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Local Service Category:	Referral for Healthcare: Incarcerated & Recently Released
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:	Referral for Health Care and Support Services (RFHC) directs a client to needed core medical or support services in person or through telephone, written, or other type of communication. Activities provided under this service category may include referrals to assist HRSA Ryan White HIV/AIDS Program (RWHAP)-eligible clients to obtain access to other public or private programs for which they may be eligible.
Local Service Category Definition:	<p>Support of Referral for Healthcare-Incarcerated (RFHC-Incarcerated) that include identification of individuals at points of entry and access to services and provision of:</p> <ul style="list-style-type: none"> • Referral services (including healthcare services) • Linkage to care • Health education and literacy training that enable PLWHs to navigate the HIV system of care • Benefits counseling <p>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 TCT upload process, care coordination with medical resources within the jail, care coordination with service providers outside the jail, and discharge planning.</p> <p>These services must focus on expanding key points of entry and documented tracking of referrals.</p> <p>Counseling, and referral activities are designed to bring people living with HIV into Outpatient Ambulatory Medical Care. The goal of RFHC-Incarcerated is to decrease the number of underserved individuals with HIV/AIDS by increasing access to care. RFHC-Incarcerated also provides the added benefit of educating and motivating PLWHs on the importance and benefits of getting into care.</p>
Target Population (age, gender, geographic, race, ethnicity, etc.):	People living with HIV (PLWHs) incarcerated in The Harris County Jail.
Services to be Provided:	<p>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.</p> <p>RFHC 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.</p>

	<p>Therefore, RFHC for the Incarcerated has been designed to consider the uncertain nature of length of stay in the service delivery. Three tiers of service provision have been designated. They are:</p> <ul style="list-style-type: none"> • 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. <p>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.</p> <p>Transitional social services should NOT exceed 180 days.</p>
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 and recently released from the Harris County Jail.
Agency Requirements (TRG Only):	<p>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.</p> <p>Agency must obtain and maintain access to TakeChargeTexas (TCT), the online system to submit THMP applications.</p>
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 Referral to Healthcare Standards of Care and the Houston HSDA Referral for Health Care and Support Services for the Incarcerated Standards of Care . The agency must have policies and procedures in place that comply with the standards <i>prior</i> to delivery of the service.

FY 2025 RWPC “How to Best Meet the Need” Decision Process

Step in Process: Council		Date: 06/13/2024
Recommendations:	Approved: Y: _____ No: _____ Approved With Changes: _____	If approved with changes list changes below:
1.		
2.		
3.		
Step in Process: Steering Committee		Date: 06/06/2024
Recommendations:	Approved: Y: _____ No: _____ Approved With Changes: _____	If approved with changes list changes below:
1.		
2.		
3.		
Step in Process: Quality Improvement Committee		Date: 05/14/2024
Recommendations:	Approved: Y: _____ No: _____ Approved With Changes: _____	If approved with changes list changes below:
3.		
2.		
3.		
Step in Process: HTBMTN Workgroup #3		Date: 04/17/2024
Recommendations:	Financial Eligibility:	
1.		
2.		
3.		

Supreme Court may halt health care guarantees for inmates

Christina Pazzanese

Experts on law, policy say originalist view used to overturn Roe could upend '76 ruling based on cruel, unusual punishment clause

A [new paper](#) published in the March 2 issue of The New England Journal of Medicine argues a minimal standard for inmate health care established in a 1976 Supreme Court ruling could soon be struck down if re-examined through the same legal lens that resulted in overturning Roe v. Wade in June. The earlier judgment found that deliberately withholding treatment from prisoners with serious medical needs amounted to “cruel and unusual punishment” under the Constitution’s Eighth Amendment. The lead authors, Harvard Kennedy School public policy Professor [Marcella Alsan](#), a 2021 MacArthur Foundation fellow and physician-economist who studies health inequities, and [Crystal S. Yang](#), Bennett Boskey Professor of Law at [Harvard Law School](#), spoke to the Gazette about this issue. Interviews have been edited for clarity and length.

GAZETTE: What types of physical and mental health needs does the U.S. prison population have and how did the pandemic affect this situation?

ALSAN: The incarcerated population is more likely to have chronic disease, such as diabetes, hypertension, and cancer, and also to suffer from higher rates of infectious disease. Some estimates suggest that more than half have a mental health problem, a substance use disorder, or both. So, you have this double burden of disease, which we often talk about in public health with respect to developing countries where you have both communicable and noncommunicable diseases, you have that going on in our nation’s prisons and jails, with hepatitis, HIV, and then substance use, mental health problems, and other chronic conditions alongside it.

COVID highlighted many U.S. health system failures, including the dire conditions experienced by individuals who are incarcerated, who died at [rates](#) of COVID-19 that were 2.3 times higher than the general population.

GAZETTE: Prisoners have few legal tools if they feel they’ve been denied health care. They also have many structural hurdles to overcome. What are they up against?

YANG: The landmark Supreme Court case *Estelle v. Gamble* established that failure to provide adequate medical care to incarcerated people as a result of deliberate indifference to serious medical

needs violates the Eighth Amendment's prohibition against cruel and unusual punishment. But this standard is a very high bar to meet. Inadvertent failure to provide adequate medical care or a physician's negligence in diagnosing or treating a medical condition do not meet the standard.

In addition, it is difficult for incarcerated individuals to bring lawsuits. Under the Prison Litigation Reform Act [PLRA], enacted in 1996, incarcerated individuals must meet certain requirements before they can file suit. For example, the PLRA requires incarcerated individuals to exhaust all administrative remedies by going through a correctional facility's internal grievance policies. But these policies can be complex, onerous, and hard to understand. The PLRA also caps the amount of fees that attorneys can recover for representing incarcerated individuals, reducing the incentives for private attorneys to take these cases, which means that individuals must seek pro bono legal representation or represent themselves. The PLRA also increased filing fees for individuals, imposing a substantial monetary burden to filing suit. These hurdles, among others, mean that many meritorious claims may not be brought. And even if incarcerated individuals are successful in overcoming these hurdles, the PLRA places limits on the scope and duration of prospective relief, limiting the ability of legal remedies to generate systemic change.

GAZETTE: Why aren't the incarcerated getting the medical attention and care they need? Is the PLRA the primary cause or are other factors equally to blame?

ALSAN: There is pressure on local and state administrators of correctional facilities to contain costs. The people who are being incarcerated are often sick and have not received routine medical care. If there is no countervailing pressure for quality and standards exercised by an independent authority, the expected outcome is for facilities to focus on cost containment above all else, with sometimes tragic consequences.

There is clearly a political economy component to this, as well. Fissures between "us" and "them" make it difficult to robustly invest in safety net programs even when it is in our long-term national interest. For instance, punitive approaches to crime have been adopted as opposed to rehabilitative approaches. From such a vantage point, failure to provide quality health care [is] thought of as part of the sentence and erroneously believed to function as a deterrent.

The PLRA is a symptom of a broader issue. In the absence of accreditation and standards, you have litigation filling the void, which is inadequate to the task. It's a fear-based, retroactive system which has officials asking, "What do we do to not get sued?" as opposed to asking, "How can we best take care of this population?" That's a totally different frame of reference.

GAZETTE: Some COVID-related lawsuits now working their way through the courts could open the door for the Supreme Court to decide that withholding treatment or failing to protect prisoners from pandemics does not embody cruel and unusual punishment as understood in the Constitution. Why is that a possibility and what are the potential effects if that happened?

YANG: The court established in *Estelle* that failure to provide adequate medical care to incarcerated people as a result of deliberate indifference violates the Eighth Amendment's prohibition against cruel and unusual punishment by noting that the Eighth Amendment embodies "broad and idealistic concepts of dignity, civilized standards, humanity, and decency." And thus, the court examined whether conditions in correctional facilities comported with evolving standards of decency.

The current court recently eliminated the longstanding constitutional right to abortion in *Dobbs v. Jackson Women's Health Organization* by interpreting the 14th Amendment through a particular originalist lens. A similar approach could jeopardize the constitutional right established in *Estelle*. Indeed, some of the justices in the *Dobbs* majority have explicitly argued that the Court has abandoned the Eighth Amendment's original meaning, with some even having stated in prior decisions that they might vote to overrule *Estelle*. We fear that COVID-related lawsuits alleging constitutional violations under the *Estelle* standard could present a case whereby the current Court may claw back the constitutional right to health care for incarcerated individuals. The impact of such a decision would be devastating for justice-involved individuals and further exacerbate health inequality in the United States.

"The landmark Supreme Court case *Estelle v. Gamble* established that failure to provide adequate medical care to incarcerated people ... violates the Eighth Amendment's prohibition against cruel and unusual punishment," said Professor Crystal Yang. "But this standard is a very high bar to meet." Photo by Jessica Scranton.

GAZETTE: Terms like "deliberate indifference" and "serious medical needs" are often a source of confusion and open to different interpretations by judges, which can hamstring prison administrators setting policy for the delivery of health care in their facilities. What's been the impact of this in practice?

ALSAN: That discretion in terms of what is meant, and the lack of specific standards with specific auditing, and an incentive to meet those standards and penalties for failing to meet those standards, leads to massive heterogeneity in how people are treated. Depending on what side of a state or county line you're arrested, that determines whether or not you get access to substance use treatment or, if you're a Type 1 diabetic, how quickly you get your insulin — all sorts of things.

GAZETTE: Unlike most countries, the U.S. does not have a uniform standard of care for prisoners or a means to enforce one. What do other countries do and why aren't we following those protocols?

ALSAN: The Nelson Mandela Rules [adopted by the United Nations in 2015 and named for the former president of South Africa, who spent 26 years in prison in his fight against apartheid] establish minimal standards for the treatment of those deprived of their liberty and [require](#) that individuals be afforded humane treatment, including health care, that is up to community standards. The U.S. lacks an independent national regulatory body that can enforce standards and provide robust oversight at every level of incarceration. Countries leading on correctional health are those that view prisoner health as part of public health more broadly. This includes some countries in Europe that have transferred prison health care responsibility from the ministries of justice to their ministries of health, such as Finland, the United Kingdom, and especially Norway. Tracking individuals across the life cycle, including during stays in jail or prison, is facilitated by robust and harmonized electronic health records and public insurance.

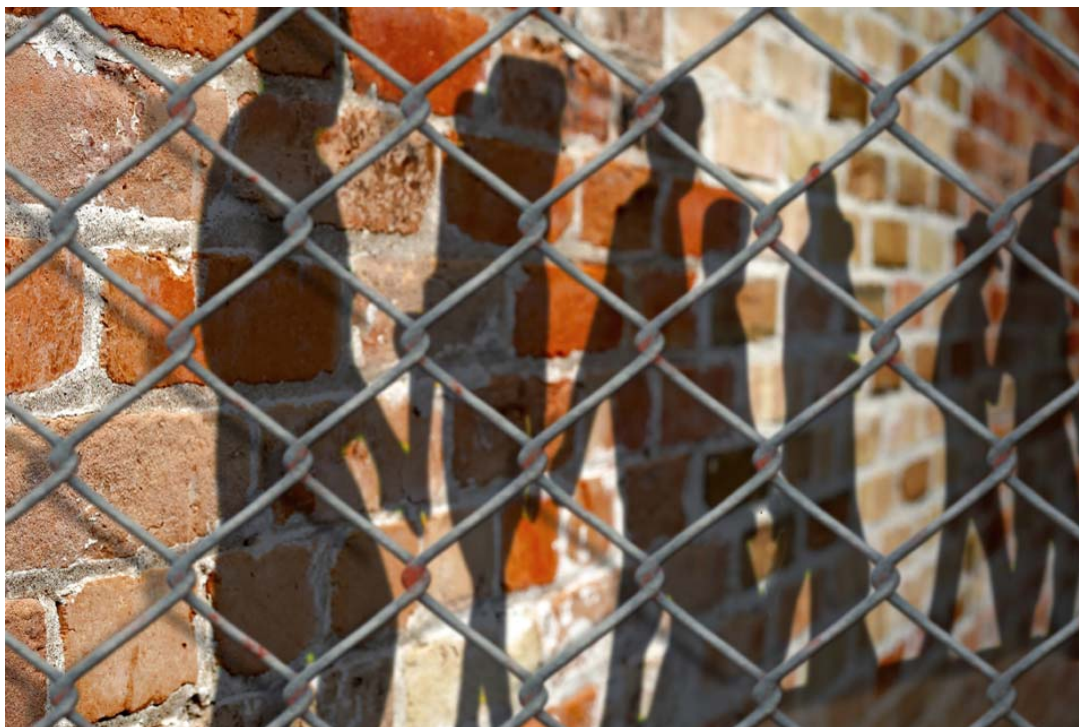
GAZETTE: What changes to the PLRA or new legal protections would rectify the systemic health care disparity prisoners experience?

YANG: My co-authors and I believe that several legal changes are necessary to improve health care for incarcerated individuals. Substantial amendments or repeal of the PLRA are necessary to ensure robust access to the court system for individuals who have suffered injuries. But legislation is also needed. Ideally, this legislation would establish clear and robust standards of care, provide incentives for compliance and penalties for noncompliance, and establish an independent, well-resourced federal oversight body that can conduct vigorous, unannounced audits of facilities.

Incentives for compliance with health standards could also be greatly enhanced by allowing federal funds for medical services to flow to incarcerated persons and using standards as a prerequisite for their continued receipt. And we may already be seeing the precursors to this type of approach. Just recently, in January 2023, the U.S. Department of Health and Human Services (HHS), through the Centers for Medicare & Medicaid Services (CMS), approved a first-of-its kind initiative to allow Medicaid to fund treatment for substance use disorders for people incarcerated in California state prisons, jails, and juvenile detention centers up to 90 days prior to their release. This announcement was followed by a Feb. 21, 2023, call from the Biden administration for other states to submit similar proposals. We hope that this is the first of many needed reforms.

Women and HIV in US Prisons or Jails

Submitted on Dec 8, 2022



Note: *Since people who are incarcerated in the US do not have access to Internet websites like ours, we hope that outside family members or friends of incarcerated women who could benefit from this material, or prison staff members, will print this fact sheet and share it with women inside. If you would like to request printed copies mailed to a facility, or to someone who works with women inside, please fill out [this online order form](#) [2]. If you are an outside advocate for incarcerated women living with HIV, please also see our fact sheet, [Advocating for Women Living with HIV in Prisons or Jails in the US](#) [3].*

If you are in prison or jail, you have the right to HIV care and treatment. The Eighth Amendment of the US Constitution guarantees this right, and the institution you are in is supposed to honor it.

HIV Testing

If you have not tested positive for HIV, taking an HIV test can be an important step to protect your health. If you test negative, it is a chance to learn about the many ways HIV can be prevented. If you find out that you are living with HIV, it is an opportunity to find out about ways to stay healthy and live a full life with HIV — including taking HIV medications.

If you were not offered an HIV test during intake, you can ask for a test later, if there is any chance you might have acquired HIV ... before you were arrested.

Depending on where you are incarcerated, you might have been offered an HIV test (or given one without a choice) when you were first processed. If you were not offered an HIV test during intake, you can ask for a test later, if there is any chance you might have acquired HIV (gotten HIV, become HIV-positive) in the months or even years before you were arrested.

It is important to remember that it takes one to three months after acquiring HIV for the virus to show up on most HIV tests. This period between getting HIV and producing antibodies (markers in your blood) to HIV is called the "window period." If you believe you were exposed to HIV less than three months before you entered prison or jail, an HIV-negative test result will not be reliable. For an accurate result, it is important to be tested outside the window period.

Victoria Drain and Penni Bullington are two women living with HIV who spoke to journalist and advocate Victoria Law about their very different experiences with HIV testing while incarcerated:

"Victoria Drain doesn't know how long she has been HIV positive. She was never offered an HIV test during the months she spent in an Ohio county jail.

"It was not until she was sentenced and sent to Ohio's prison system in July 2016 that she was screened for HIV. 'Your second morning there, every new offender undergoes a series of blood work, HIV testing not only included, but mandatory,' Drain, a trans woman sentenced to a men's prison, told TheBody.com via letter. 'A couple weeks later, I'm called to medical and received the news of my HIV result.'" ...

"I tested poz in 2000 at Corcoran," wrote Penni Bullington in a letter to TheBody.com. Bullington is a trans woman who has spent 28 years in and out of California's prison system. But, she continued, she 'wasn't told or given my test results till the day I paroled from Mule Creek [a different prison] in 2002. So every single person I tattooed, shot dope, had sex with, is now [or] could very well be HIV-positive.'

Bullington had been in various California prisons throughout the 1990s and, both inside and out, watched many friends fall ill and die from HIV-related complications. Despite their deaths, she said, 'I used to think I would never get it.'"

From [*"Despite Advances on the Outside, Life for Women With HIV in Prison Remains Risky."*](#) [7] by Victoria Law for *TheBody.com*. *TheBody.com* is an online-only publication, but you can have someone on the outside print and mail a copy for you if you would like to read the full article.

Just Diagnosed? You Are Not Alone.

If you just found out that you are living with HIV, it is normal to feel a range of strong emotions. It is important to allow yourself to feel whatever comes up. It is also important to know that HIV is not a death sentence. It bears repeating over and over again that when people are able to manage the virus with HIV medications, they live long, healthy lives with HIV.

Here are a few things to consider doing when you feel ready to cope with living with HIV:

Educate yourself about HIV. Many people living with HIV, including in prison, have said that learning as much as they could about HIV was part of staying as healthy as possible. Prison medical staff may be able to provide you with some information. There are several organizations and publications in the Related Publications section below that you can write to for print copies of health magazines, fact sheets, or booklets. Outside family or friends can also print things from the Internet and mail them to you.

Some people may worry that asking for HIV information will reveal their HIV-positive status to someone — including prison staff who read the mail — before they are ready to share it. If this is a concern, you can write to a lawyer asking them to provide the information for you, since communications with lawyers are private.

Building a support network can help you learn how to cope. Other people in the same prison or jail as you, including medical staff, may be able to refer you to a support group inside, or an outside HIV organization that works with people in the facility you are in. It can be very helpful to join a prison support group if there is one. If not, you can see if it is possible to start one.

It may be possible to find a community or prison advocacy group to help you. It is ideal to be able to find at least one other person who is living with HIV in prison who you can trust to talk to.

You may want to take your time in telling others. You do not have to feel that you have to tell everyone right away. If it is hard to tell family and friends at first, you may want to turn to HIV organizations or groups. In our recent survey, a majority of women reported they disclose first to another person living with HIV, often because it feels safe and free from judgment.

If you are religious, you may find talking to a prison faith leader (chaplain, imam, rabbi, or another religious official) helpful. Even if they do not know much about HIV, they can provide comfort. Like the medical staff, your communications with religious staff are also supposed to be private.

Part of this section is adapted from ["Words to Live By,"](#) [8] by a formerly incarcerated person living with HIV, for Prison Health News.

Waheedah Shabazz-El is a Muslim woman, mother, grandmother, great-grandmother, and a powerful and celebrated HIV activist based in Philadelphia. Shabazz-El cofounded and is a staff member of Positive Women's Network - USA, a national advocacy network of women living with HIV. Before that time, she went to jail while addicted to crack, and was diagnosed with HIV and given an AIDS diagnosis while inside. She shared some of her experience on The Well Project's A Girl Like Me blog in 2010:

"I'm the person who landed in jail with a bail that was way out of the reach of my family, so I sat for six months (had to remain in jail). I'm the person who took a test for HIV while I sat...whose results came back positive, compounded with an AIDS diagnosis... I'm the person who had made a shambles of her life and decided that death was the only way out. I'm the person who wished for death...but just like all my other wishes that never came true...death never came either. That was seven years ago. But, then they say seven is a lucky number.

...I knew in order to gain acceptance and become empowered over my AIDS diagnosis (like my mentor), I had to seek out the services and support systems that had worked for him. Sounds pretty simple? For me these were the magic bullets.

Today I am a person who no longer uses drugs, a day at a time. I'm a person who gives back what was so freely given to her. I have become a mentor for people just like me. Incarcerated, in recovery from addiction and in recovery from feelings of inadequacy associated with HIV.

Today I am a person for whom HIV is no longer a secret, but in contrast, HIV turned out to be a situation that has brought significant purpose to my life. Today I am the person who no longer wishes for death, but instead I aspire immortality through being a resonating voice for those behind bars, in addiction recovery and women living with HIV/AIDS who haven't found their own voices yet or who choose to speak softly."

From ["From the Crack House to the White House? \(Not in My Wildest Dreams\),"](#) [9] by Waheedah Shabazz-El

See the sections below for even more experiences from currently and formerly incarcerated women (and a few men) that may be helpful to you in advocating for yourself and your health — and in knowing that you are not alone.

HIV Treatment and Care

No matter what type of institution you are incarcerated in (federal, state, or county), the Eighth Amendment to the US Constitution applies. It reads: "Excessive bail shall not be required, nor excessive fines imposed, *nor cruel and unusual punishments inflicted.*" According to US courts, this means that you have a right to medical care while you are in jail or prison — including HIV care and HIV medications.

HIV Medication Basics

It is very important to take HIV medications exactly as they are meant to be taken, and not to miss doses.

Even though there is no cure for HIV, nowadays there are many HIV medications that help keep the virus under control with few to no side effects. Treatment with HIV medications can improve your quality of life and help you stay healthier longer. National and international treatment guidelines, which health care providers all over the world use in providing HIV care, recommend that all people diagnosed with HIV take HIV medications, even if they have never felt sick due to HIV.

It is very important to take HIV medications exactly as they are meant to be taken, and not to miss doses. If HIV medications are not taken regularly on schedule and as they were prescribed (adherence), then the level of HIV medications in your body may get too low for the medications to be able to fight HIV effectively. When a medication can no longer fight HIV, the virus has become "resistant" to that medication. Drug resistance can cause your viral load to rise. As mentioned earlier, if your viral load is undetectable, you cannot transmit the virus. These are just some of the many reasons why challenges or delays getting HIV treatment in prison or jail are so serious.

Getting Your HIV Medications

If you are experiencing delays or other problems getting your HIV medications on time and the right way, there are several things you can do:

If you learn the names of prison medical personnel, you can address requests and complaints about missed meds to the appropriate person.

Grievance systems can be slow. It can be faster to ask your unit staff to call the medical department to retrieve your meds. If the prison won't follow the doctor's orders, you can complain in writing to your treating doctor. Write to the prison warden and medical officers too.

It's good to store a copy of your prescriptions in your cell or on your person. If you learn the medication schedule and stick to it, you can't be blamed for missed doses.

A phone call to the prison from someone outside — a family member or friend — asking why you are not getting your meds may produce results.

If, despite your best attempts, the prison is just too overcrowded or poorly run to deliver your doses, you can consider filing suit. You'll need to show a court that the prison did not provide prescribed medication as required. Medical lawsuits are hard to win, and you first have to go through the prison grievance process (except if you are suing for money damages after release).

Excerpted from "How to Get Your Meds" by Paul Wright, in the first issue of Turn It Up! Staying Strong Inside (Fall 2015/Winter 2016), a health magazine for people in prison. The first issue is available online at the link below if you are able to get someone on the outside to print and mail it for you. The second issue is available in print if you write to the address below.

Voices of Women Seeking HIV Treatment

Different facilities operate differently, and every woman is not going to have the same experience getting HIV medications and care while incarcerated. Some prisons have good medical staff and offer decent treatment. But others do not.

Several women living with HIV have shared the actions they took to get the treatment they needed — and that it was their right to have. Your experience may be different, but it may help to know that many others have lived with HIV and sought treatment inside.

*"Though [**Kodi Faircloth**] told jail officials about her HIV status and asked for medication, she received none, she said.*

"It was only after she entered Mabel Bassett Correctional Center, Oklahoma's largest women's prison, and sent 45 requests for medical care that she was finally able to see a doctor [on Nov. 2, 2015]. ... Even then, it wasn't until mid-November that she finally began receiving medication. ...

"Once a year, Faircloth is brought to a room with a video screen where she 'meets' with the HIV specialist, a practice known as telemedicine. 'She reads our labs by email,' she described. 'The appointment lasts only three to five minutes.' The specialist then instructs the prison's chronic care doctor about any follow-up treatment that Faircloth might need. Then Faircloth is escorted from the room until the next year's visit.

"Faircloth undergoes blood tests every four months, but, she writes, 'Unless we stay on them, we never get our blood results.'"

"Christine Johnson already knew her status when she entered the North Carolina Correctional Institution for Women in January 2014. 'I have been HIV positive for little over 20 years,' she wrote in a letter to TheBody.com. 'The virus has been suppressed for almost eight years. I am very open and honest in prison, as well as on the street, about being HIV positive,' she explained. But that openness comes with a price: Johnson faces shunning, stigma, and violence on a daily basis. ... She's also had her medications, food, and clothing stolen from her, acts which happen not simply because she's in prison but because she's open about her status in prison.

"The stigma and violence largely come from the other incarcerated women, most of whom have little to no knowledge about HIV. There's no easy way to get information, either. Like many prisons, there are no programs or classes about HIV and transmission, leading to fear and ignorance. Johnson believes offering such a class or program would help curb the ignorance, violence, and stigma. 'I believe that when women come in on reception [they] should take classes on how you can catch HIV,' she reflected."

"[Penni] Bullington, who has been transferred to several different facilities since returning to prison in 2004, says that each time she arrives at a new prison, her medications, medically ordered diet, and medical appointments are cancelled. 'You will wait on a doctor or nurse practitioner to see you within 90 [days] of your arrival,' she explained. 'You will see some doctor on a Skype/telemedicine [call] who will dictate if you get to keep any of your [medical] stuff. But generally, you have [already] gotten sick and had to file an emergency 602 appeal to get services.' (A 602 is a written complaint, or grievance, about prison conditions or practices.)"

From ["Despite Advances on the Outside, Life for Women With HIV in Prison Remains Risky,"](#) [7] by Victoria Law for TheBody.com. TheBody.com is an online-only publication, but you can have someone on the outside print and mail a copy for you if you would like to read the full article.

Advocating for Yourself After Getting HIV Meds

Getting HIV meds by advocating for yourself is a great accomplishment — but the problems may not be over quite yet. Teresa Sullivan is another seasoned HIV advocate in Philadelphia who was formerly incarcerated and now trains people living with HIV who have been released from prison or jail to be advocates and peer educators. Sullivan has also been a co-editor of *Prison Health News*; she shared one past experience at the pill window, and what she recommends people do if they face obstacles getting their HIV medications while inside.

"When I went to jail in 2005, one of the biggest problems that I had was at the medication window. One day going to get my HIV medications at the window, I looked at the meds in the cup and they were the wrong meds. There was one too many of the same meds for my HIV medications, and one med I never saw before. This was a big problem because I know that taking the wrong dose of my meds would make me sick – and that med that I never saw before in the cup was not the medication that the doctor ordered for me.

"Being told if I did not take the medication in the cup that I would have to go to the hole – that made me very scared, and so I took the medications. Let me say, if I knew what I know today I would have never done that stupid thing, because I got so sick that they had to take me to the ER and I could have died. It is important to know your rights about taking medication while in jail. ..."

"Knowing your rights when it comes to advocating for your medications:

Before going to the medication window, you should have had a communication with the doctor about what meds you will be taking. Secondly, you should ask the doctor if they have a med chart for you to look at so you know what your meds are and what they look like. THIS IS YOUR RIGHT.

If, for some reason, when you go to the medication window the meds don't look right to you, ask the nurse to please check the doctor's order again. THIS IS YOUR RIGHT.

Because sometimes the nurses may be in a rush and they can make mistakes, these mistakes can make you sick or could kill you if you do not advocate about your meds. THIS IS YOUR RIGHT.

Too often, [people] don't know their meds when going to the med window, and too often they don't ask questions about what they are taking, because they don't know that they have the right to advocate for themselves. If the nurse does not answer your question, then ask to talk to the sergeant on duty. THIS IS YOUR RIGHT.

Once you're in jail, medical staff supply you with your regular prescription medications. Usually the jail staff dispenses only medication from its infirmary, since it won't trust that what you brought in is the real thing. Sometimes its practitioners try to substitute a similar medication for what you normally use. If this is a problem, have your doctor specify 'no substitutions' in his or her letter. Often, there is a big lag of 24 hours or more between getting arrested and first receiving regular doses of medication."

Excerpted from ["Getting Out Alive,"](#) [10] by Teresa Sullivan for Prison Health News. You can write to them for copies of their publication at the address below.

Getting the Best Care You Can

In addition to the suggestions above, these tips are just a few overall steps that may help you get

better care while in prison or jail. They are summarized from a longer article written by Brian Carmichael, a longtime prison HIV activist who has been living with HIV for more than 20 years, and in prison for more than half of his life, in the second issue of *Turn It Up! Staying Strong Inside*.

Educate yourself. *Learn about your medical conditions, including the best available treatments and medications. Reach out to knowledgeable peers and local organizations. Know your stuff and be your own advocate.*

Keep a journal. *In a writing tablet, calendar, or some blank typing paper from the Law Library, create your own little medical file, keeping track of everything related to your health, including the names of all of your medications. Entries don't have to be long and drawn out, but enough for you to keep track and provide accurate information to your provider when making decisions about your treatment.*

Be polite, respectful, and appreciative. *Just saying "Please" and "Thank You" goes a long way. Even if you're beefing with a doctor or nurse, avoid personal attacks and insults, as much as their attitudes or actions may lead you to feel disrespected. When you file a grievance, or a lawsuit, your position will always be on stronger ground if you can say, "I have always treated the medical staff at this institution with courtesy and respect."*

Be organized when you go to Sick Call and doctor's appointments. *Have a list of your issues, prioritized. That way you won't forget something and have to wait another three or four months (or more) until your next doctor's appointment.*

Always turn in prescription renewal requests five days in advance. *The pharmacy will have plenty of time to fill your prescription, and if you don't get your meds by the time your old 'script runs out, you can ask a C/O to call. When the pharmacy asks, "Why did you wait until the last minute to renew your meds?" you can say, "Actually, I submitted my request five days ago, and it's important I not miss any doses of this medication."*

Excerpted from "[5 Tips for Getting the Best Care You Can](#)," [11] by Brian Carmichael for Turn It Up! Staying Strong Inside. You can order paper copies of the latest issue, which includes Brian's full article, by writing to the address below.

Planning for Release

If you will leave prison or jail soon, it is important to make a plan for continuing your treatment when you return to the community. You can ask for a meeting with a social worker or discharge planner quite a while before you think you will be discharged. That person may help you to:

Get (back) on Medicaid or another insurance immediately after your discharge. You may be able to apply for this while you are still in prison or jail.

Get in touch with a community HIV organization. That organization can help you get the care you need and may be able to arrange for other services, as well.

Make the first HIV clinic appointment after you are discharged. It is important to have that appointment in place before you leave prison or jail to make sure you do not miss any medication doses.

Plan for housing and transportation to that first appointment

A good idea is to try to get the prison medical staff to mail your medical records to your new HIV care provider, once you have that first medical appointment set up. If they are not able to do that, you can see if they can give you a complete written summary of your medical care to share with your new provider on the outside. Even if the medical staff is not able to do either of these things, if you have been keeping a health journal as Brian Carmichael suggests above, you can bring that information to your first appointment.

You may also be able to get a supply of HIV medications to tide you over until that first appointment. You can ask the medical staff if you can get a 30-day supply and remind them if you don't hear back for a while. It may be easier to get the necessary amount of medication if you can show a fixed appointment and a plan for getting there.

Even with all the other things you likely have to take care of when you are being released, it is important to make your health a priority, and do your best to attend that first clinic appointment. Staying connected to care will not only help you protect your HIV health, but your clinic can help you to get (or point you to a community organization where you can get) some of these resources to keep you healthier and safer overall:

- Assistance with housing and/or food

- Help covering transportation costs

- Getting mental health treatment or counseling, if necessary

- Any other help they can provide, such as support groups or referrals to other services

Part of this section is adapted from ["Preparing for Your HIV Care on the Outside,"](#) [12] from a 2016 discharge planning manual, for Prison Health News. You can write to them for copies at the address below.

The Bottom Line

"We've heard all the phrases, like 'A closed mouth don't get fed,'" writes Fatima Malika Shabazz, a trans woman who has fought for another kind of health care — gender-affirming treatment and surgeries — while incarcerated. "Well, that is true. If you don't speak, no one will know you're there."

There are many ways to live a full, healthy life with HIV. Some steps to take to get there while in prison or jail include learning as much as possible about HIV, asking questions of those who have useful knowledge about living with HIV, knowing your rights, and being your own best advocate. Some of the currently and formerly incarcerated writers who have contributed their experiences, excerpted here, are examples of how people have "opened their mouths" to get the care they deserve.

Related Publications

These resources are accessible to people in prison or jail

Please note: *None of these organizations or publications offer legal help.*

To ask questions, or to order free single or bulk copies of the second issue of [Turn It Up! Staying Strong Inside](#) [13], write to:

The Sero Project

P.O. Box 1233

Milford, PA 18337

info@SeroProject.com

To order copies of [Prison Health News](#) [14], write to:

Prison Health News

4722 Baltimore Avenue

Philadelphia, PA 19143

prisonhealthnews@gmail.com [15]

[Center for Health Justice](#) [16]

Free HIV prevention & treatment hotline; takes collect calls from prison Mon.-Fri., 8 a.m.-3 p.m.

Prison Hotline: 213-229-0979 (collect)

You can reach the organization via mail at:

900 Avila St., #301

Los Angeles, CA 90012

213-229-0985

info@healthjustice.net [17]

To get copies of [Positively Aware](#) [18], an HIV treatment magazine (\$30 suggested donation; free to people living with HIV who cannot afford it), write to:

Positively Aware

Attn: Distribution Manager

5537 North Broadway Street

Chicago, IL 60640

Special thanks to Laura Whitehorn, prison activist, former political prisoner, editor-in-chief of both editions of Turn It Up!, and past senior editor of POZ Magazine, for her review of this fact sheet.

How Many People in U.S. Prisons Are Living With HIV?

Trent Straube

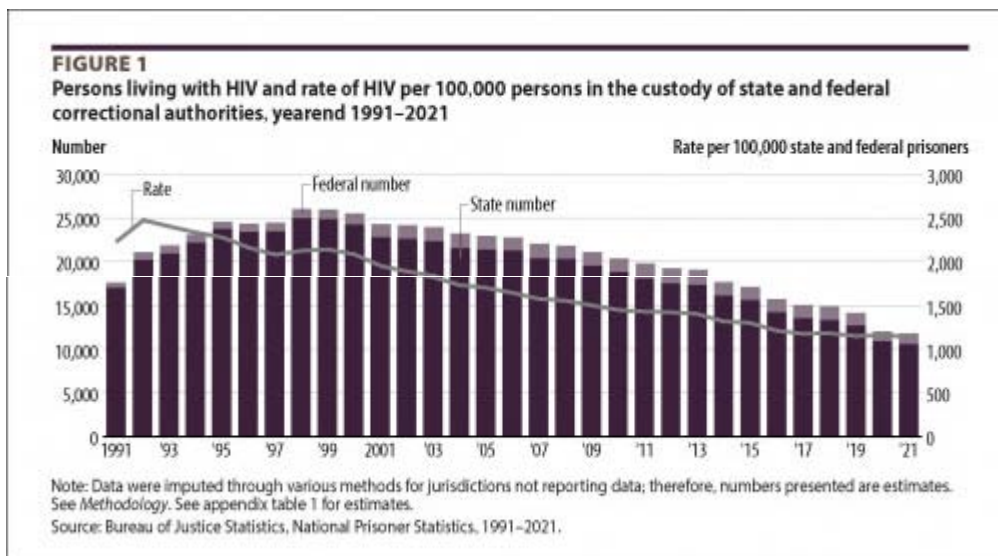


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The number of people with HIV in prisons has declined for 23 straight years, found a DOJ report that also looked at HIV testing in prisons.

March 28, 2023 • By [Trent Straube](#)

At the end of 2021, fewer people in state and federal [prisons](#) were living with [HIV](#) than the previous year. The decline, of about 2%, represents the 23rd straight year that the number has decreased, [according to a report released this month by the Bureau of Justice Statistics](#), part of the Department of Justice.



Data from “HIV in Prisons, 2021 – Statistical Tables” Courtesy of U.S. Department of Justice/Office of Justice Programs/Bureau of Justice Statistics

Titled "[HIV in Prisons, 2021](#)," the report also includes data on [HIV testing](#). Highlights from the report include:

At year-end 2021, an estimated 11,810 persons with HIV were in the custody of state and federal correctional authorities, down from 12,060 in 2020.

At year-end 2021, about 1.1% of persons—1.2% of males and 0.9% of females—in state and federal prison were living with HIV.

In 2021, of the 50 jurisdictions reporting their HIV testing practices, 16 jurisdictions (which accounted for 40% of prison admissions) conducted mandatory HIV testing during intake.

In 2021, a total of 18 jurisdictions offered HIV tests during routine medical exams of persons in custody, up from 11 in 2017.

A total of 1,032,130 people were in custody in state and federal correctional facilities in 2021, according to the report. Of those, 962,156 were male and 69,974 were female. The total number of people in custody declined each year since 2017, the earliest year included in the report, when the total number of people in custody was 1,279,259.

The 2021 decrease in prisoners living with HIV "followed the largest 1-year decline (down 15% between 2019 and 2020, largely as a result of the COVID-19 pandemic) since data collection began in 1991," wrote the study authors. They added, "The population of state and federal prisoners living with HIV has fallen for 23 straight years from its peak of 25,980 in 1998, largely due to a roughly 4% average annual decrease in state prisoners with HIV."

Statistics about HIV testing among people in state and federal prisons include the following:

HIV Testing During Intake Process

In 2021, of the 50 jurisdictions reporting their HIV testing practices, 16 jurisdictions (which accounted for 40% of prison admissions) conducted mandatory HIV testing during intake.

Twenty-four jurisdictions, which accounted for 44% of persons admitted to prison in 2021, offered opt-out HIV testing. With this practice, all those admitted were offered and given the test unless they declined it.

Jurisdictions that conducted mandatory or opt-out HIV testing during intake accounted for a larger percentage of all persons admitted in 2021 (84%) than in 2017 (73%).

In 2021, seven jurisdictions (accounting for 14% of persons admitted to prison) offered all prison admissions an HIV test that they had to opt-in to receive.

HIV Testing While in Custody

In 2021, all 50 reporting jurisdictions offered an HIV test under one or more circumstances to persons in the custody of state and federal correctional authorities.

HIV testing upon request—the most common testing practice for persons in custody—was reported by 47 jurisdictions in both 2017 and 2021.

Forty jurisdictions in 2017 and 39 in 2021 conducted HIV testing upon clinical indication.

In 2021, a total of 18 jurisdictions offered HIV tests during routine medical exams of persons in custody, up from 11 in 2017.

HIV Testing During Discharge Planning

HIV testing on request of the person in custody was the most commonly reported testing practice during the discharge process in 2017 (27 jurisdictions) and in 2021 (29 jurisdictions).

About half (48%) of persons released from prison in 2021 had been in jurisdictions that offered persons in custody HIV testing on request.

Jurisdictions that offered all those in custody an HIV test during their discharge planning accounted for about a quarter (23%) of releases in 2017 and about a fifth (20%) in 2021.

In 2021, jurisdictions that did not provide HIV testing upon discharge accounted for 9% of persons being released from prison.

The authors note that since the National Prison Statistics program began collecting HIV data, one to four jurisdictions per year have not reported the number of persons living with HIV in the custody of state and federal correctional authorities. To produce national and state totals of the number of persons living with HIV in prison, “data were imputed for nonreporting jurisdictions.”

The authors added that data on deaths are no longer included in the report and instead are reported on a quarterly basis to centralized state agencies.

RESEARCH

Open Access



Cost savings of a primary care program for individuals recently released from prison: a propensity-matched study

Tyler D. Harvey^{1*}, Susan H. Busch², Hsiu-Ju Lin^{3,4}, Jenerius A. Aminawung⁵, Lisa Puglisi^{1,5}, Shira Shavit⁶ and Emily A. Wang^{1,5}

Abstract

Background: Criminal justice system costs in the United States have exponentially increased over the last decades, and providing health care to individuals released from incarceration is costly. To better understand how to manage costs to state budgets for those who have been incarcerated, we aimed to assess state-level costs of an enhanced primary care program, Transitions Clinic Network (TCN), for chronically-ill and older individuals recently released from prison.

Methods: We linked administrative data from Connecticut Department of Correction, Medicaid, and Department of Mental Health and Addiction Services to identify a propensity matched comparison group and estimate costs of a primary care program serving chronically-ill and older individuals released from incarceration between 2013 and 2016. We matched 94 people released from incarceration who received care at a TCN program to 94 people released from incarceration who did not receive care at TCN program on numerous characteristics. People eligible for TCN program participation were released from incarceration within the prior 6 months and had a chronic health condition or were over the age of 50. We estimated 1) costs associated with the TCN program and 2) costs accrued by Medicaid and the criminal justice system. We evaluated associations between program participation and Medicaid and criminal justice system costs over a 12-month period using bivariate analyses with nonparametric bootstrapping method.

Results: The 12-month TCN program operating cost was estimated at \$54,394 (\$146 per participant per month). Average monthly Medicaid costs per participant were not statistically different between the TCN ($\$1737 \pm \3449) and comparison ($\$1356 \pm \2530) groups. Average monthly criminal justice system costs per participant were significantly lower among TCN group ($\$733 \pm \1130) compared with the matched group ($\$1276 \pm \1738 , $p < 0.05$). We estimate every dollar invested in the TCN program yielded a 12-month return of \$2.55 to the state.

Conclusions: Medicaid investments in an enhanced primary care program for individuals returning from incarceration are cost neutral and positively impact state budgets by reducing criminal justice system costs.

Keywords: Medicaid, Criminal justice system, Prison, Costs and cost analysis, Primary care

Background

The cost of the criminal justice system in the United States (US) continues to grow exponentially [1, 2]. The annual cost of operating public prisons and jails, parole, and probation is estimated at \$81 billion [3] and exceeds \$181 billion dollars when including direct operations,

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such as the cost of policing and the court system, as well as costs paid by families to support incarcerated family members [2]. Notably, health care is a large driver of correctional system costs. The nation's correctional system has increasingly housed a larger population of people with substance use disorders and co-morbid conditions, including HIV and hepatitis C, and mental health disorders, which are costly to the system [4, 5]. A systematic review found that among the top 20 countries in terms of prison population, only 10 reported prison healthcare expenditure data, and the US reported spending more of its correctional budget on health care than 8 of the other countries [6]. Delivering care within correctional facilities is complex—not only do incarcerated individuals have high medical needs, [7] but also receipt of care requires involvement of correctional staff for within facility and off-site transportation to receive health care services, which adds to cost.

Largely unaccounted for in these estimates are the costs incurred once people are released from incarceration back to the community, especially use of the community healthcare system. People with histories of incarceration have high rates of chronic medical, mental health (i.e., schizophrenia, post-traumatic stress disorder), and substance use disorders, which tend to be costly health conditions [5, 8]. Many of these health conditions are inadequately treated during incarceration [9]. Those recently released from incarceration generally experience worsening of chronic health conditions and have disproportionately high rates of emergency department (ED) use and hospitalizations [10, 11]. A 2014 study estimated the healthcare costs for people with past year criminal justice system involvement included an additional \$8.5 billion in hospital expenditures and \$5.2 billion in ED expenditures, which are largely borne by state Medicaid programs [11].

Given the outsized healthcare costs, state governments are looking to identify and scale programs that improve patient health and reduce the reliance on the criminal justice system for individuals with mental health and substance use disorders, while minimizing overall costs [12]. Further, there is bipartisan support to extend the Medicaid Reentry Act would provide Medicaid coverage for incarcerated individuals for 30 days prior to their release to improve while Medicaid currently does not pay for health services for the duration of individual's incarceration, coordination and continuity of care between correctional and community health systems prior to release through the Medicaid Reentry Act. Such coverage would have potentially large effects on health and health care costs as individuals reenter their communities [13]. However, few health system interventions targeting individuals following release from incarceration have been

studied, and most have not been subjected to economic analysis, which suggests it is unknown if such interventions provide potential cost savings when considering health system and correctional systems costs [14–19].

We present a cost analysis of the Transitions Clinic Network (TCN) program, the largest national network of primary care programs that addresses the health and social needs of people recently released from correctional systems [17, 20–24]. Previously, TCN programs have been shown to be associated with a reduced likelihood of an ED visit [20]. In other work, those who received TCN care were less likely to be reincarcerated for a parole or probation technical violation and had fewer reincarceration days following release from incarceration compared to a comparison group who did not receive TCN services. Similar, among those hospitalized in the 12-month period following release, TCN participation was associated with a reduced length of hospital stay and decreased rates of preventable hospitalizations [21].

This current work adds to our knowledge in its focus on the costs of TCN. We use data from a past quasi-experimental study of the TCN program in Connecticut to estimate health care and criminal justice costs associated with program participation and calculate a return on investment of the program [21]. Documenting the costs of TCN programs is critical in that organizations considering adopting this model may use this information in decision making and budgeting, which will advance programmatic and operational decisions of the network as a whole, but also whether and how investments are made in such programs for this population. This analysis provides important insights for state policymakers on whether investments in Medicaid to support enhanced primary care programs during the immediate period following release (or even prior to release, as could be facilitated by the Medicaid Reentry Act) offers financial benefits for the state. Lastly, it adds to a relatively limited evidence base of the cost of healthcare interventions for individuals leaving incarceration and meeting the needs of people experiencing marginalization [25–27].

Methods

Setting

The TCN is a national consortium of 45 primary care based programs that serve the health needs of individuals returning to the community from incarceration in 14 states and Puerto Rico [17]. Each program is based in an existing community health center and focuses on providing enhanced primary care to people released from correctional facilities who have a chronic health condition or who are older than 50 years of age. Participation and engagement with TCN are completely voluntary. Individuals are referred to a program by correctional systems

prior to release from incarceration, from community service providers, identified through outreach conducted by TCN community health workers, or self-referral. Interdisciplinary teams, consisting of primary care providers and formerly-incarcerated, specially-trained community health workers, work with patients to address a myriad of health conditions, including substance use disorders and mental health conditions, which may underpin past incarceration history. The team also attends to social determinants of health related to their return from incarceration, such as housing, food access, or employment, and link patients with community agencies. The community health workers use their personal experience of incarceration to educate the healthcare team about patients' challenges, facilitate patient-provider communication, and help patients navigate and build trust in the medical system. Further, the TCN community health workers and care teams build relationships with public defenders and probation and parole officers and can add medical context to situations which might otherwise lead to reincarceration, such as relapse to substance use or poorly controlled mental health.

Connecticut is a unique state to study costs of healthcare interventions targeting people just released from corrections. It is one of six states with a unified prison-jail system where jails and prisons are under the authority of the state, which provides the opportunity to ascertain costs related to both prison and jail incarceration. Connecticut's Medicaid program is one of four with a fee-for-service model, unlike most states which have transitioned to a managed care model [28–30]. The state's Medicaid program covers the costs of health services and visits received through a TCN program but does not cover additional TCN program costs, including the salary of the community health workers based in primary care clinics, supervision costs, nor equipment and transportation needs of the community health worker. Medicaid beneficiaries mostly receive substance use and mental health treatment and support services through health systems that are billed to Medicaid. A small fraction of such services is provided through the state's Department of Mental Health and Addiction Services, which includes state mental health hospitals and sober houses.

Study population

We used data from a previous study to assess the impact of the TCN program in New Haven, CT, on the state's Medicaid and criminal justice system costs [21]. These data were collected as part of a larger, multisite grant funded by the Center for Medicare & Medicaid Innovation during a time in which Medicaid was being expanded under the Affordable Care Act. As described previously, 94 TCN patients seen within 6 months of their prison

release who had at least one chronic health condition or were over the age of 50 years old were matched with a comparison group. To create a similar comparison group, we identified 2594 individuals who were released from prison to another medium-sized city in Connecticut that did not offer TCN care at the time of the study. Using linked administrative data from Connecticut Department of Correction, Connecticut Medicaid, and the Connecticut Department of Mental Health and Addiction Services and detailed participants' information, we estimated propensity scores and then utilized a greedy matching algorithm without replacement to create a 1:1 case-control sample [21]. We used 32 covariates to estimate the propensity scores based on all available information in the linked administrative data in the following domains: demographic variables, criminal justice system history, Department of Correction assessment scores, and medical and mental health history. After matching, participant demographics, severity of past criminal justice history, chronic medical conditions, mental health conditions, substance use treatment, and previous healthcare use were not different between the TCN and matched comparison groups (Supplement, Table 1). Additional information on our propensity score matching methodology is provided in the Supplement.

Conceptual framework

To guide our theoretical framework for how the TCN program may affect state Medicaid and criminal justice costs, we use the Gelberg-Anderson Behavioral Model for Vulnerable Populations to understand potential costs to the state among individuals released from correctional systems (Fig. 1) [31]. Within this framework, TCN programs act to modify the majority of enabling factors leading to state Medicaid and criminal justice costs, such as increasing access to housing stability through TCN CHWs helping patients with housing and other public social service (i.e., food) programs. One plausible way TCN engagement could impact costs is by anticipating health and social needs so that the patient does not end up needing costly acute care; however, treatment of some highly prevalent conditions, including hepatitis C, may introduce higher costs even in the ambulatory care setting. In fact, based on past studies, TCN programs shift health care use from acute care settings to primary care by increasing primary care engagement and decreasing preventable hospitalizations and reduce criminal justice contact through decreased parole and probation violations as well as less reincarceration experiences. TCN programs also make appropriate referrals to substance use and mental health treatment, as well as advocate on patients' behalf in interactions with the criminal justice system, especially courts, probation and parole when

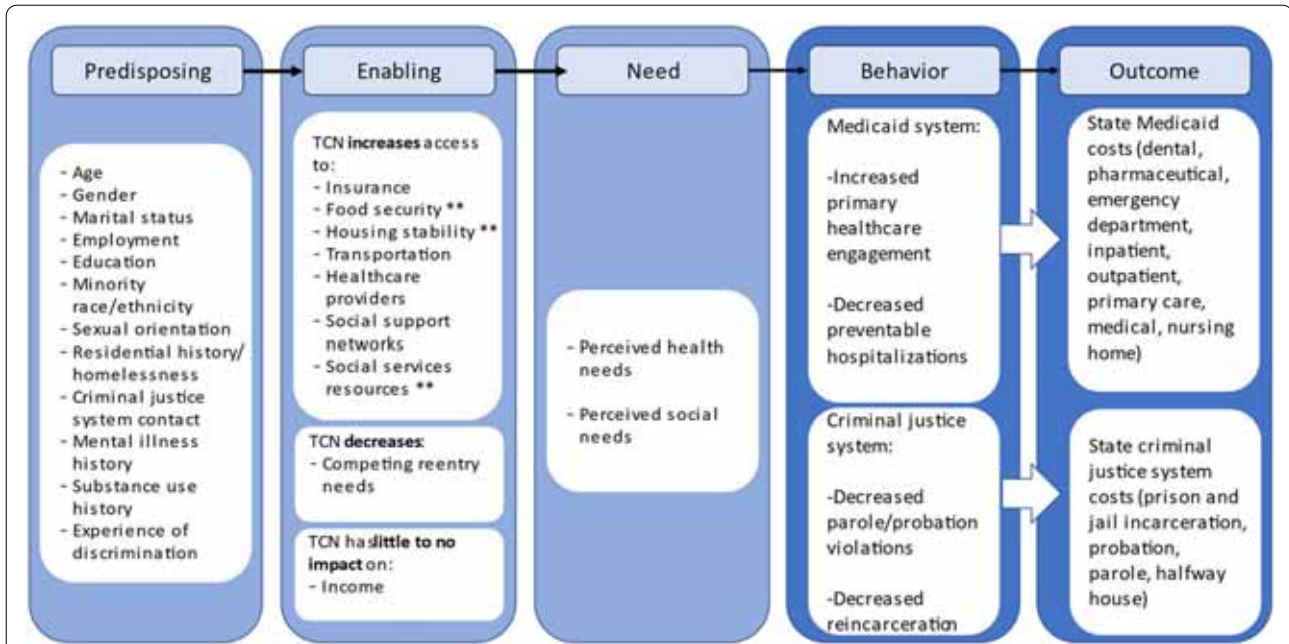


Fig. 1 Applying the Gelberg-Anderson Behavioral Model for Understanding Transitions Clinic Network Intervention's Potential Impact on State Medicaid and Criminal Justice Costs. ** Represent costs that were unmeasured in this study due to data limitations but predicted to have potential impacts on state budgets

appropriate. In these ways, TCN programs may avoid some costly health services, including acute care services but also gain access to other health services they would have not (i.e., hepatitis C treatment) and criminal justice system costs.

Measures

We assigned each study participant an index date: admission date for TCN program and date of release from the correctional system for the comparison group. We then calculated costs over a 12-month period following each participant's index date using data from the Connecticut Department of Correction and Medicaid. We used Medicaid claims data to calculate total 12-month follow-up period cost per participant. Costs were categorized using preset Medicaid categories including dental, pharmaceutical, ED, inpatient, outpatient (i.e., outpatient hospital), primary care (i.e., services and visits provided by primary care providers), medical (i.e., physician services and other medical costs, including radiology), nursing home, and crossover (i.e., claims for dual-eligible Medicaid/Medicare beneficiaries). TCN participants and the comparison group were covered by Medicaid for the duration of the study period, unless participants were re-incarcerated. Medicaid costs per participant for each arm was defined as total paid amount from Medicaid claims in the 12 months following the index date. We did not have access to Connecticut Department of Mental Health and

Addiction Services payment records and were unable to calculate the costs to this department or other state services including food stamps or housing in our analyses.

To measure costs to Connecticut's criminal justice system, we obtained facility-specific per diem costs of prison and jail incarceration, costs per day on probation from the Court Support Services Division, and costs per day in a halfway house or on parole from the Department of Correction (FY 2013–2016). The costs per diem while incarcerated ranged from \$119 to \$512 (based on facility), and the costs per diem on parole and probation were \$16 and \$12, respectively. Costs per diem incarcerated in jail or prison include health care costs, while costs per day on parole and probation do not, and these health care costs continued to be paid by Medicaid.

We calculated the TCN program cost by summing annual salary and fringe benefit support for a community health worker employed at a federally qualified health center, salary and fringe benefit support for supervision of the community health worker, equipment (cell phone, data plan, laptop computer, office space) and transportation costs. These costs are not covered by state Medicaid or the criminal justice system and were only incurred by the TCN program. We estimated the cost of the TCN program per participant by dividing total annual TCN costs by the approximate number of participants one community health worker would manage in each year during the study period (2013–2016). We assumed approximately 31

patients per 1 community health worker per year given that 94 patients were enrolled in the TCN program over a time frame of 3 years (2013–2016) and that this patient load is standard for CHWs [32].

To calculate the potential cost savings of the TCN program, we calculated the total 12-month Medicaid and criminal justice system costs for both the TCN and comparison groups. We then subtracted these total costs of the TCN group from the comparison total costs to represent the savings to the state realized by the TCN program. The return on investment was realized by dividing this savings by the total annual TCN program costs. Because Medicaid is a state-federal partnership with the federal government covering some of Medicaid costs, the return on investment we calculate is likely an underestimate of any return on investment to state. Importantly, Connecticut has the minimum Federal Medical Assistance Percentage at 50%, which is a percentage that varies across states based on the mean per capita resident income. All costs were adjusted to 2015 dollars using the Consumer Price Index.

Statistical analysis

We compared participants in each group following propensity score matching on sociodemographics, chronic conditions, and criminal justice and mental health history using t-tests and chi-square tests. To evaluate the associations between the TCN program with costs to the state Medicaid and criminal justice systems, we used t-tests to examine each group's per participant per month differences in costs. To avoid making unrealistic assumptions regarding the distribution of the costs for the underlying population, we performed nonparametric bootstrapping method that applied 1000 replicated random sampling with replacement for the TCN group and the propensity-matched comparison group [33]. For any analyses where assumptions were not met, we report the mean differences based on adjusted degree of freedom for equal variances not assumed. As a sensitivity analysis, we evaluated the associations between TCN participation and costs excluding individuals dually-eligible for Medicaid-Medicare to evaluate if this population skewed any associations. Last, as a post-hoc sensitivity analysis, given the difference in index dates (i.e., admission date for TCN program and date of release from the correctional system for the comparison group) in potentially exacerbating costs, we made an assumption that all TCN cases with probation started incurring probation costs on the day of their release from incarceration. We then added the time frame from release to TCN enrollment to the number of probation days for the TCN participant and compared costs to ensure findings were not skewed. We considered *p*-values of equal to or less than 0.05 statistically

significant. All statistical analyses were performed using SAS version 9.4 (SAS Institute Inc., Cary, NC). TCN program participants in New Haven provided informed consent for participation in this study and the linkage of their data to administrative databases. The institutional review boards of Yale University School of Medicine, Connecticut Department of Mental Health and Addiction Services, and the US Office of Human Research Protections approved this study. All research was conducted in accordance with the Declaration of Helsinki.

Results

The total 12-month cost of the TCN program in Connecticut was estimated to be \$54,027, which was driven largely by salary support and fringe for the community health worker and supervising social worker. The estimated cost per participant per month was \$146, assuming a standard patient load of approximately 31 patients per year for the community health worker (Table 1) [32]. The mean age of TCN participants was 42.6 (standard deviation:10.4 years). Eighty percent of TCN participants were male, and 54.3% were Black people. The majority of TCN participants had a chronic health condition; 20.2% had diabetes; 38.3% were diagnosed with opioid use disorder, and 53.2% with alcohol use disorder (Supplement, Table 1). The average amount of time between release from incarceration to TCN enrollment for our sample was 47.4 days (± 44.9 days), and the median was 28 (range 1–187) days.

The average monthly cost, inclusive of Medicaid and criminal justice costs as well as the TCN program costs that cannot be charged to Medicaid for the TCN group, was \$2656 (\pm \$3604) per participant for the TCN group, compared to the comparison group of \$2633 (\pm \$2788) per participant (Fig. 2). The average monthly Medicaid costs per participant was \$1737 in the TCN group compared to \$1356 for the comparison group. Within Medicaid costs, average monthly pharmaceutical costs ($\$528 \pm \2244 per participant in the TCN group versus $\$315 \pm \952 per participant in the comparison group), average monthly inpatient costs (TCN, $\$563 \pm \2152 per participant versus comparison, $\$294 \pm \1138 per participant), and average monthly primary care costs (TCN, $\$324 \pm \813 per participant versus comparison, $\$381 \pm \1422 per participant) were not statistically different between the two groups (Table 2).

The average monthly criminal justice system cost per participant in the TCN group was \$773 (\pm \$1130) and for the comparison group, \$1276 (\pm \$1738) ($p < 0.05$; Fig. 1). The average monthly incarceration costs were not statistically different between the two groups, with the TCN group at \$539 (\pm \$1064) per participant and the comparison group at \$791 (\pm \$1663) per participant (Table 3).

Table 1 Annual costs associated with a transitions clinic network program in connecticut

	Quantity	Unit Price	Annual Expenditure	Description
Human Resources				
Community Health Worker	1 full-time equivalent	\$18/h	\$38,441 ^{ab}	Salary support for a trained community health worker who has personally experienced incarceration.
Supervision (Social Worker)	0.1 full-time equivalent	\$25/h	\$10,552 ^b	A supervisor typically meets weekly with community health worker to prepare for clinical visits, works with community health worker during patient visits, and acts as a resource to address patient concerns.
Office Space and Equipment				
Office Space Rent	8 square feet/month	\$12/square foot	\$1178	Office space rental and supplies for community health worker, typically housed within a federally-qualified health center.
Desk and Chair	1 ^c	\$544	\$544	
Laptop Computer	1	\$1450	\$1450	
Docking Station	1	\$226	\$226	
Monitor	1	\$204	\$204	
Key Board, Mouse Pad	1	\$45	\$45	
Communications				
Cell Phone	1	\$362	\$362	A cell phone and plan allow community health workers to remain in close contact with patients, including scheduling primary care visits, addressing concerns, and assisting with access to other social services.
Data Plan	1	\$63/month	\$761	
Transportation	100 miles/month	\$0.5/month	\$631	Transportation cost include community health worker and patient travel, clinical visits, patient transportation, and accessing supplies for clinic and patients.
Total Annual Program Cost			\$54,394	
Annual Program Cost Per Participant^d			\$1755	

^a This salary aligns with the median reported wages for community health workers in Connecticut in 2015 [34]

^b Includes fringe

^c 1 indicates one time purchase necessary for supporting a newly hired community health worker

^d We assumed 31 patients per 1 community health worker per year given that 94 patients were enrolled in the Transitions Clinic Network program over a time frame of three years (2013–2016)

Average monthly probation costs were significantly lower among the TCN participants (\$33 vs \$112 per participant, $p < 0.001$). The average monthly parole costs (TCN group $\$58 \pm \178 per participant versus comparison $\$90 \pm \264 per participant) and halfway house costs (TCN group $\$142 \pm \470 per participant versus comparison $\$282 \pm \697 per participant) were not statistically different between the two groups (Table 3).

In total, the 12-month combined Medicaid and criminal justice costs for the entire TCN group was \$2,831,602, while the total 12-month costs for the comparison group was \$2,969,503. The TCN intervention thus resulted in a cost reduction of \$137,902, or a 5% reduction. This difference divided by the cost of the TCN program of \$54,394 yielded a return of \$2.55 per dollar invested in the TCN program.

Our sensitivity analysis showed that excluding dually-eligible Medicare-Medicaid participants

produced the same results with the criminal justice system costs remaining significantly lower among the TCN group ($\$753 \pm \1109 per TCN participant versus $\$1307 \pm \1757 per participant in comparison group) (Table 2, Supplement). Our additional sensitivity analysis showed that even after the inclusion of those additional probation costs to the TCN group, the TCN group still has significant lower probation than the comparison group (TCN: $\$40 \pm \96 per TCN participant per month versus $\$112 \pm \166 per participant in comparison group per month; $p < 0.001$) (Table 3, Supplement).

Discussion

Within a 12-month period, a TCN program yielded an annual return of \$2.55 for every dollar invested, when considering Medicaid and criminal justice system costs. This return on investment was primarily driven by differences in monthly criminal justice system costs

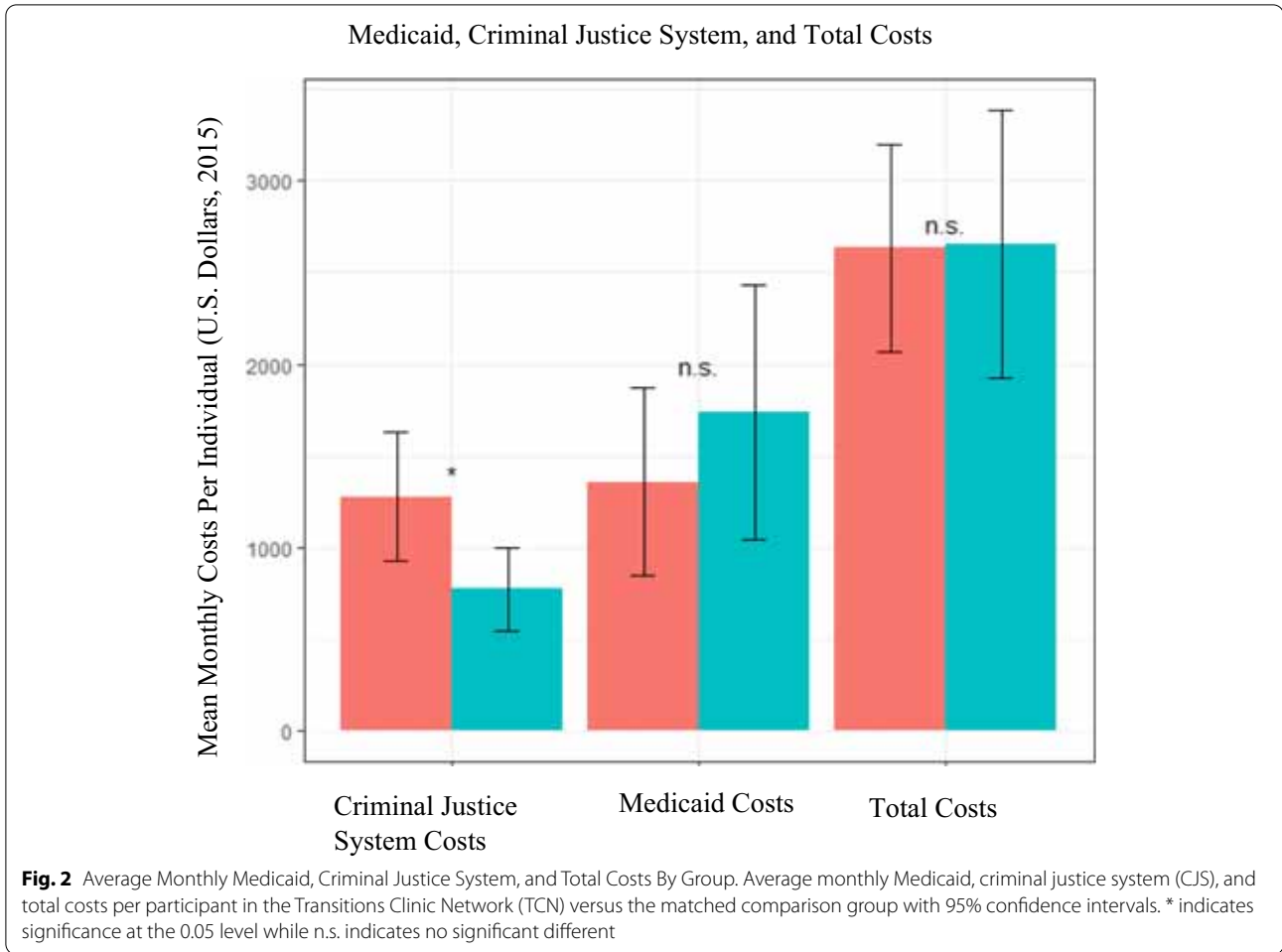


Table 2 Average monthly medicaid costs per individual in transitions clinic network and matched comparison groups^a

	Transitions Clinic Network (n = 94)		Comparison Group (n = 94)		Mean in Differences (95% confidence interval)
	Mean	Standard Deviation	Mean	Standard Deviation	
Dental	\$34	\$52	\$31	\$54	3 (-13,18)
Pharmaceutical	\$528	\$2243	\$315	\$952	213 (-215,726)
Emergency Department	\$51	\$104	\$44	\$71	6 (-17,35)
Inpatient	\$563	\$2152	\$294	\$1138	269 (-178,788)
Medical ^b	\$227	\$291	\$181	\$278	46(-30,126)
Nursing home	\$0	\$4	\$28	\$273	-28(-94,1)
Outpatient ^c	\$10	\$43	\$80	\$414	-70(-158,-3)
Primary care ^d	\$324	\$813	\$381	\$1422	-58(-394,245)
Crossover ^e	\$1	\$5	\$2	\$13	-1(-5,1)
Total Medicaid	\$1737	\$3449	\$1356	\$2530	381(-470,1259)

^a Significance is based on bootstrap results of 1000 samples. No significant differences were detected between the Transitions Clinic Network and matched comparison group

^b The medical category include physician services and other medical costs, including radiology

^c Outpatient refers to services received in outpatient hospital setting

^d Primary care includes services and visits provided by primary care providers

^e Crossover includes claims for dual-eligible Medicaid/Medicare beneficiaries

Table 3 Average monthly criminal justice system costs per individual in transitions clinic network and matched comparison groups

	Transitions Clinic Network (n = 94)		Comparison Group (n = 94)		Mean in Differences (95% confidence interval)	Significance ^a
	Mean	Standard Deviation	Mean	Standard Deviation		
Jail/Prison	\$ 539	\$1064	\$791	\$1663	− 252(−633,165)	–
Probation	\$34	\$83	\$112	\$166	−79(− 116, −42)	< 0.000
Halfway housing ^b	\$ 142	\$470	\$282	\$697	− 140(− 312,35)	–
Parole	\$58	\$178	\$90	\$264	−32(−99,32)	–
Total Criminal Justice System Costs	\$773	\$1130	\$1276	\$1738	−503 (− 911,-96)	< 0.05

^a Significance is based on bootstrap results of 1000 samples

^b Halfway housing refers to various residential facilities in which individuals are released from incarceration to live in prior to reentering their communities

per participant, not Medicaid costs, between the two groups, as TCN participants had reduced probation costs. This result confirms our previous work showing that participation in TCN lowered the odds of reincarceration due to a parole or probation technical violation and confirms there are cost benefits to such an effect. Interestingly, we did not find significant differences in Medicaid costs between the group, despite our previous findings that TCN participation shortens hospital stays and lowers preventable hospitalizations for individuals hospitalized [20]. This could be a function of our sample size.

While our analysis does not establish the mechanism by which TCN lowers probation costs, there are plausible mechanisms to explain the association found. First, TCN patients may better be able to address their health and social needs, allowing them to meet probation requirements, which is consistent with other intervention work focused on this population [35]. Another possible reason is that TCN program providers and community health workers communicate regularly (when given permission by their patients) with criminal justice entities, especially parole and probation officers. These relationships may be important in identifying alternatives to re-incarceration for technical violations, including enrolling patients in substance use treatment when individuals have relapsed to drug use. Such a potential mechanism emphasizes the importance of the TCN intervention being embedded within the healthcare system to have the expertise and resources to fully understand a person's health context.

To our knowledge, this is the first economic analysis of a US health system-based community health worker intervention for adults leaving the correctional system. Our analysis provides a more thorough estimate of the return on investment compared with estimates derived from a single source (either Medicaid or the criminal justice system) or pre-post trial designs, and further

advances the evidence on how to best meet the needs of individuals belonging to a highly marginalized population. To be sure, other costs to the state were unmeasured, including housing, employment, and food access programs, and reflect future work that can better delineate how health system investments may affect state costs for this population. These data add to the limited evidence examining costs of healthcare interventions for individuals released from incarceration on criminal justice expenditures [25–27]. In contrast to our findings, a study of 1325 recently released individuals in Australia found that individuals randomized to a low-intensity case management program (the 'Passports Study') had higher health, criminal justice, and intervention costs, with an average increase of \$1790 AUD per participant over 2 years compared to a control group [36]. The key difference in our study and the 'Passports Study' is that the TCN intervention has been found to have no impact on preventable ED visits in Connecticut, while the 'Passports Study' led to more healthcare utilization, including ED visits, which are costly [36, 37].

Policy makers and criminal justice and health care organizations interested in making similar investments utilizing Medicaid dollars to impact criminal justice expenditures should interpret this study in the context of four key points. First, the financial value of a TCN program depends on the baseline costs among the targeted patient pool. Given that individuals leaving incarceration generally have high health needs, there is a limited need to target the interventions to contain a high-risk patient pool. The program is offered to those in need of primary care with a chronic health condition and those over 50 years of age, which is a broad and medically complex group. Even when participation includes a broader population, and not focused on a specific disease category or a predetermined "high cost group," the community health worker intervention returned \$2.55 for every dollar invested.

Second, return on investment relies critically on who is making the investment and who is receiving the return. We have presented an economic analysis from the perspective of a state, especially as it is responsible for both Medicaid and the correctional system. It is especially important to note that our findings may not generalize to other states given the unified prison-jail system and Medicaid fee-for-service model in Connecticut, nor does it account for the costs of Medicaid to the federal government. We found that the TCN program was cost neutral for Medicaid (i.e., was not significantly different than care as usual), but we would predict that such findings may be different in systems with Medicaid managed care which may incentivize prevention and value-based care.

Third, this study suggests that TCN programs are beneficial, even from a narrow financial perspective. That said, the financial return on investment underestimates the true societal return because the benefits of the program related to improvements in health, remaining in the community, employment and labor market outcomes, or even spillover effects to families and communities are not assessed. For example, some interventions such as recommended cancer screening or identifying patients with chronic conditions like hypertension through community outreach may not affect healthcare costs over a 12-month time horizon, but may lead to valuable improvements in health (and lower costs, over time) [38].

Last, returns that accrue to the state from investing in TCN programs are important, especially as states have long desired to control criminal justice system and health care costs and have worked to reduce incarcerated populations before and during the COVID-19 pandemic. Before COVID-19, the Pew Center on the States surveyed 41 states and estimated that if these states reduced their recidivism rates by 10%, 635 million dollars would be saved in 1 year [39]. In the context of COVID-19, as states across the US release people from correctional facilities in order to mitigate virus transmission, there is a dire need to ensure those individuals access high quality, effective primary care and do not return to the correctional system, which would lower both healthcare and criminal justice system costs [12]. Criminal justice reforms and decarceration efforts that address the unique health needs of this population may both address the health-harming effects of incarceration, but also minimize additional costs to states.

Limitations

Our findings may not generalize to other states given the Medicaid fee-for-service model in Connecticut. The relatively short 12-month, follow-up period may underestimate the health-related costs associated with medical treatment if its effects of such treatment

persist over the longer run, like hepatitis C treatment. Alternatively, the additional benefits accrued beyond the 12-month window might be offset by additional costs if patients require further medical treatment. Next, we chose an index date of TCN enrollment for the TCN group and release from incarceration for the comparison group, which may introduce bias if participants in the TCN group were likely to engage in costlier care prior to enrollment in the TCN program and following their release from incarceration. That said, we found that the mean number of days for TCN participants in this sample to enroll in the program was approximately 48 days following release from incarceration, and that the overwhelming majority of individuals in the comparison group (85%) did not have any ED visits, hospitalizations, or reincarceration experiences during the first 48 days following their release from incarceration—suggesting this concern did not likely influence our findings [21]. Thus, given the index date for TCN group was admission to the program and the comparison group was release from incarceration, it is still plausible that the difference in index date accounts for a difference in the observed costs though our sensitivity analysis suggests that this is unlikely. While we selected a comparison group from a similar urban area as New Haven, regional differences, such as differences in availability of reentry programs or judges' behaviors, between the two cities may play a role in our findings. While case law of Connecticut applies to cities across the state uniformly, probation practices might be different in New Haven and the comparison community, leading to different rates of probation violations. We used propensity score matching to create a one-to-one comparison of individuals in the TCN and comparison groups, and while we were able to appropriately balance the groups on numerous sociodemographic and health characteristics, it should be noted that propensity score matching has limitations, including an inability to measure and account for unobservable covariates [40, 41]. Because TCN engagement was completely voluntary, individuals who participated may have a different level of health-seeking behaviors than other individuals leaving incarceration and that difference is not captured by the propensity match. A randomized trial would be best for establishing the relationship between TCN participation and reduced probation costs, particularly randomization at the individual-level, rather than the site, in order to better understand whether effects remain across counties. Our sample size was limited to 94 TCN patients, which impacted our confidence intervals and limits our ability for conclusions that this sample is generalizable to the formerly incarcerated population with chronic health conditions.

We were unable to access the cost of services provided through the Department of Mental Health and Addiction Services, which could be potentially expensive, and our results should be interpreted in light of this limitation given that participants in both the TCN and comparison groups could have utilized such services. Our data is from 2013 to 2017, and costs may have shifted since then, but we adjusted our data for inflation costs to 2015.

Policy implications

Our study suggests that investment in enhanced primary care may be advantageous to state budgets as they attempt to manage the rising costs of correctional systems, while providing evidence-based care to individuals released from incarceration [17, 20, 21]. Policies that provide funding to support community health centers in implementing a TCN program through hiring formerly incarcerated community health workers into healthcare teams could be beneficial by decreasing criminal justice costs and improving health outcomes among individuals released from incarceration. Extending Medicaid funding to compensate for the community health worker's time and promoting enhanced care management programs that target individuals recently released from incarceration could incentivize adaptation of TCN programs in community health centers. Lastly, this study has demonstrated the benefit of studying the costs of primary care-based programs beyond the health care system. Our findings were dependent on our ability to link Medicaid claims to criminal justice system costs, which is typically unfeasible. The inability to link such data may lead to biased estimates of interventions for individuals recently released from incarceration. States should invest in data linkage systems that facilitate cost analysis across even more systems (i.e. federal criminal justice system, social service agencies) to allow for quantifying benefits of intervention programs from a larger societal perspective. This would enable studying the collateral benefits (i.e. employment, food access) and changes to both individual and family well-being.

Future research

Future studies exploring the long-term cost impacts of primary care-based programs targeted for people released from corrections are critical to health system and criminal justice system reforms. More attention should be given to investigating the mechanisms by which programs impact costs, such as how TCN participation reduced probation costs in this study. Future analyses should consider benefits specific to certain health

conditions and treatment options, including but not limited to substance use disorder treatment or preventative treatment such as cancer screening. These studies will provide evidence for how to mitigate the high costs of the criminal justice system and health systems.

Conclusion

We find that state investment in TCN programs, an enhanced primary care for individuals recently released from correctional systems, may reduce criminal justice costs, especially through decreased interactions with probation. State policies that fund community health centers to implement such a program for individuals released from incarceration could facilitate cost savings.

Abbreviations

ED: Emergency department; FY: Fiscal year; HIV: Human immunodeficiency virus; TCN: Transitions Clinic Network; US: United States.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12913-022-07985-5>.

Additional file 1.

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Authors' contributions

TDH, JAA, HL, SS, SHB, LP, and EAW conceived and structured this research project. JAA and HL were responsible for the acquisition of the data. HL performed the data analyses. TDH, SHB, HL, and EAW drafted the paper. TDH, JAA, HL, SS, SHB, LP, and EAW interpreted the data, revised the paper for important intellectual content, and reviewed and approved the submitted version.

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Availability of data and materials

Original de-identified data can be requested after permissions are obtained from the Connecticut Department of Correction, the Department of Mental Health and Addiction Services, and the Department of Public Health.

Declarations

Ethics approval and consent to participate

TCN program participants in New Haven provided informed consent for participation in this study and the linkage of their data to administrative databases. The institutional review boards of Yale University School of Medicine, Connecticut Department of Mental Health and Addiction Services, and the US Office for Human Research Protections approved this study. All research was conducted in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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RESEARCH ARTICLE

HIV testing in jails: Comparing strategies to maximize engagement in HIV treatment and prevention

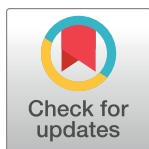
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Data Availability Statement: Please note that there are restrictions to sharing a de-identified data set because the data are owned by a third-party organization, the DC Department of Corrections. The de-identified data is also restricted because the research subjects are prisoners, which are a known vulnerable population. Please contact Reena Chakraborty for access to the de-identified data set: reena.chakraborty@dc.gov or 202.671.2078.

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Abstract

Despite 15,000 people enter US jails yearly with undiagnosed HIV infection, routine HIV testing is not standard. Maximizing the yield and speed of HIV testing in short-term detention facilities could promote rapid entry or re-entry of people living with HIV (PLWH) into care. The goal of this study was to evaluate the impact of third generation, rapid point-of-care (rPOC) vs. fourth generation, laboratory-based antigen/antibody (LBAg/Ab) testing on the HIV care cascade in a large urban jail during a planned transition. We used aggregate historical data to compare rPOC testing and LBAg/Ab testing in the D.C. Department of Corrections. We examined two time periods, January to August 2019 when rPOC testing was performed, and October 2019 to January 2020 after LBAg/Ab testing began. We calculated monthly rates of HIV tests performed, HIV test results received, HIV test results received among those tested, antiretroviral therapy (ART) initiation, and proportion of PLWH receiving discharge planning prior to release. We then conducted an interrupted time series analysis to assess the differences between testing periods. There were 14,237 entrants during the first time period and 7,569 entrants during the second. Transitioning from rPOC to LBAg/Ab testing increased the rate of test uptake by 38.5% (95% CI: 14.0, 68.3), decreased the rate of test results received among those tested by 13.1% (95% CI: -14.0, -12.1), and increased the combined rate of HIV tests performed and results received by 20.4% (95% CI: 1.5, 42.8). Although the rate of HIV testing was greater under LBAg/Ab, PLWH received results immediately through rPOC testing, which is critically important in short-stay environments. Increasing rPOC uptake would increase its value and combined testing may maximize the detection of HIV and receipt of results among persons passing through jails.

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Introduction

Correctional settings, comprising in the United States (U.S.) prisons and jails, had a prevalence of 1.3% of people living with HIV (PLWH) in December 2015 [1]. With 10.9 million correctional admissions over the year, representing 7.8 million individuals since jail entrants enter on average 1.4 times annually, this translates to likely 100,000 PLWH incarcerated in the U.S. in 2015 [2, 3]. The correctional HIV epidemic encompasses a diverse group of individuals with varying levels of disease awareness, ability to manage their disease due to active substance use disorders, and care engagement [3].

Screening upon incarceration is warranted as it improves the positioning of PLWH in the HIV care continuum [4, 5]. Those knowledgeable about their HIV status and on antiretroviral therapy (ART) risk interruptions unless jail health care staff are alerted to the diagnosis. It provides the opportunity to initiate treatment for those known to be positive, but not linked to care, and identify those yet to be diagnosed. The latter group is of particular interest as a meta-analysis indicated that up to 15% of individuals entering corrections have undiagnosed HIV infections [6]. A survey of imprisoned people, conducted less than a year after prison officials reported 1.3% of persons were infected, found that 1.1% (or 15% less than 1.3%) reported they were PLWH [1, 7]. We estimate that 15,000 PLWH enter U.S. correctional facilities each year unaware of their HIV status.

The division of the U.S. correctional system into prisons and jails has implications for optimal screening strategies. In prisons, sentences are typically greater than one year whereas jails are shorter-term facilities with lengths of stay that can be unpredictable, ranging from just several hours to months depending on whether a resident is awaiting trial for a misdemeanor or felony, or has received a short sentence [3, 8]. Jails are the most common entry point into the correctional system and admissions to U.S. jails number approximately eighteen times the entrances in state and federal prisons [1, 3, 9–11]. About 95% of persons who leave the carceral environment have only been in jails [3]. Due to the high volume of PLWH cycling through these facilities, engagement with jails is essential to ending the HIV epidemic in the U.S.

Although testing for HIV in jails can be a critical step in improving health outcomes for PLWH and reducing the risk of transmission after release, routine testing is not the norm in U.S. jails [9, 10]. The recommendations of the Centers for Disease Control and Prevention (CDC) have focused on universal, opt-out testing as a diagnostic strategy for PLWH in correctional facilities. The CDC endorses rapid point-of-care testing (rPOC) in the jail setting, which has been found to be feasible and acceptable, followed by confirmatory laboratory-based testing [11–13]. Conventional laboratory-based HIV testing has higher specificity, and higher sensitivity than rPOC. Due to its higher sensitivity, especially in early disease, fourth generation laboratory-based antigen/antibody (LBAg/Ab) testing may identify patients with acute HIV infection, when rPOC would be falsely negative. Yet, because both rPOC and LBAg/Ab can yield false positive results if used alone, an additional HIV RNA viral load assay is recommended, which adds more time to receive final diagnostic results [14]. Laboratory testing alone may be acceptable for prisons, when turnaround time is not an issue [15]. However, when detained populations turnover swiftly in jails, rPOC testing may lead to the highest proportion of entrants, including undiagnosed PLWH, accessing test results before release [8, 16]. Because of short lengths of stay in jails, rPOC HIV testing potentially offer the greatest chance to identify in a timely manner cases previously undiagnosed, who may subsequently be linked to care.

In September 2019, the Washington, D.C. Department of Health (DOH) recommended a transition from rPOC to LBAg/Ab testing, which would be done in conjunction with a battery of other blood tests drawn at intake, as a strategy to find more cases of acute HIV. Unity

Healthcare (UHC), the largest network of Federally Qualified Health Centers in D.C., has contracted to provide healthcare for the D.C. DOC since 2006. The Washington D.C. Department of Corrections (DOC), DOH, and UHC agreed to utilize this transition as a critical opportunity to study optimal HIV testing strategies in the jail setting. The goal of this study was to compare the rates of HIV tests performed, HIV test results received, ART initiated, and the ratio of PLWH receiving discharge planning prior to release under each testing strategy.

Materials and methods

Setting

The D.C. correctional system consists of single large urban jail, which ranks among the top 50 largest jails in the U.S. [17]. Prior to the COVID-19 pandemic, the D.C. DOC processed 6,000 to 8,000 intakes per year and housed an average daily population of approximately 1,800 individuals. The demographic distribution of the patient population is over 90% African American, 5% Latinx, and 3% White. Nearly all entrants live at or below the 200% poverty level. Approximately 92% of intakes are persons born male, with a male median age of 33 years and a female median age of 37 years. About 55% of patients have a history of substance abuse, mental illness, or both. The median length of stay in the D.C. DOC is 24 days for men and 13 days for women; 36% are released within 8 days of admission [18].

The HIV prevalence in the jail ranges from 1–2%, with an average estimated population of approximately 30 PLWH at any given time before the COVID-19 pandemic. In 2006, the D.C. DOC began routinely offering opt-out rPOC testing at entry. Initially, UHC made 1–3 novel HIV diagnoses in the jail each month through the rPOC HIV testing strategy, but in recent years these numbers began to fall (Personal communication—Ms. T. Outlaw, October 4, 2021).

At intake, UHC notifies entrants that they routinely test nearly all patients for HIV, at which time persons are able to decline or defer testing. Entrants who are known to be living with HIV, either through self-identification or a previous stay, are usually not re-offered HIV testing. Those tested within the last 6 months at the D.C. DOC are also not routinely retested.

Immediately before HIV testing transitioned to the laboratory-based strategy, medical assistants performed rPOC using a 1-minute INSTI HIV-1/HIV-2 Antibody Test (bioLytical Laboratories, Vancouver BC). Under LBAg/Ab, the fourth generation Architect HIV Ag/Ab Combo assay (Abbott Laboratories, Abbott Park, IL) was added to a larger infectious disease screening panel. Routinely at the jail, all laboratory-based test results are disseminated to patients based on their disease status. Individuals whose laboratory-based HIV tests were negative receive a letter in jail indicating that their intake laboratory results were normal. HIV testing is not mentioned specifically in this letter for confidentiality purposes. Individuals whose laboratory-based HIV tests were positive are notified of their results through a clinical, urgent care, or sick call visit scheduled within 24 hours of the laboratory result processing. A comprehensive clinical visit is then scheduled within two weeks for those who tested HIV positive at intake. For those already released, a letter is sent to the patient's address on file, if one exists.

Analysis

In this retrospective cohort study, we used aggregate historical data provided by the D.C. DOC and UHC to examine two study periods: January 2019 to August 2019 and October 2019 to January 2020, before the COVID-19 epidemic prompted decarceration. The D.C. DOC performed third generation, rPOC testing during the first period and fourth generation, LBAg/Ab testing in the second period. Because the transition in testing occurred part-way through September 2019, we designated this month as a washout period. The aggregate data from each time period included the total numbers and monthly averages as applicable for the following

variables: jail admissions; HIV tests performed; HIV positive test results; entrants receiving positive and negative HIV test results; PLWH who received ART while in jail; discharge planning visits received by PLWH prior to release; PLWH released. We then calculated the monthly rate of tests performed, result received, tests performed and results received combined, ART initiation, and ratio of discharge planning visits to PLWH released per month across each time period. The total number of entrants receiving HIV test results was assumed to be 100% in the first time period since rPOC results for the test used were available in one minute from the point where care was delivered; however, we also conducted a sensitivity analysis by comparing just the receipt of results through the total number of letters generated for tests performed at intake in both the first and second time periods.

We compared the averages for each time period using two independent sample t-tests with a 5% critical level of significance. We then conducted an interrupted time series (ITS) analysis to assess the significance of the difference between each testing phase using negative binomial models. We calculated IRR (incidence rate ratio), which was expressed as a rate change in percentage between the two testing phases. Additionally, we assessed possible time trends within each testing period.

The Emory University Institutional Review Board approved our study. Data provided by the DOC were de-identified and presented as aggregate counts of study participants per month. Participants were not able to opt out of the study given the retrospective cohort design; therefore, a waiver of consent was obtained. Participants were, however, able to opt out of routine rPOC and LBAg/Ab testing at intake, which would lead to their data not being included in the study data set. There was no benefit or treatment associated with the data transfer for those whose data are included in the study.

Results

The analysis included 6,075 entrants (67.4% of our study population) during the first time period and 2,941 entrants (32.6% of our study population) during the second (Table 1). Among the jail entrants during the first time period, 4,012 rPOC tests were performed (an average of 501.5 rPOC tests per month) (Table 1). All entrants (100%) were assumed to have received their rPOC HIV test results due to the nature of the rapid testing strategy; 410 (an average of 51.3 persons per month) PLWH were treated for HIV infection at the beginning of each month (Table 1). Additionally, 284 discharge planning visits (an average of 35.5 visits per month) were conducted with PLWH prior to release (Table 1). After the transition to LBAg/Ab testing, the D.C. DOC reported that 2,601 HIV tests were performed (an average of 650.3

Table 1. Descriptive statistics of HIV care and treatment outcomes in the D.C. DOC per month.

Variable	Rapid Point-of-Care Period (January 2019-August 2019)	Laboratory-Based Antigen/Antibody Period (October 2019-January 2020)
	Mean [Standard Deviation]	
Total Jail Entrants per Month	759.4 [22.2]	735.3 [10.8]
HIV Tests Performed per Month	548.4 [44.4]	651.0 [22.3]
Total Results Received per Month	518.9 [57.7]	570.5 [21.4]
Number of PLWH Receiving ARV on First of the Month	51.3 [5.8]	62.8 [4.8]
PLWH Released per Month	20.5 [3.7]	18.8 [3.6]
PLWH Received Discharge Planning Visit	35.5 [5.7]	29.8 [5.0]

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Table 2. Level and trend changes in predicted rates^a in HIV care and treatment.

	Rapid Point-of-Care Period (January 2019–August 2019)		Laboratory-Based Antigen/Antibody Period (October 2019–January 2020)	
	Baseline ^b (%) (95% CI; p-value)	Pre-Transition Trend ^c (Δ%) (95% CI)	Transition Change ^d (%) (95% CI)	Post-Transition Trend ^e (Δ%) (95% CI)
Rate of HIV Tests Performed	64.7 (55.8, 75.0)	-0.4 (-2.8, 2.1)	38.5 (14.0, 68.3)	-0.9 (-7.3, 6.1)
Rate of HIV Test Results Received	100 (99.2, 100.8)	0.0 (-0.1, 0.1)	-13.1 (-14.0, -12.1)	0.6 (0.3, 1.0)
Rate of HIV Tests Performed and Results Received	64.7 (56.8, 73.6)	-0.4 (-2.5, 1.8)	20.4 (1.5, 42.8)	-0.2 (-6.0, 5.9)
Rate of PLWH Treated with ART	83.2 (70.3, 98.1)	-1.1 (-3.8, 1.6)	12.8 (-9.1, 39.9)	-1.9 (-9.0, 5.7)
Ratio of Discharge Planning Visits per PLWH Released	1.6 (1.1, 2.7)	-1.8 (-7.8, 7.2)	11.4 (-45.9, 90.1)	-5.6 (-23.2, 22.6)

^a Probabilities modelled using segmented linear regression models

^b Refers to the rate in August 2019, the end of the first testing phase

^c Refers to the modelled change (%) per month during the pre-transition period

^d Refers to the modelled change (%) immediately after the transition to LBAg/Ab testing compared to immediately before the transition

^e Refers to the modelled change (%) per month during the post-transition period

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LBAg/Ab tests per month) among the 2,941 jail entrants (Table 1). Approximately 2,282 entrants total received their HIV results, whether positive or negative (Table 1). Across this time period, 251 (an average of 62.8 persons per month) PLWH were treated for HIV infection at the beginning of each month (Table 1). Lastly, a total of 119 discharge planning visits (an average of 29.8 visits per month) were conducted with PLWH prior to release (Table 1).

The interrupted times series analysis demonstrated that, among those engaged in rPOC testing, the rate of performing an HIV test was 64.7% in August 2019 (95% CI: 55.8, 75.0); there was no change observed in the testing rate across the the rPOC testing period (Table 2). After the transition to LBAg/Ab testing, the rate of performing an HIV test significantly increased by 38.5 (95% CI: 14.0, 68.3) to 89.6% (Baseline* (1+Transition Change)); the testing rate did not change across the LBAg/Ab testing period (Fig 1, Table 2). Regarding the receipt of test results, the predicted probability of receiving rPOC results was 100.0%; this baseline rate was assumed for the rPOC testing period. After the transition to LBAg/Ab testing, the predicted probability of receiving LBAg/Ab results started at 86.9% (95% CI: -14.0, -12.1) and then increased significantly by 0.6% from the new baseline in each following month (95% CI: 0.3, 1.0) (Fig 1, Table 2). This difference between testing periods was statistically significant in both the analysis where we assumed that 100% received rPOC test results and the sensitivity analysis of relying only on notifications generated for tests performed at intake (sensitivity analysis not shown). The rate of both performing an HIV test and receiving an HIV test result was 64.7% in August 2019 (95% CI: 56.8, 73.6) (Table 2). There was no significant change in the combined rate across the the rPOC testing period. The rate of performing an HIV test and receiving an HIV test result significantly increased to 77.9% (95% CI: 1.5, 42.8) after the transition to LBAg/Ab testing (Fig 1, Table 2); the testing rate did not change across the LBAg/Ab testing period.

Regarding the receipt of ART, the rate of being a PLWH treated with ART on the first of the month was 83.2% (95% CI: 70.3, 98.1) in August 2019. After the transition to LBAg/Ab testing, the rate of being a PLWH treated with ART started at 93.8% (95% CI: -9.1, 39.9); however, the shift in the ART initiation rate across testing periods was not significant (Table 2). The rate of initiating ART did not change across the LBAg/Ab testing period. At baseline, the ratio of discharge planning visits per PLWH released was 1.6 (95% CI: 1.1, 2.7); this did not

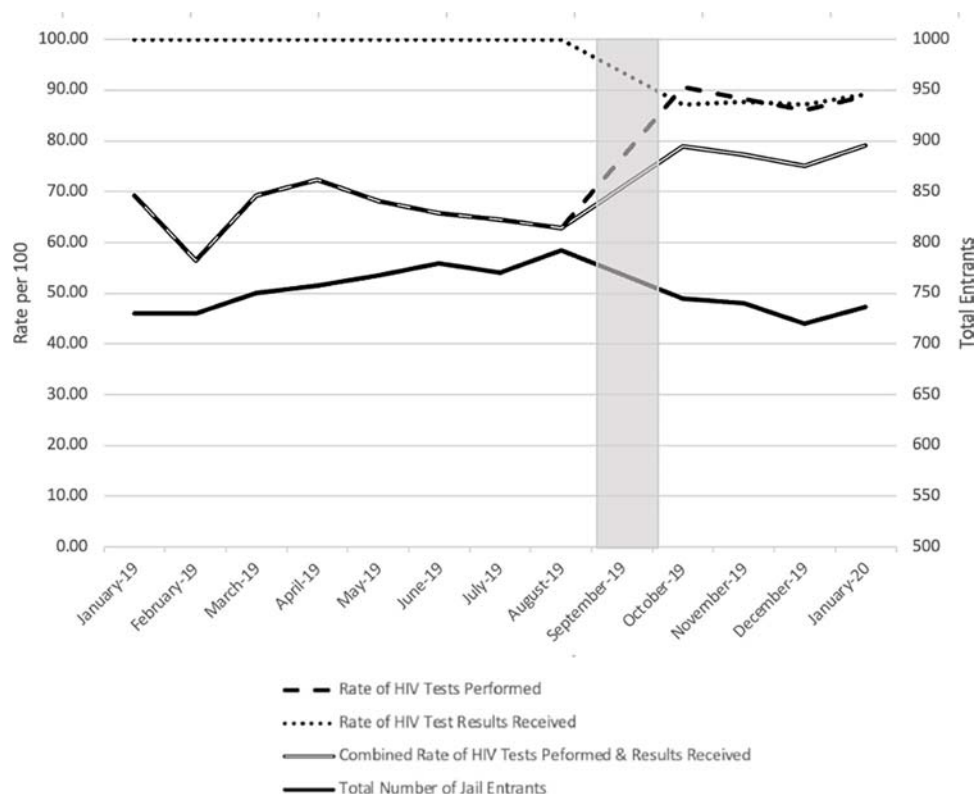


Fig 1. Total number of entrants and rate of HIV testing and results received, Washington D.C. Department of Corrections jail, 2019–2020.

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significantly change over the rPOC testing period (Table 2). After the transition to LBAg/Ab testing, the ratio of discharge planning visits per PLWH released was 1.8 (95% CI: 1.1, 2.7); however, this increase between testing periods was not statistically significant (Table 2). Additionally, the discharge planning ratio did not significantly change across the LBAg/Ab testing period.

Discussion

This is the first study to describe changes in HIV testing parameters and elements of the HIV care cascade associated with a transition of routine HIV testing strategies at entry from third generation, rPOC testing to fourth generation, LBAg/Ab testing in a correctional setting. Analyzing HIV care and treatment outcomes in the D.C. DOC between January 2019 and January 2020, we determined that the transition from rPOC to LBAg/Ab testing contributed to a significant increase in the rate of HIV testing, a significant decrease in the rate of HIV results received, and a significant increase in the combined rate of HIV tests performed and HIV test results received. Additionally, there were upstream increases in the rate of PLWH receiving ART and the number of PLWH receiving discharge planning between time periods. We also determined that there was a statistically significant positive trend in the receipt of HIV results during the LBAg/Ab testing period, with the rate increasing by 0.6% each month following the transition.

The results of this study are important for several reasons. While HIV prevalence in the U. S. criminal justice system is up to ten times that of the general adult population, HIV testing

remains inadequate in many correctional settings. Improving the testing strategy in correctional settings could begin or sustain linking PLWH to care [19–21]. This study contributes to a growing literature that the type of test performed is important, particularly in settings like jails where the median length of stay is 2–7 days [8]. Rapid POC testing requires only minutes for healthcare staff to perform and inform patients of results. We hypothesized that rPOC testing would result in more HIV tests performed; however, the ease of adding HIV testing to a panel of other laboratory tests routinely drawn may have led to an increase in HIV tests performed in the LBAg/Ab testing period.

Despite an increase in testing, we determined that the percentage of HIV test results received decreased from the rPOC to LBAg/Ab time period, even in a jail with a longer than average median length of stay [8]. This difference between testing periods was statistically significant in both the analysis where we assumed that 100% received rPOC test results at intake and the sensitivity analysis where we compared only the receipt of letters notifying residents of results of tests performed. The way in which LBAg/Ab testing might have resulted in a lower percentage of test results received among those tested is twofold: 1) incarcerated individuals may be discharged before their results return, 2) incarcerated individuals may not be stably housed to receive their results through mail after release. Fewer people receiving their test results represent a missed opportunity to inform an individual about their HIV status. Delays associated with receiving test results may have profound impacts, such as not initiating ART or not using barrier protection with sex. With increasing use of PrEP, provision of negative HIV test results may also be coupled with counseling for those who are at risk of HIV.

This study builds on previous work showing that the testing strategies implemented in jail settings matter. For example, an study of three large urban jails demonstrated six to seven-fold increases in the proportion of detainees who completed testing after rPOC testing began and led to success in identifying newly infected PLWH and proving care to PLWH while incarcerated [22]. At the Fulton County Jail in Atlanta, Georgia, a routine, opt-out, rapid HIV screening program was implemented for entrants in 2010. After this program was terminated in 2017 due to halted funding, HIV testing was limited to clinician-initiated conventional laboratory-based tests with up to a week turn-around for positive tests. The rapid screening program administered 1,420 tests/month and identified 89 (0.5%) new HIV infections a year [13] compared to the clinician-initiated program, which only administered 333 tests/month and identified 15 (0.4%) infections in 2018 with three patients with newly identified HIV leaving and never receiving test results [23]. The former strategy of routine screening resulted in an additional 74 new HIV diagnoses, 8.4 HIV transmissions averted, 45 Quality Adjusted Life Years gained over a year. It was also cost-saving to society when compared to the clinician-initiated program, which resulted in \$3.7 million in additional costs to the healthcare system [23].

Limitations

The generalizability of the finding that HIV testing increased with transition from rPOC to LBAg/Ab testing may be limited. Unlike most jails, the D.C. DOC offers a panel of laboratory tests to all entrants. Most jails have a length of stay between 2 and 7 days and most do not phlebotomize entrants routinely [15]. Therefore, further data are needed on the performance characteristics of existing HIV tests in additional detention facilities to define the optimal HIV testing strategy in U.S. jails. Moreover, whether a laboratory-based HIV test would be accepted by jail entrants who otherwise would not have a blood draw needs further study. The outcome of a strategy of combining the two tests, rPOC and laboratory-based testing, is also unknown. Lastly, rPOC technology continues to improve. An FDA-approved rPOC fourth generation Ag/Ab is now available. Combining the advantages of more sensitive screening with Ag/Ab

testing along with the speed of rPOC tests may maximize the viral detection of, and provision of test results to, all PLWH passing through jail [24]. Combining rPOC testing with a specimen sent to a laboratory will permit reflex testing to confirm the rapid test result.

Conclusions

In a jail that offers phlebotomy-based laboratory testing on all entrants, we observed an increase in the HIV testing rate following a transition from rPOC to LBAg/Ab testing; however, rPOC testing averted the delays in receiving test results associated with LBAg/Ab testing in a jail. The transition from rPOC to LBAg/Ab generation testing demonstrated that each strategy has strengths in helping identify PLWH circulating through the correctional system. Additional research including cost-effectiveness studies should be performed to evaluate whether a rPOC test combined with a laboratory based screening test with a reflex confirmatory test could be the best strategy for screening for HIV in jail settings.

Maximizing the yield of HIV testing and provision of test results in detention facilities could promote rapid entry into care for those who newly test positive, rapid re-engagement for those whose positive status is confirmed but have fallen out of care, and new engagement into PrEP for those who test HIV-negative. Ending the HIV epidemic will need public health and correctional systems to collaboratively manage HIV in jails more purposively.

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