received routine prerelease discharge planning, we found no significant effect of the intervention on the proportion of released individuals with an undetectable HIV RNA level 6 months after release [18]. These data echo results of a smaller study we conducted examining the effects of an intensive bridging case management program in North Carolina for HIV-infected men and women being released from state prison [19]. That study also found no difference in the rate of engagement in medical care after release between a group that received the bridging case management and a group receiving standard discharge planning.

These findings suggest that interventions focused on motivation and facilitation, even those that are well designed and rigorously administered, are insufficient to overcome forces that impede ongoing adherence to HIV medications and care. Such forces are pervasive and include poverty, homelessness, discrimination, stigma, mental illness, and substance abuse. Societal remedies for such ills are typically nonexistent and, when present, are underfunded and difficult to access.

Mass Incarceration and the Spread of HIV

Sexual transmission of HIV during incarceration is a concern given the potential "perfect storm" in many correctional systems of a relatively high prevalence of HIV infection coupled with policies that ban condoms and clean injecting equipment. However, the extent to which HIV is acquired in jails and prisons is unclear, and the available data suggest that the overwhelming majority of HIV-infected persons in jails or prisons entered these facilities with HIV. Despite HIV testing of inmates being conducted at entry and release in many states, including North Carolina, reports describing seroconversion rates during incarceration have not been made public. Most experts in this field believe that HIV acquisition in prison and jails is rare and that public perceptions of this phenomenon are disproportionate to its frequency [20].

FIGURE 2.
Percent of HIV-Infected Individuals Released From Prison Who Filled an Antiretroviral Prescription in the Days Following Release (N = 2,115)



Source: Baillargeon J, et al [16].

Social Disruption in Communities

A potentially greater effect of mass incarceration on the spread of HIV infection, albeit one that is more difficult to measure, is the social disruption caused by the imprisonment of a large proportion of men in a community. In areas and

populations where incarceration rates are high, the social order is altered as sex ratios shift and men go "missing" from their communities [21]. In many communities, particularly those that have a large African American population, there are only 6 to 8 men for every 10 women. Such an imbalance in the ratio of men to women can affect sexual behavior and has been associated with concurrency of partnerships, which can foster the transmission of HIV and other sexually transmitted infections. A scarcity of men places women at a disadvantage and can undercut their power to negotiate partner monogamy and condom use. Women faced with fewer options may also form partnerships with men of lower socioeconomic status, including those who are unemployed or who have been recently incarcerated [21-22].

Incarceration can also directly disrupt relationships that may have been protective against sexually transmitted infections. Work by Khan and colleagues in North Carolina describes how incarceration of a partner may end a relationship, leading the remaining partner to seek a new relationship [23-24]. In an area where sexually transmitted infections may be relatively prevalent, new relationships carry an increased risk of exposure and infection. Similarly, following incarceration and subsequent release, the individual who is re-entering the community may also form a new partnership, possibly risking exposure to sexually transmitted infections.

As stated above, suppression of HIV replication during incarceration is the rule rather than the exception. Upon release, it is the reverse, with the risk of viral rebound increasing over time. Coincident with a return of viremia is an increase in infectiousness. Therefore, the failure to maintain effective management of HIV infection following incarceration threatens not only individual health but also public health as released individuals return to their communities and establish or re-establish sexual partnerships.

Interventions to Mitigate the Effects of Mass Incarceration on HIV Transmission

In highlighting the ways in which HIV and mass incarceration intersect, potential opportunities for intervention can be identified. As discussed, counseling and linkage programs for HIV-infected persons involved in the criminal justice system—while well-intentioned and pragmatic—have not been proven to be highly effective. Nonetheless, these initiatives may be beneficial to some, perhaps in ways that are difficult to measure, which may justify their continuation. Additional research may also lead to the development of scalable programs that could have greater impact. There is a clear need for jails to be empowered and funded to improve HIV screening, HIV care, and rudimentary community linkage to HIV services.

However, to achieve a major shift from the current cycle in which mass incarceration, particularly of racial and ethnic minority men, disrupts and tears at the social fabric, intervention needs to be large-scale and collective, rather than targeted and individualized. The most obvious place to start is with mass incarceration itself. Changes in public policy that reduce the staggering rate at which the country imprisons its citizens would be expected to impact the HIV epidemic. There is now growing support from across the political spectrum for criminal justice reform, given recognition that the current situation is unaffordable, unsustainable, and untenable. Changes in sentencing laws are starting to address racial and ethnic disparities, and the mandatory minimums that sent many low-level offenders to prison for years are being abandoned so that judges can apply their discretion when sentencing. Diversion programs are keeping more people from becoming incarcerated, and drug courts are helping to link those with substance use disorders to mandated care rather than time behind bars. These and other initiatives are behind the start of a downtrend in the number of people imprisoned in the United States. They can therefore be expected to reduce the profound disruptions caused by the mass incarceration that fosters HIV transmission.

Conclusion

Mass incarceration in the United States powers the HIV epidemic. Policies and laws leading to high rates of incarceration, especially of African American men, have numerous adverse effects on communities and society, including the creation and promotion of circumstances that heighten the risk of transmission of HIV and other sexually transmitted diseases. To fully address the HIV epidemic, the epidemic of incarceration must be addressed. NCMJ

David Alain Wohl, MD professor, Division of Infectious Diseases, UNC School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

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Potential conflicts of interest. D.A.W. has no relevant conflicts of interest.

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America: Equity and Equality in Health 4

Mass incarceration, public health, and widening inequality in the USA

Christopher Wildeman, Emily A Wang

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See **Editorial** page 1369

See **Comment** pages 1376 and 1378

This is the fourth in a **Series** of five papers about equity and equality in health in the USA

Department of Policy Analysis and Management, Cornell University, Ithaca, NY, USA (C Wildeman PhD); **Bureau of Justice Statistics, Washington, DC, USA** (C Wildeman); **Rockwool Foundation Research Unit, Copenhagen, Denmark** (C Wildeman); **Yale School of Medicine, New Haven, CT, USA** (E A Wang MD); **and Bureau of Justice Assistance, Washington, DC, USA** (E A Wang)

Correspondence to: Dr Christopher Wildeman, Department of Policy Analysis and Management, Cornell University, Ithaca, NY 14853, USA
cjw279@cornell.edu

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In this Series paper, we examine how mass incarceration shapes inequality in health. The USA is the world leader in incarceration, which disproportionately affects black populations. Nearly one in three black men will ever be imprisoned, and nearly half of black women currently have a family member or extended family member who is in prison. However, until recently the public health implications of mass incarceration were unclear. Most research in this area has focused on the health of current and former inmates, with findings suggesting that incarceration could produce some short-term improvements in physical health during imprisonment but has profoundly harmful effects on physical and mental health after release. The emerging literature on the family and community effects of mass incarceration points to negative health impacts on the female partners and children of incarcerated men, and raises concerns that excessive incarceration could harm entire communities and thus might partly underlie health disparities both in the USA and between the USA and other developed countries. Research into interventions, policies, and practices that could mitigate the harms of incarceration and the post-incarceration period is urgently needed, particularly studies using rigorous experimental or quasi-experimental designs.

Introduction

In this Series paper, we review research into the effects of mass incarceration on health and health disparities within the USA and between the USA and other developed democracies. We first outline the contours of mass incarceration. According to sociologist David Garland,[1] who first used a variant of the term mass incarceration, it entails historically and comparatively extreme levels of incarceration that are so heavily concentrated among some groups that incarceration has

Search strategy and selection criteria

We strove to achieve a complete search of peer-reviewed articles and government-funded reports relating to incarceration and health. Because many of the journals that publish research on family and community effects of mass incarceration are not indexed by PubMed or PsychInfo, we first did a Google Scholar search for peer-reviewed articles and government-funded reports, including a host of specific health conditions (such as hepatitis, cardiovascular disease, and major depressive disorder), in addition to the terms "incarceration," "imprisonment", "jail", and "prison" as our search terms. We then searched PubMed and PsychInfo using the same terms. We did not use any date restrictions in our search. We also searched the bibliographies of key peer-reviewed articles and relied on the few other review articles on the topic. Although our exploration was international in scope, we restricted our search to articles and documents published in English, with a focus on newer, innovative work. We cite the highest-quality works that have contributed the most to this burgeoning field, with special emphasis on studies using strong research designs making identification of plausibly causal relationships possible. Because the goal of our Series paper was to consider the consequences of mass incarceration for health disparities in the USA, we placed substantially more emphasis on studies within the USA, although we also report research on prisoners' health in other developed democracies when appropriate.

Key messages

- In the USA, incarceration is common and concentrated in the black community
- Individuals who experience incarceration at any point in their life are disproportionately in poor health both before, during, and after their incarceration
- The physical health of individuals improves in some domains during incarceration, although the mental health of individuals generally worsens
- Having been formerly incarcerated is associated with poor mental health and physical health outcomes, as well as elevated mortality risk
- Although little research considers the indirect health consequences of incarceration, having a family member incarcerated harms the mental and physical health of non-incarcerated female partners and children
- High incarceration prevalence also compromises community health, with the strongest evidence implicating community-level increased incidence of HIV
- Mass incarceration contributes to racial health disparities in the USA across a range of outcomes because of its direct and indirect consequences for health, and the disproportionate concentration of incarceration among black communities
- Because the USA incarcerates many more of its citizens than do other developed democracies, mass incarceration might have contributed to the country's lagging performance on health indicators such as life expectancy

become a normal stage in the lifecourse. We then consider the health effects of current incarceration and having ever been incarcerated, as well as health disparities attributable to these effects. We next review data about the broader health effects of mass incarceration, focusing on families, communities, states, and nations, as well as health disparities attributable to these effects. Finally, we focus on the next steps for researchers, medical professionals, and policy makers. Throughout, we are careful to note that the teasing out of causal relationships between incarceration and health outcomes on the basis of existing research is difficult because there are no randomised controlled trials of incarceration relative to no incarceration in this research area. To overcome these obstacles to causal inference, we focus (when possible) on studies in which confounders were rigorously addressed through various strategies, including natural experiments.

We find that incarceration is a pressing public health concern, affecting not only the health of currently and formerly incarcerated individuals but also that of their families and communities.[2–4] Because of these myriad negative consequences of mass incarceration for American society, we argue—consistent with some research in this area[5,6]—that mass incarceration might partly account for widening health inequality both within the USA and between the USA and other developed democracies.

Mass incarceration

On any given day, the USA incarcerates more of its citizens (2·2 million) and at a higher level (700 per 100 000) than any other country. Yet, for much of its history, the USA was no outlier in terms of incarceration. As in most developed democracies—the focus of all of our comparisons, because these countries are more similar to the USA in key ways (such as general standard of living, political structure, and core population health indicators such as infant mortality and life expectancy at birth) than some other counties (eg, China and Russia) that have high incarceration prevalence—the US incarceration prevalence hovered between 100 per 100 000 and 200 per 100 000 in the mid-20th century.[7] In 1950, for instance, the US incarceration prevalence was roughly 175 per 100 000,[8] somewhat lower than Finland's (185 per 100 000).[9] This prevalence was considerably increased for developed democracies, but not an aberration.

Starting in the mid-1970s, the US incarceration prevalence started to spiral upward (figure 1).[5] By 1985, the USA incarcerated 312 of every 100 000 residents. 20 years later, the prevalence had risen to 743 per 100 000. Its closest competitors among developed nations were New Zealand (173 per 100 000), Luxembourg (159 per 100 000), and Spain (140 per 100 000).

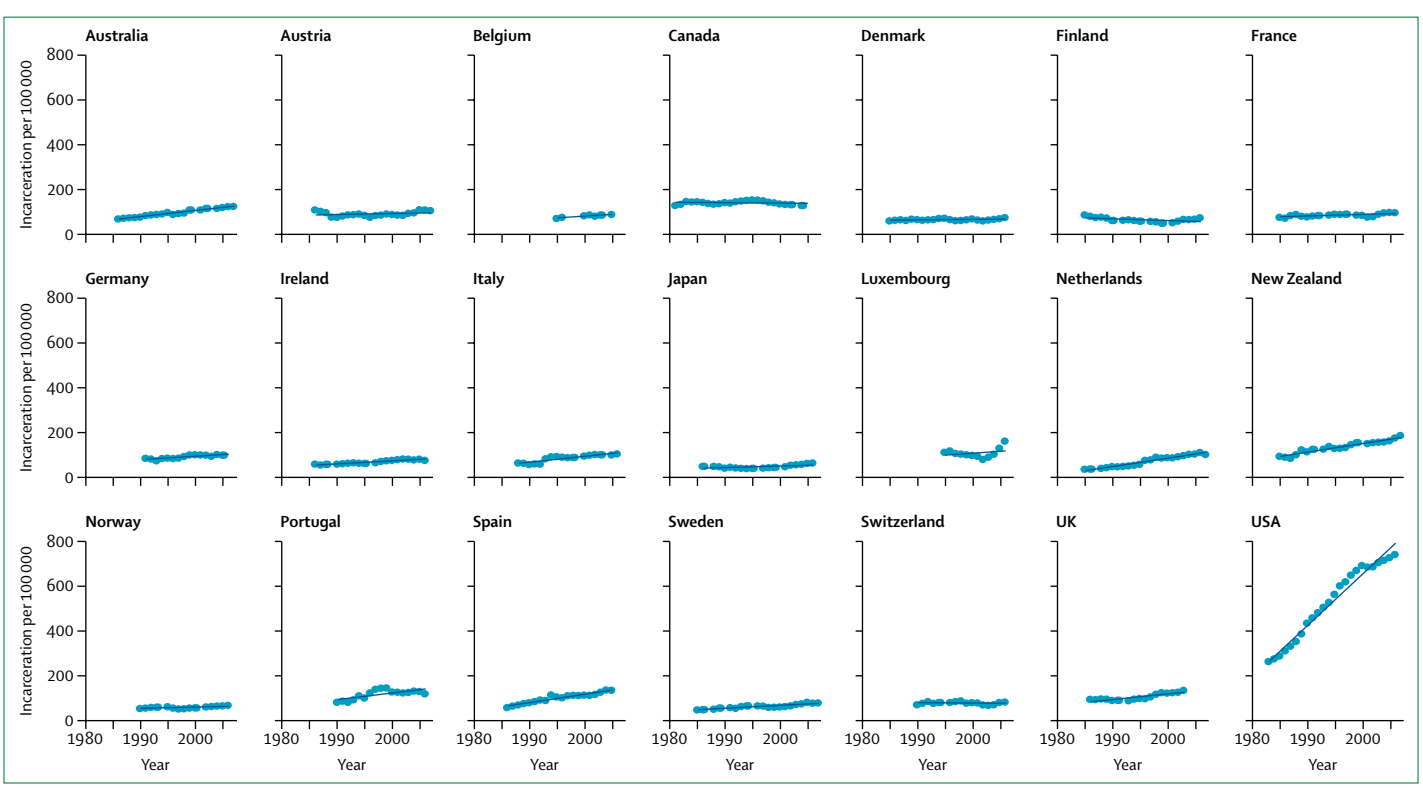

Figure 1: **Trends in incarceration prevalence in 21 developed democracies, 1981–2007**
Calculations based on data from Wildeman (2016).[5]

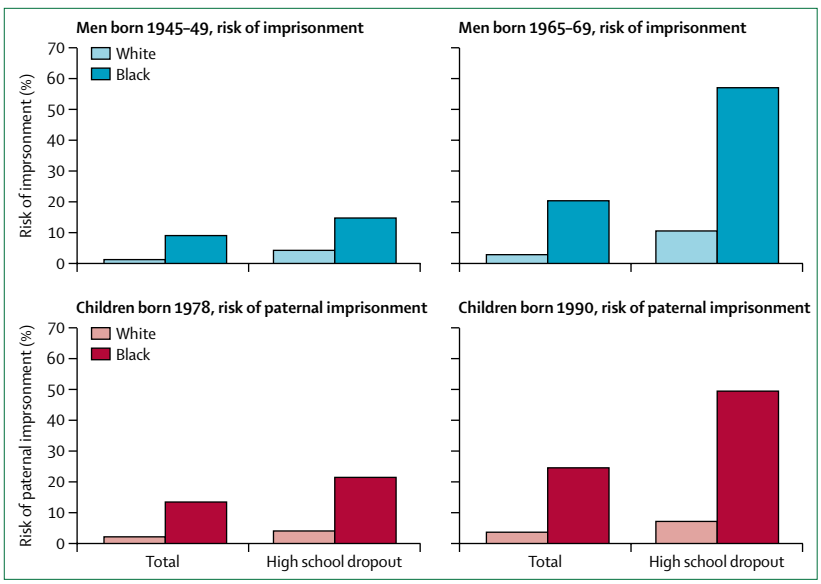

Figure 2: **Risk of ever experiencing imprisonment by age 30–34 years for US men by birth cohort, and risk of ever experiencing paternal imprisonment by age 14 years for US children by birth cohort**
Sources: Western and Wildeman (2009);[15] Wildeman (2009).[16]

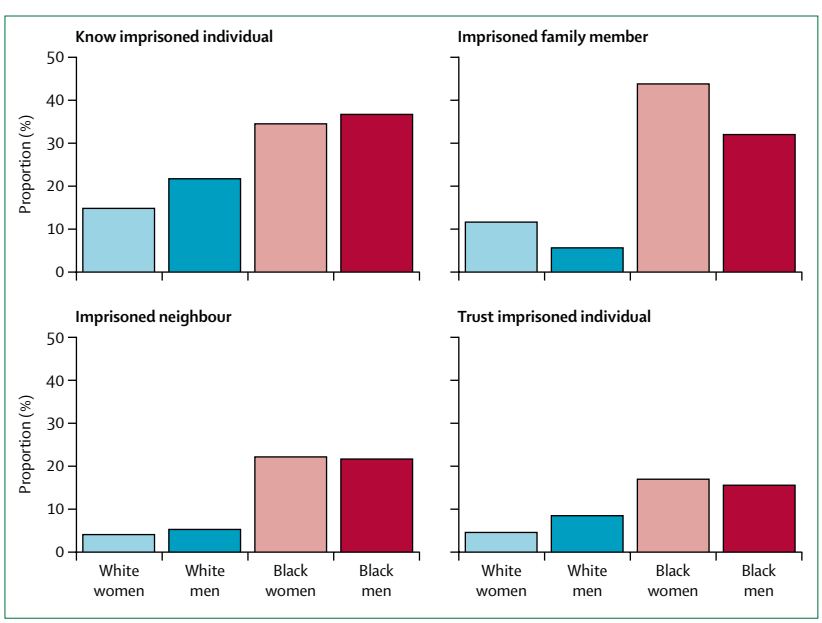

Figure 3: **Proportion of people in the USA who know individuals currently in state or federal prison, by race and gender**
Source: Lee and colleagues (2015).[19]

Although the causes of mass incarceration are complex, social and criminal justice policies such as the so-called War on Drugs, the deinstitutionalisation of people with mental illnesses, and punitive sentencing policies such as three-strike laws (mandating life imprisonment for third offences of even relatively minor felonies) and mandatory minimum sentences (requiring judges to impose long sentences for specific offences, even for some first-time offenders) undoubtedly helped to both launch mass incarceration and keep it going.[10,11]

Disparities in incarceration by race or ethnicity and education in the USA are marked and have been since the earliest statistics were collected.[10,12] Incarceration has become common for poor men from ethnic minorities.[13,14] 2·8% of (non-Hispanic) white men born in the late 1960s and 20·3% of (non-Hispanic) black men from the same cohort spent time in prison by their 30s (figure 2).[15,16] For black men who did not complete high school, this risk was 57·0%. Moreover, these figures in fact underestimate the number of men who have experienced incarceration, because the data refer only to incarceration in prisons (facilities run by the state or the federal government that hold inmates with sentences in excess of 1 year) and exclude incarcerations in jails (local facilities that hold inmates awaiting trial or sentenced to less than 1 year), which are far more common. No data are available for the cumulative risk of total incarceration (in prisons and jails) because accurate estimates of the cumulative risk of ever experiencing jail incarceration in the USA do not exist.

The conditions of incarceration in the USA are also extreme, a fact much less discussed in the literature. For example, although precise estimates are not available for the number of individuals in solitary confinement (a form of imprisonment in which an inmate is isolated from any human contact, often with the exception of guards and other members of the prison staff), one study's investigators estimated that 100 000 prisoners are in solitary confinement in the USA on any given day,[17] a figure that suggests that the USA has more prisoners in solitary confinement than the UK has prisoners overall.

Because men who experience incarceration are connected to families, their incarceration can have implications for the health and wellbeing of women and children as well. Furthermore, because of the vast racial disparities in the risk of experiencing incarceration, the spillover effects of incarceration for family members could have implications not only among men but also among whole communities, divided along racial and ethnic lines. The proportion of black children who will ever have a father imprisoned is high (figure 2). A black child born in 1990 had a 25·1% chance of having their father sent to prison;[16] for those whose fathers did not finish high school, the risk was roughly double that, at 50·5%. According to the Bureau of Justice Statistics, 52% of state and 63% of federal inmates reported being parents, to an estimated 1·7 million children (ie, 2·3% of American children).[18]

The exposure of black families to incarceration cuts deeper still. Nearly half of black women have a family member or extended family member imprisoned (figure 3).[19] For white women, the risk is only a quarter as high, at 12%.[19] Black people are also more likely than the overall population to know someone who is incarcerated, have a neighbour incarcerated, or have a confidante incarcerated.[19]

The pronounced disparities in exposure to incarceration emphasise the salience of research into its health effects. If incarceration substantially worsens the health of non-incarcerated family members, mass incarceration could be an important driver of broader health disparities in the USA. Moreover, stark disparities in exposure to incarceration probably extend to acquaintances, neighbours, and confidantes, potentially amplifying the contribution of incarceration to health inequities in the USA.[19]

Effects on the health of prisoners

A growing number of studies have examined the effects of incarceration on health.[2–4] In this section, we review these effects, which have also been reviewed elsewhere,[2,3] including in a 2016 series in *The Lancet* that explored the relationship between incarceration and communicable diseases such as HIV, viral hepatitis, and tuberculosis. The Series documented the burden of these communicable diseases among prisoners,[20] as well as options for treatment[21] and prevention[22] in carceral settings. Importantly—and by contrast with most research in this area—the Series also considered the implications of communicable diseases for the human rights of prisoners[23] and in regions where disease transmission is an especially pressing problem (sub-Saharan Africa,[24] eastern Europe,[25] and central Asia[25]).

We consider in more detail the family and community consequences of mass incarceration, a topic that has received little attention in the medical community. Although we focus on adults, it is important to note that incarcerated young people are at high risk for poor physical and mental health.[26,27]

Research into the effects of current incarceration on health is beset by several shortcomings beyond the obstacles to causal inference mentioned in our introduction. Scant research has examined objectively measured health outcomes, and relatively few studies have considered the mental health of current and former inmates in the USA.[28] Even fewer studies have explored how different durations (eg, months or years) or types (eg, prison or jail) of incarceration affect health. In a similar vein, little research has considered how the conditions of confinement (eg, solitary confinement) or types of criminal justice policies (eg, three-strike laws) affect health. Despite these caveats, most evidence suggests that incarceration has strongly harmful effects on the health of prisoners over their lifecourse.

Effects of current incarceration

Being incarcerated might, paradoxically, decrease mortality and physical morbidity in the short term for some groups. Black male prisoners, for instance, have far lower mortality than similarly aged black men in the general population.[29–32] Researchers speculate that the protective effects of current imprisonment for this group might be driven by a decreased risk of death by violence or accidents, reduced access to illicit drugs and alcohol, and improved health-care access, although the mechanisms are debated.[29–32] However, the decreased mortality for black male prisoners does not hold for other subpopulations of prisoners.[29–32]

Adjudication between these competing hypotheses is beyond the scope of this Series paper, but we note that prisons and jails are some of the only places in the USA where health care is guaranteed by law (although the often-dramatic variation in the quality of health care in correctional facilities undermines the notion that this mandate has been met). In 1976, the US Supreme Court ruled in *Estelle v Gamble* that failure to provide basic health care in correctional facilities violated the constitutional prohibition against cruel and unusual punishment. That ruling mandated that prisons and jails provide acute care services, but, as the prison population has aged, prison health-care services have had to provide increased care for chronic diseases as well.[4]

For the **Series on HIV and related infections in prisoners** see http://thelancet.com/series/aids-2016

For many Americans, correctional facilities provide incarcerated adults with their first access to preventive and chronic medical care.[4] An estimated 40% of individuals with chronic medical conditions are diagnosed with a chronic condition while incarcerated,[33] and 80% report seeing a medical provider while incarcerated.[34] Unfortunately, the quality of medical care for chronic disorders in correctional settings is highly variable,[35] and overcrowding of correctional facilities (especially prisons) has even reached the stage at which judges have mandated the release of prisoners because the level of overcrowding constitutes cruel and unusual punishment.[4]

Compared with the non-incarcerated population, incarcerated individuals have increased prevalence of infectious disease (including sexually transmitted diseases, HIV, and hepatitis C), chronic medical conditions (eg, hypertension, diabetes, and asthma), substance use disorders, and mental health disorders;[34,36] Fazel and Baillargeon[2] provide a more exhaustive list of differences. While incarcerated, inmates also have a high prevalence of vitamin D deficiency.[37] However, findings from a few studies have shown that incarceration can improve the management of chronic conditions relative to time spent outside of prison, especially in cases of severe functional limitation[38] and HIV.[39] However, in the time between release and re-incarceration, the probability of viral suppression declines from roughly 50% to 30%.[25] Unfortunately, because of data limitations, the effect of incarceration on many of these disorders is unclear.

Overall, physical and psychological wellbeing worsens for inmates, while mortality declines for black inmates. Some study findings show worsening of depressive symptoms[40] and life satisfaction[41] during incarceration. Furthermore, inmates placed in solitary confinement suffer greatly,[41] and such confinement has serious short-term and long-term repercussions.[42,43] For instance, inmates in solitary confinement in the New York City jail system had 6·27 greater odds (95% CI 3·92–10·01) of

potentially fatal self-harm (including hanging and ingesting poison) than those not placed in solitary confinement.[44] Nonetheless, most research into the mental health of inmates, while acknowledging the high prevalence of mental health problems in correctional populations, has not tested whether mental health changes as a result of incarceration.[36]

Of course, the total health effect of incarceration is a product of time spent incarcerated and time spent free. Individuals who experience incarceration spend, on average, far more time out of prison than in it, with much of that time happening after prison release since most individuals experience their first incarceration by their late 30s. For instance, black men who ever experience prison incarceration spend 13·4% of their working lives in prison.[45] In other words, the average prisoner spends roughly six times as long exposed to the consequences of past incarceration as they do being incarcerated. Hence, in considering the lifelong health effects of incarceration, the period after release is of crucial importance.

Effects of past incarceration

Although current incarceration has mixed effects on prisoners' health, past incarceration has a clearly deleterious impact on health. Patients with chronic conditions are often released without medications or a follow-up appointment in the community.[46] Even when provided with a prescription at release, many do not obtain them.[47] Recently released inmates are less likely to have a primary care physician, disproportionately use emergency departments for health care, and have high levels of preventable hospital admissions compared with the general population.[48] Because former inmates are also at disproportionately high risk of mental health problems that can interfere with their ability to follow through with care for serious medical conditions,[49] these obstacles to receiving care are even more important.

Before the Affordable Care Act, four-fifths of former inmates were uninsured at release; even among those who are insured, many do not have the resources to pay for their care.[50] The Affordable Care Act might diminish the health consequences of incarceration, because 10% of the uninsured population has a recent history of criminal justice involvement.[51] Unfortunately, the refusal on the part of several states to accept the Act's expansion of Medicaid coverage for the poor will probably attenuate this benefit.

Upon release, former inmates often have no housing, employment, and family support, and face discrimination in finding jobs and housing.[10,11] Individuals with health issues are also confronted with the responsibility to manage these problems, obtain health care, and keep up with medications and appointments while also meeting their basic needs. Individuals convicted of drug felonies are also prohibited from accessing safety-net services such as public housing and food subsidies.[1] Given the many barriers that individuals face after incarceration, it is unsurprising that they earn 30% less than similar never-incarcerated individuals and that some of this effect is driven by discrimination.[10,11]

Findings from studies of administrative data have shown increased mortality among former inmates, although the magnitude of this association varies.[29,30,52] Investigators of one study[53] that used a quasi-experimental design to assess whether incarceration caused premature mortality found an effect for women, but not for men, after adjustment for confounders measured before incarceration to ensure appropriate time-ordering of confounders, explanatory variables, and dependent variables (such as a history of illicit drug use, low education, and pre-existing health problems). The findings of this single study should be tested in further research, especially because it is the sole study to suggest that prison release might not increase mortality risk.

The evidence that a history of incarceration is associated with increased morbidity is somewhat more consistent than the data for mortality, although, again, it remains unclear whether this relationship is indeed causal. However, with the exception of the Coronary Artery Risk Development in Young Adults (CARDIA) study[54] and the Veterans Aging Cohort study,[55] few studies include both incarceration measures and objective health data. In CARDIA, the adjusted odds of left ventricular hypertrophy (a common sequela of poorly controlled hypertension) among the ever-incarcerated were 2·7 (95% CI 0·9–7·9) compared with the never-incarcerated.[54] In a matched sample, a history of incarceration was associated with 1·8 times increased odds (95% CI 1·147–2·519) of having hepatitis or tuberculosis.[56] Studies including less precise measures of health have also consistently linked previous incarceration with poor health.[3] Research has also shown that the formerly incarcerated have very high prevalence of psychiatric morbidity, with associations especially pronounced for dysthymia and major depressive disorder, and that incarceration is at least partly to blame for this increase.[40,49]

The direct effects of incarceration on health disparities

Although black populations have high levels of incarceration, few studies have examined the direct effects of incarceration on racial health disparities. The scant research in this area supports two conclusions. First, racial health disparities among prisoners are muted; differences in mortality and morbidity between black and white individuals are smaller in prison than in the general population.[2,38] Second, the post-release effects of incarceration certainly contribute somewhat to racial health disparities, although the magnitude of this effect is unclear. In an analysis, investigators using data from the National Longitudinal Survey of Youth[56] concluded that disparities in incarceration prevalence contributed greatly to disparities between black and white men in midlife

self-reported health, as measured by the 12-Item Short Form Health Survey; findings from another study[38] that used the same data and a measure of self-reported functional limitation (defined as having had any health problem that precluded working) showed that incarceration explained only 6% of racial disparities in this measure. Findings from a population-based study in New York City[57] suggested that disparities in incarceration contributed substantially to disparities in asthma prevalence.

Mass incarceration also creates methodological problems in documentation of racial health inequities in prospective longitudinal studies. Because black men have very high levels of incarceration, they are more likely than others to drop out of prospective longitudinal surveys. As a result, research based on such surveys could misestimate the magnitude of health disparities if the health status of black men who experience incarceration is worse than those who do not, as most research suggests is indeed the case.[58]

The indirect effects of incarceration on health

Overview

Until the past 10 years, most research into the health consequences of incarceration had focused exclusively on how incarceration affects those who experience it. However, as incarceration has become increasingly common, researchers have become aware of the broader health effects of mass incarceration on families, communities, and even nations. Because little research has examined the spillover effects of mass incarceration on direct measures of health, our Series paper also encompasses broader studies of wellbeing. In this area, we are unable to make distinctions between the effects of current and past incarceration.

Effects of family member incarceration on health

Research into the broader family consequences of incarceration suggests myriad channels through which incarceration might matter. For example, incarceration decreases the financial contributions individuals can make after release;[59] while incarcerated, their financial contributions are virtually nil.[60] Because keeping in touch with a prisoner is costly,[52] incarceration exacerbates financial hardships beyond what would be expected due just to decreased earnings. Incarceration also disrupts romantic unions.[61] The resulting decrease in adults' time available for household duties might reduce the time spent on health-related activities. Having an incarcerated family member—and re-incorporating a former inmate—is also stressful. Moreover, if the stigma attached to incarceration pervades families, as research suggests,[62,63] having a family member incarcerated could reduce the social support available to families.[64]

Although incarceration can also affect prisoners' siblings, husbands, boyfriends, and parents, most research has focused on the heterosexual partnerships and children of male prisoners. Findings from two studies have suggested a link between parental incarceration and child mortality: investigators of a US study[65] found elevated infant mortality, whereas findings from a Danish study[66] of mortality up to age 18 years showed increased mortality among sons but not daughters of incarcerated men. A few other studies have also shown evidence of gender-specific effects; parental incarceration was associated with significantly more weight gain[67] and higher levels of inflammatory markers (eg, C-reactive protein) among adolescent girls than among boys.[68] Yet, given the dearth of research in this area, these findings about gender differences should be interpreted with some caution.

Although very few studies have used physiological measures to assess the health of children of incarcerated parents, the literature assessing self-reported, caretaker-reported, and teacher-reported outcomes for children is vast. These study findings tell a consistent story: paternal incarceration is associated with behavioural and mental health problems throughout childhood,[69] and a host of poor outcomes (including increased prevalence of substance misuse[70]) in adolescence and adulthood.[71–73] The most wide-ranging assessment of the effect of parental—mostly paternal—incarceration used data from the National Survey of Children's Health,[74] showing links to a host of negative health outcomes among children, including self-rated health, depression, anxiety, asthma, and obesity. Findings from a study[75] that used data from the National Longitudinal Study of Adolescent Health (Add Health) underscored that many of the negative consequences of paternal incarceration continue throughout adolescence and early adulthood.[75]

For maternal incarceration, the story is more complicated. A handful of studies have linked maternal incarceration with worse self-reported health,[75] educational,[76] and criminal justice outcomes[77] for children. However, other study findings[78,79] have shown no effects on children after adjustment for factors that are associated with the risk of incarceration and poor child health, such as low parental education, financial instability, and criminal activity. Given the paucity of studies on this topic, and evidence that maternal incarceration helps some children and harms others,[80] the net effect of maternal incarceration on children remains an open question.

Fewer quantitative studies (but many qualitative ones[60,62,63]) have assessed how incarceration affects other adult family members. Women whose partners are incarcerated experience substantial mental health deterioration,[81] as well as a host of elevated risk factors for cardiovascular disease.[82] However, this effect on cardiovascular risk factors was not observed among men in the household.[82] We must note that the effect of incarceration on family violence is unclear. There is little doubt that incarcerated individuals[83] and their families[65,84] experience great exposure to violence throughout their

lives. The incarceration of a family member might increase family violence by destabilising already-disadvantaged homes. Alternatively, the removal of violent family members from the household might decrease exposure to violence for the remaining household members. Existing research provides little guidance regarding either possibility.

Effects of incarceration on communities

Neighbourhoods with high levels of incarceration are associated with poor population health, including high prevalence of asthma, sexually transmitted infections, and psychiatric morbidity;[85–90] the challenge is to decipher whether imprisonment, rather than the factors that lead to imprisonment, is the driver. All studies done so far[85–90] have tested a linear effect of imprisonment, yet a non-linear relationship between neighbourhood-level prevalence of incarceration and community health is also possible. Clear[85] proposed a hypothesis of coercive mobility, suggesting that the crime-fighting benefits of imprisonment at low levels are substantial, but that these benefits fall as imprisonment increases, and that further increases in imprisonment raise—rather than reduce—crime. Testing of this hypothesis is difficult. If true, it has profound implications for understanding the effect of incarceration on community health, not only because high levels of violent crime remain one of the most serious threats to public health in these communities but also because it suggests that the public health consequences of incarceration in these communities could be far larger than an additive model would imply.

Indirect effects of incarceration on states, nations, and health disparities

The indirect effects of incarceration on states and nations, and health disparities more broadly, are most readily measured at the population level. Hence, we discuss all three in the same section.

Variation at the state level has rarely been used to analyse the health effects of differences in incarceration prevalence, despite the availability of state-level data about key health outcomes and incarceration. Findings from a few studies have suggested that states with large numbers of former inmates have poorer-quality health-care systems,[91] lower life expectancy,[92] and higher incidence of HIV infection[93] and infant mortality[65] than do states with few former inmates. These state-level studies have also shown a link between incarceration prevalence and health disparities. Findings from one study,[93] for instance, showed that mass incarceration explained most of the racial disparities in the incidence of HIV infection.

There is less country-level than state-level research into the relationship between incarceration and health. Of these studies, two stand out. Stuckler and colleagues[6] showed that increased incarceration was linked with increased tuberculosis incidence (a 1% increase in incarceration was associated with a 0·3% increase in tuberculosis incidence) and increased multidrug-resistant tuberculosis. Findings from another cross-national study[5] showed that increases in incarceration were associated with substantial worsening of life expectancy and infant mortality, although the population-level consequences of incarceration for health were significantly worse in the USA than in other developed democracies. This analysis suggested that US life expectancy would have increased 51·1% more and infant mortality would have fallen 39·6% more from 1983 to 2005 if incarceration had remained at the mid-1980s level. Taken together, these findings suggest that mass incarceration could contribute to both within-country and between-country inequalities in health.

Finally, as for longitudinal studies, the US point-in-time surveys underlying much of the epidemiological and health services research (eg, the National Health Interview Survey) exclude inmates,[94] resulting in substantial misestimates of disease prevalence and, particularly, racial disparities. With so many minority men behind bars, their exclusion from almost all research provides a fanciful picture of progress in the USA, especially for health inequities between black and white populations.

Conclusions and next steps

Soaring incarceration since the mid-1970s has profoundly affected health in the USA, especially in poor and minority communities. Incarceration might temporarily improve some physical health outcomes during imprisonment. However, after release and over the lifecourse more broadly, imprisonment seems to worsen both physical and mental health, although we make this statement with some hesitation because few (if any) strong causal tests are available and the health conditions considered so far have been limited. Although data are sparse, mass incarceration also probably worsens the health of the female partners and children of inmates.

Because of the uneven distribution of incarceration, these ill effects could be a significant contributor to racial health disparities. The criminal justice system has become an institution—like the education system—that both reflects systematic and institutionalised racism and exacerbates existing inequities.[3,11,71] Moreover, as some recent research into the relationship between incarceration and population health indicates,[5] the uniquely high incarceration prevalence in the USA might partly underlie the country's poor showing relative to other developed democracies on population health measures over the past 40 years.

On a more hopeful note, soaring costs, overcrowding of prisons and jails, and a spotlight on overly aggressive policing in minority communities have engendered agreement that mass incarceration has failed and should be reversed. There is also increasing recognition, although not consensus, that policing should be altered

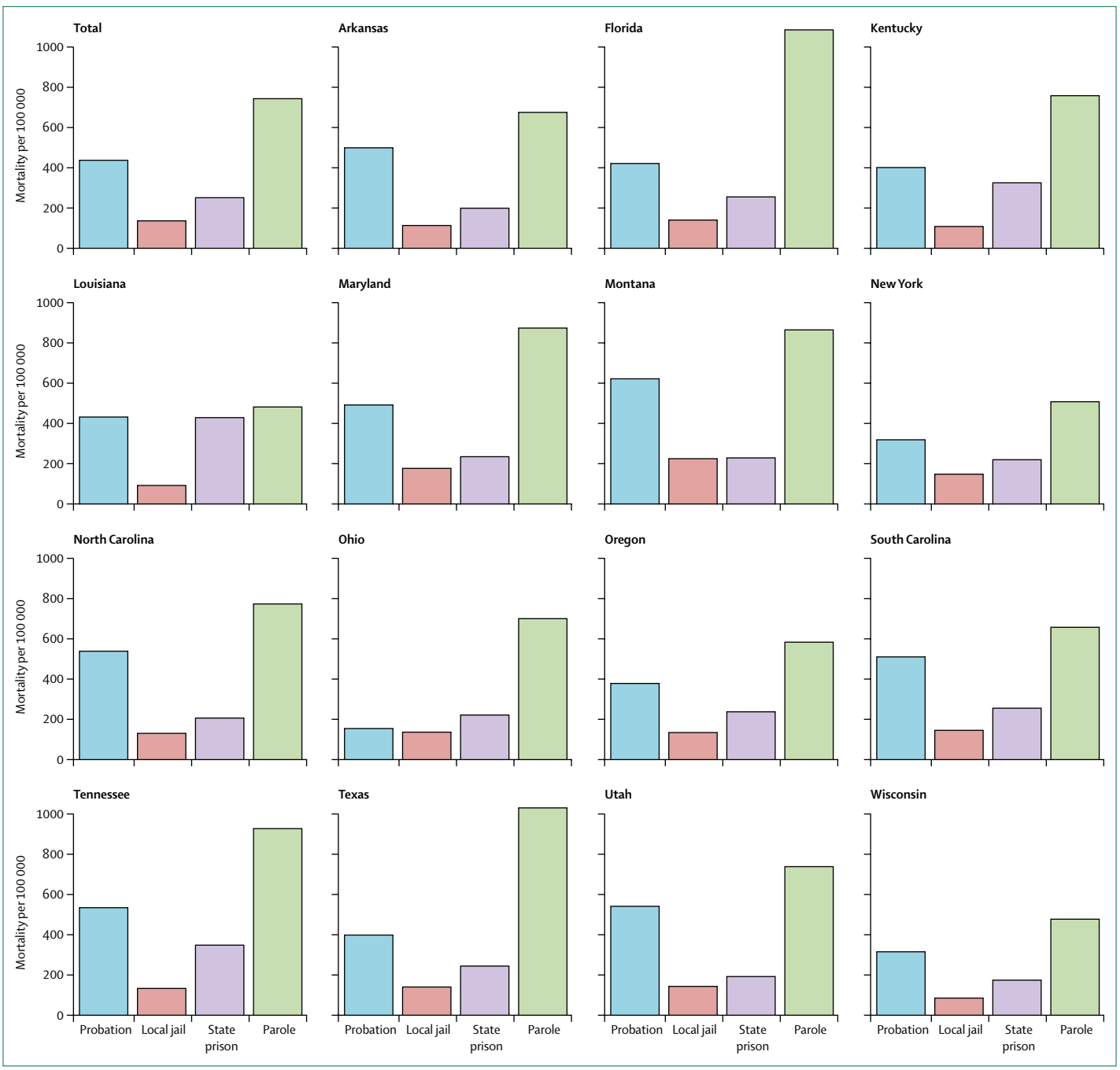

Figure 4: **Mortality of individuals on probation, incarcerated in local jails, incarcerated in state prisons, and on parole in 15 US states, 2000–12**
Calculations based on data from the Annual Parole Survey and Annual Probation Survey;[96] and from Noonan and Ginder (2014).[97]

in key ways (eg, to limit stops to those absolutely necessary and to promote less adversarial contact between the police and the community than frequently occurs at present). The shift in the nation's approach to criminal justice and drug sentencing has led to a small decrease in the prison population, a fall of 2·9% since its peak in 2009.[95] The pace of downsizing could be quickened with more sweeping reforms in drug sentencing, reduced admissions of technical parole violators, expanded community corrections for those convicted of low-level property and drug crimes, and medical paroles for sick and elderly inmates. Those concerned about mass incarceration—and health disparities—should advocate for such reforms, in

conjunction with improved access to health care and social services for individuals who have been affected by the criminal justice system. However, even these changes would cut the penal population by just 30%, because much of the increase in incarceration is due to the adoption of long sentences for violent offenders.

Moreover, shrinking the imprisoned population size while expanding the population under social control in the community will probably not ameliorate health inequity unless the roots of mass incarceration are addressed through broader efforts to provide opportunities and conditions for people in marginalised communities to improve their lives. Our analyses of data from the Bureau of Justice Statistics highlight this point. As shown in figure 4, the crude mortality of probationers and parolees exceeds that of state prisoners and jail inmates in nearly every state.[96,97] These data are unadjusted by age, race, and other traits that might account for these differences. However, until US data collection systems are redesigned, we will not know the health risks for the roughly 6 million Americans on probation.

Were the USA to return to the levels of incarceration of the 1970s, at least a half a million people employed by the criminal justice system could lose their jobs, and 63 million individuals would still have criminal records. The criminal justice system is so deeply rooted in America's political system and socioeconomic structures that the damage to the health of our communities cannot be mitigated without addressing the root causes of mass incarceration and the forces that inevitably seek to maintain it.

True understanding of the health consequences of mass incarceration and necessary changes in criminal justice policy requires investment in improved data, the inclusion of several questions about criminal justice exposure in national health surveys, and the linkage of administrative data about incarceration with data for income, employment, housing, educational outcomes, and health services. We should also invest in a host of experiments that test interventions to mitigate the negative direct and indirect health effects of incarceration and community corrections, and seek perspectives that facilitate engagement between physicians, epidemiologists, and criminologists.[98] There is a special urgency to develop effective interventions that take into account the experiences of women and juvenile offenders. There is also a pressing need to consider whether differential processing within the criminal justice system of individuals with mental health conditions—wherein individuals with more resources are able to gain access to treatment (and avoid jail or prison stay) and those with fewer resources are not—could contribute to growing racial, ethnic, and class disparities in physical and mental health.

Improved data would help us to understand how mass incarceration has contributed to—and will continue to contribute to—health inequity, and facilitate undoing the damage it has caused. But research is not enough to stem the health effects of mass incarceration on individuals, families, and communities, or to mitigate existing health inequities. As physicians and researchers, we should engage in conversations about the interplay between racism, social control, and health. Such discussions must also address the health consequences of living in a community subject to overly aggressive policing, and engage communities of colour to build trust, develop solutions, and ultimately improve health outcomes.

Contributors

CW and EAW contributed equally to all components of this Series paper.

Declaration of interests

We declare no competing interests.

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Study Shows Care for HIV-Positive Prisoners Poor after Release, Worse for Those Re-Incarcerated

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by Scott Grammer

A study published by the Public Library of Science on October 18, 2018 found that prisoners with HIV tend not to retain their level of care after being released, and that those who are re-incarcerated fare even worse. The study reported that during a three-year post-release evaluation period, retention in care "diminished significantly over time, but was associated with HIV care during incarceration, health insurance, case management services, and early linkage to care post-release."

The report "merged statewide databases from the Connecticut Department of Correction and Connecticut Department of Public Health on all people living with HIV who were released from prisons or jails in Connecticut ... between 2007 and 2011." Each individual in this group was followed for three years after release to track retention in care and viral suppression (an indicator that the HIV infection has been so weakened through treatment that it cannot be detected in the blood).

Most participants in the study were unmarried men who were either black or Hispanic, who had acquired HIV though intravenous drug use. The report found that those who retained care following their release from prison or jail did well, but only 67.2% maintained their level of care for one year, 51.3% for two years and 42.5% for three years after release. Those who were re-incarcerated were more likely to retain medical care, but less likely to show viral suppression.

Dr. Frederick Altice, director of Yale's HIV and Prisons program and the study's co-author, said that in some states, prisoners are re-enrolled in Medicaid before release, but in other states it can take longer. Altice, who has been treating HIV patients since the early '80's, said, "[HIV] is a chronic disease. People don't need services six weeks after release. They need them immediately."

Dr. Cato T. Laurencin, a professor at the University of Connecticut and founding editor of the *Journal of Racial and Ethnic Health Disparities*, noted the post-release period may be key in the fight to eliminate new transmissions of HIV. "We are now talking about the fact that we believe that we can end new cases of HIV in our lifetime," he said. "We need to see changes in this setting. And if we're not, that tells us we're not on course."

The study found that former prisoners who had health insurance were more than twice as likely to reach viral suppression, and those who received intensive case management were twice as likely to

show viral suppression at the end of the three-year study period.

A 2009 report by the Public Library of Science revealed that at any given time, 1/6 of all HIV patients are incarcerated.

Sources: *npr.org, journals.plos.org*

PUBLIC HEALTH

After Prison, Many People Living With HIV Go Without Treatment

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HEATHER BOERNER

On re-entering society, formerly incarcerated people struggle to get health care and treatment for HIV.

Kenyon Ellsworth for NPR

When people living with HIV walk out of prison, they leave with up to a month's worth of HIV medication in their pockets. What they don't necessarily leave with is access to health care or the services that will keep them healthy in the long term.

That is one of the findings of a study published Tuesday in PLoS Medicine. The study was among the first to follow people with HIV from jail or prison back into the community. What they found was that most people — more than half — fell out of care within three years of leaving prison.

But those who did stay in care did well — better than those who returned to prison. They were more likely to have access to health insurance and intensive case management that connected them to support groups, housing, medical care and other services.

The fact that so few had that experience points out how the health care system fails this population, says Dr. Frederick Altice, director of Yale's HIV and Prisons program and the study's co-author. In some states, prisoners are re-enrolled in Medicaid before they're released. In others, it can take weeks or longer.

"[HIV] is a chronic disease," says Altice, who has been treating people with HIV since the early 1980s. "People don't need services six weeks after release. They need them immediately."

Indeed, the study suggests that the post-prison-release period may be key in the fight to eliminate new transmissions of HIV, says Dr. Cato T. Laurencin, a professor at the University of Connecticut and founding editor of the *Journal of Racial and Ethnic Health Disparities*, who was not involved in the study.

"We are now talking about the fact that we believe that we can end new cases of HIV in our lifetime," Laurencin says. "We need to see changes in this setting. And if we're not, that tells us we're not on course."

Connecting data to care

One in 6 people living with HIV is incarcerated at any one time, according to a 2009 study. The good news is that these people often get treatment behind bars. Some studies show 71 percent of people leave prison with HIV that is so well-controlled, it is undetectable with current tests.

The bad news is that once people leave prison, engagement in care and associated HIV viral control drops precipitously, as the study shows.

Indeed, one year after leaving prison, among the 1,094 study participants, only 67.2 percent were still in care. The following year, that number dropped to 51.3 percent. By the end of the third year, only 42.5 percent were still in care.

That's for everyone in the study. When researchers teased out people who were re-incarcerated from those who weren't, retention was higher; 48 percent of the re-incarcerated had care, while 34 percent of those living outside did.

But fully controlled HIV was more common in the people on the outside, the study showed.

"This is the paradox," says Altice. "People who are re-incarcerated didn't have good viral suppression. It's much better for health [to stay out of prison]."

Upping the odds of good health

So what made the difference? When the researchers looked at what differentiated the people who stayed in care from those who didn't, a few things stood out. People with health insurance were more than twice as likely to achieve viral suppression as those without.

Second, those with access to intensive case management — services that can connect people to support groups, drug treatment programs, housing and other services — were twice as likely to still be virally suppressed at the end of three years as those without it. Even those who received only five case management visits were still 69 percent more likely to be virally suppressed at the end of the study.

One limitation of the study, says Dr. David Wohl, co-director of HIV services at the North Carolina Department of Corrections and professor of medicine at the University of North Carolina, is that it's hard to generalize the findings in one state, an urban one like Connecticut, nationally.

"This is a best-case scenario," says Wohl. "The services described in this paper don't exist in North Carolina."

Indeed, like many Northern states, Connecticut expanded Medicaid. And it is among 16 states that have changed their rules to suspend rather than cancel Medicaid when people enter prison. Many states cancel Medicaid enrollment, requiring recently incarcerated people to navigate reapplying. Other states have extremely limited eligibility for Medicaid that might exclude adults without disabilities.

"This also tells me something else," says Altice. "This should be a group targeted for Medicaid expansion."

For the University of Connecticut's Laurencin, those interventions could start to ameliorate the impact of HIV on communities of color. Seventy-eight percent of the people in the study were black or Latino. Only 1 in 3 of them stayed in care. As HIV becomes more concentrated in communities of color while effective treatment and prevention more often go to white, middle-class Americans, this study should signal an "all hands on deck" approach to helping this group of people, says Laurencin.

Kelsey B. Loeliger, Ph.D., a medical student at Yale School of Medicine and lead investigator of the Yale study, concurred. And all the study authors, as well as Wohl, made some variation of this statement as well: Maybe we should look at locking up fewer people.

"Prison reform is needed in so many ways," Loeliger says. "So much is needed across the board for this population. If you come at it from a strict medication-adherence standpoint, that's such a small piece of the puzzle."

Getting treatment

When Bryan C. Jones walked out of an Ohio penitentiary in 2008, he did so with two weeks of HIV medications, a virus that had grown resistant to those drugs, and an immune system that was shutting down.

He was sick and he knew his meds weren't working. So when he boarded the Greyhound back to Cleveland, he left the pills in a trash can in the one-room storefront bus station.

"I knew I was resistant to those meds they gave me," Jones, now 58, says. "And I knew that prison didn't give me anything to further my acceptance of living with HIV. No one [knew] my status. [And] I [wasn't going to] walk around with meds. It just didn't make sense to me."

But Jones was one of the lucky ones. A few weeks after his release, he returned to his old HIV doctor, paid for with Ryan White Care Act funds while he waited for his Medicaid to be approved. His doctor put him back on a regimen that worked a little better. Jones started educating himself on the virus and his options. He started telling people he had HIV.

A case manager connected him to permanent housing.

That "made all the difference," Jones recalls. "It was a place I could freely take my meds and not have to worry about people seeing it in the fridge or having to dig it out of a drawer."

He also stayed in substance abuse treatment. Then a new medication came out that his virus wasn't resistant to. Now, a decade later, Jones is still a regular at his doctor's office. He started bringing HIV support groups to the penitentiary where he had been housed. He runs another support group and advocates for himself and his friends. His HIV is so well-controlled on a newer drug combination that his doctor hasn't been able to detect it in his blood for six years.

In the process, he found a greater purpose.

"See, care can't keep you in care," he says. "You've got to have something else. That's the tie that binds."

Heather Boerner is a health and science reporter based in Pittsburgh.

hiv hiv/aids incarceration