What Does Accreditation Do? A Randomized Trial of Health Care Accreditation across US Jails

Marcella Alsan
Crystal S. Yang

Harvard & NBER

Brigham and Women's
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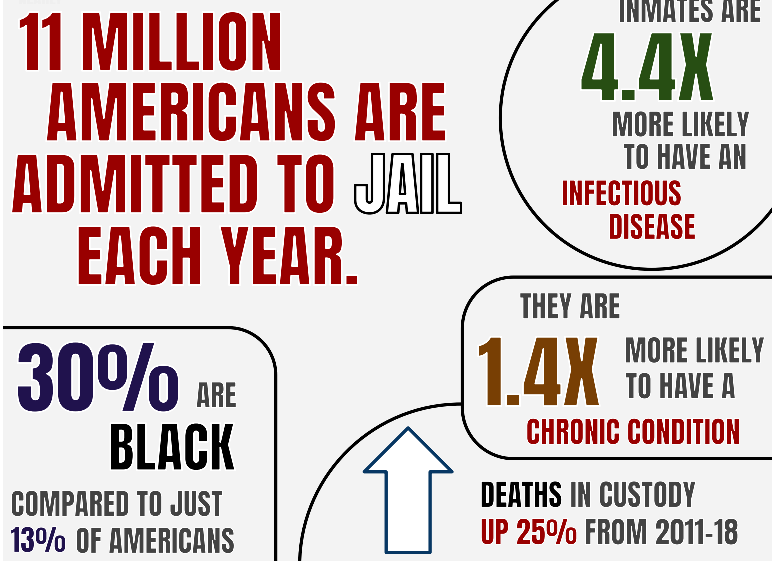


Only 27% of jurisdictions in the US in 2018 offered methadone or buprenorphine maintenance to people with opioid use disorders in any of their jails or prisons. Despite the hepatitis C epidemic being concentrated in prisons, 97% of people with hepatitis C who were incarcerated in state prisons in 2018 (an estimated 144000 people) did not receive treatment for it (Berwick, 2021).

If inmates were included in general population...

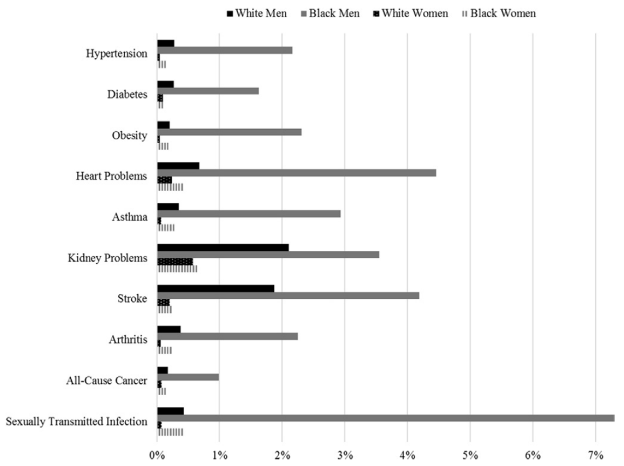


Fig. 2. Percent Increase in Prevalence of Health Conditions with Prison Inmates Included with the Noninstitutionalized Population.

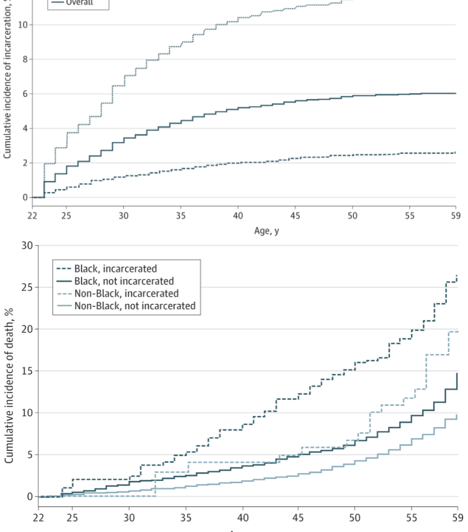
Nowotny et al. (2017)

Correctional health care and Covid-19

- COVID-19 pandemic has exposed special challenges for correctional health care.
  - Medicaid inmate exclusion policy – Federal rules prohibit states from billing Medicaid for any inmate care unless the covered individual requires a hospital stay of at least 24 hours.
- Incarcerated individuals face 5.5 times higher risk of contracting COVID-19 than those in the general US population and 3 times the COVID-19 mortality rate (Saloner et al. 2020).
- Weekly flow of ≈ 200,000 inmates through US jails and the daily commutes of ≈ 220,000 full-time jail staff implies close link between infection rates within jails and community
  - Jails have become "infectious disease incubators" (Reinhart and Chen 2021)
  - Some reports of differential release by race (injusticewatch.org/news/2020/covid-release-disparity/)

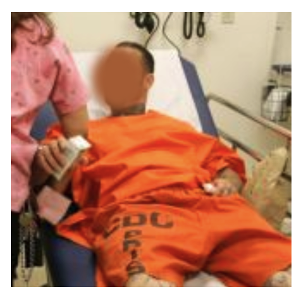
Correctional health care and racial health disparities

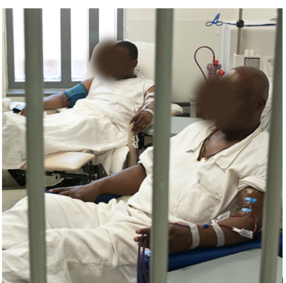
- Mortality rate of Black male prisoners was lower than Black male non-prisoners, opposite pattern for white prisoners (Patterson 2010, Rosen et al. 2011)
- Recent study using NLSY79 cohort estimated effect of incarceration on life expectancy (Bowell-Amon et al. 2021)
  - exposure = incarceration; outcome = time to death
  - Black respondents much higher exposure to incarceration
  - Incarceration increased risk of death for Black respondents (aHR 1.65; 95% CI 1.18-2.31) but not for non-Black respondents



Medicolegal issues

- Inmates only group with a constitutional right to healthcare (*Estelle v. Gamble*, 1976).
- Yet unlike healthcare for non-incarcerated, few correctional systems are accredited to ensure their care meets accepted standards.
- Payment models vary, some have FFS but many have capitated payments.
  - ''Little information is available about whether common safeguards used for payment models in other health care settings are in place, such as quality standards (to counterbalance incentives to limit care) or payment adjustments according to case mix'' (Berwick, 2021).





Investigative reporting

What We Learned While Investigating Medical Care In Mass. County Jails - WBUR

“As he awaited trial, he complained to medical staff of his worsening symptoms, jail records show. He told a nurse, ‘my head was about to explode.’ But hardly anyone believed him. Within a month, Ramey died of a treatable type of meningitis. He was 36. A Worcester County jail report would say he died of ‘natural causes.”’

Litigation and conflict

Prison nursing: the tension between custody and care

Yvonne Willmott

The responsibility of the prison service for prisoners' health starts at the point of committal from the courts. Some potential prisoners may be diverted from custody at either the police station or court, whereas others may be transferred to the NHS or to the private sector for psychiatric or physical health care. In order to provide as seamless a service as possible, prison health-care staff need to collaborate with colleagues involved in the care of ex-prisoners beyond the prison walls and liaise with those who have cared for prisoners before their committal to prison.

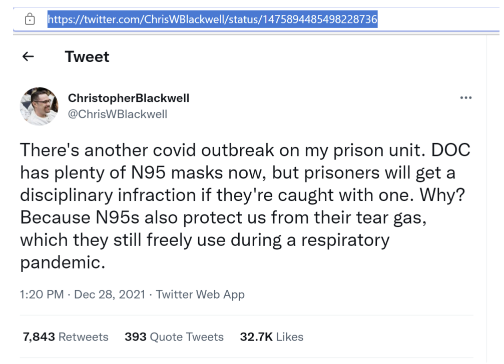
Abstract

All prisons provide healthcare services which aim to meet the needs of prisoners. The goal of the service is to give prisoners access to the same quality and range of health care as the NHS gives the general public. However, within the prison environment priorities centre around order, control and discipline and therefore an ethos of health care needs to be developed. Custody reduces the prisoner's opportunity for self-care and independent action as inmates have to consult nursing or medical staff for even the most simple remedies. Nursing staff in the prison service can play a significant part in primary health care, mental disorder and health promotion. Nurses have the knowledge, skills and attitudes needed to deal with this diverse and vulnerable prison population and to promote a positive interface between custody and care.

Matthew Loflin was coughing up blood, struggling to breathe... "I need to go to the hospital," he told his mother in a jailhouse phone call. "I'm gonna die in here." **The jail's senior medical staff...agreed he needed hospitalization. But the move was opposed by a senior manager at their employer** *Corizon Health Inc, which held a multi-million dollar contract to manage the jail's healthcare, according to court records*

https://www.reuters.com/investigates/special-report/usa-jails-privatization/

Recent examples of conflicting objectives



What is the National Commission on Correctional Health Care (NCCHC)?

- Founded by American Medical Association in partnership with the American Bar Association
- Considered the leading independent accreditation organization in corrections
- NCCHC-accredited correctional facilities serve nearly half a million inmates daily ($\sim$ 23% of US inmates) in 47 states
- Recognition from various entities:
  - Dr. Berwick (Administrator of the CMS under Obama) in JAMA: *Mandatory and rigorous accreditation process for health care quality for [correctional] institutions providing health care services is needed* — specifically referred to NCCHC as candidate
  - National Sheriffs' Association includes successful NCCHC accreditation as a key pillar of its "Triple Crown Award" given to extraordinary sheriffs
  - NCCHC standards are regularly used in legal consent decrees
- We evaluate whether NCCHC accreditation improves correctional health care

What **might** accreditation do?

Pro

- Align incentives between health and custody staff
- Better management (Bloom et al. 2013)
- Reduce discretion and disparities (United States Sentencing Commission 2012)

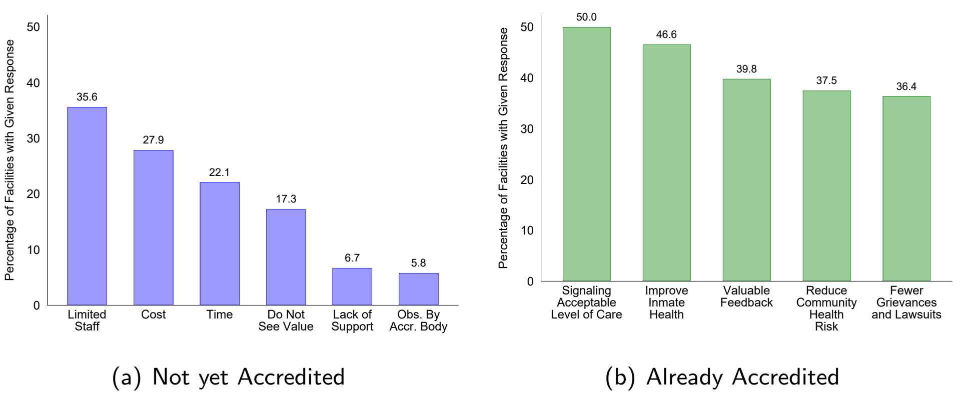
Con

- Divert resources from meaningful to measured margin
- Function solely as signal (Spence 1973)
- Uniform guidelines could widen inequality (Chan et al. 2021)

NCCHC Accreditation Process

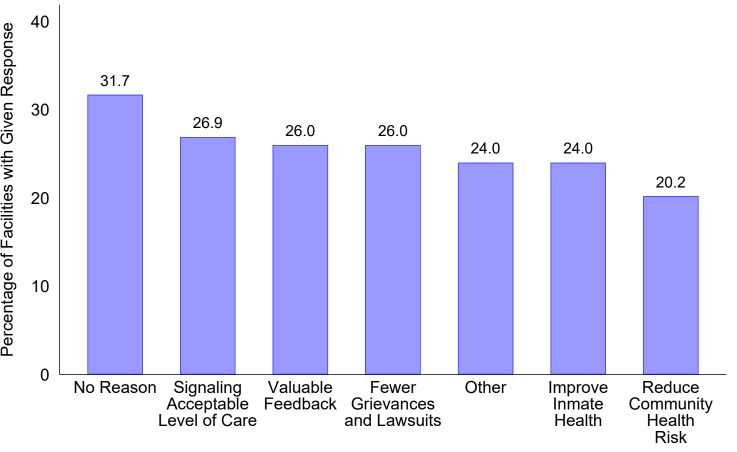
- **Self-Assessment Survey**: Facilities fill out a survey which familiarizes them with the NCCHC standards
- **Guidance and Consultation:** Based on results, a personalized guide to improvement is generated. NCCHC staff advise facilities to meet standards
- **Audit** 6-12 months after initiation, facilities are visited by NCCHC staff who review in-person the facilites
- **Re-accreditation**: Facilities must update accreditation on a yearly basis, with a onsite visit every 3 years.

Barriers and benefits of accreditation



Notes: This figure presents the reasons why some facilities have not yet been accredited (N = 104) and why some of them are already accredited (N = 88). Survey of 300 jails in June 2020. *Other* in panel A means the respondent is unsure, jail is accredited but MS not, MS outsourced, or too small/staffing insufficient. *Other* in panel B means the respondent is unsure, required by the state, or contractor is accredited.

Future benefits of accreditation – not yet accredited



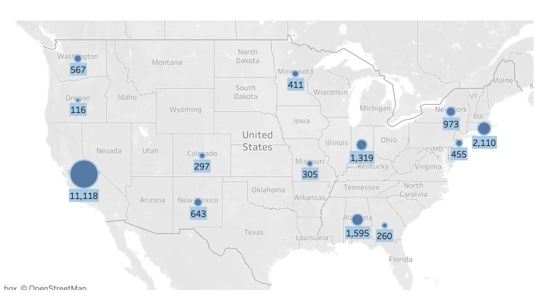
Notes: This figure presents the main reasons why not yet accredited (N = 104) facilities may want to get accredited in the future. Survey of 300 jails in June 2020. *Other* means the respondent is unsure or jail is accredited but sheriffs' association.

Outline

1. Study Design and Timeline
2. Randomization and Primary Outcomes
3. Interim Findings

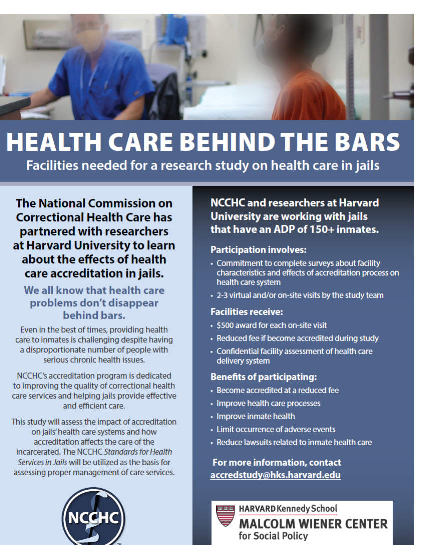
Study overview

- Recruited 40 jails from across the country to participate in a RCT
  - Half the sample will go through accreditation process immediately (treatment group)
  - Remaining jails will start accreditation process after 18 months (control group)
  - Incentivized to participate via highly subsidized accreditation fee, survey incentives, and Harvard Facility Report
- Hiring surveyors to audit NCCHC process, including (for endline) MDs.



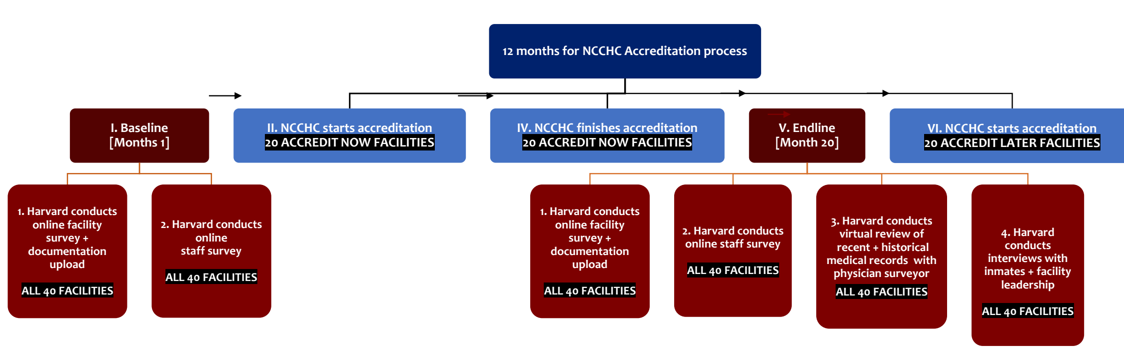
Representativeness

Recruitment process



(Some) steps in the process: Certificate of confidentiality, individual DUAs, consents from Custody and Health...

Study timeline



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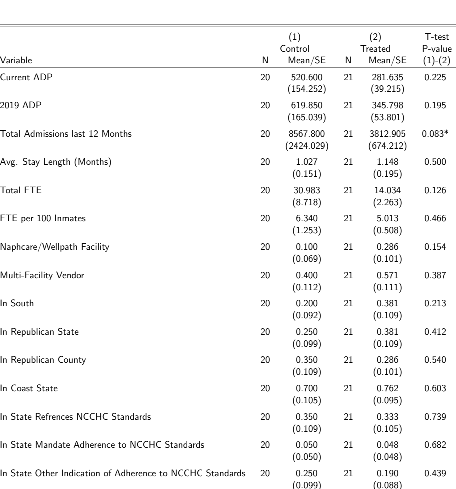
Randomization process

- Use hybrid list/stratified randomization
- 20 facilities randomized first, followed by 10, then last 10 $\rightarrow$ 3 randomization "cohorts"
  - Cohorts staggered in time to avoid attrition among jails enrolled earlier
- Stratifying variables: Average Daily Population (ADP) and Cohort
  - ADP: indicator for above/below median size of jail, which is correlated with many outcomes at baseline
  - Cohort: indicator for timing of staggered randomization

Balance table

Staff Survey



Variable	N	(1) Control Mean/SE	N	(2) Treated Mean/SE	T-test P-value (1)-(2)
Current ADP	20	520.600	21	281.635	0.225
		(154.252)		(39.215)	
2019 ADP	20	619.850	21	345.798	0.195
		(165.039)		(53.801)	
Total Admissions last 12 Months	20	8567.800	21	3812.905	0.083*
		(2424.029)		(674.212)	
Avg. Stay Length (Months)	20	1.027	21	1.148	0.500
		(0.151)		(0.195)	
Total FTE	20	30.983	21	14.034	0.126
		(8.718)		(2.263)	
FTE per 100 Inmates	20	6.340	21	5.013	0.466
		(1.253)		(0.508)	
Naphcare/Wellpath Facility	20	0.100	21	0.286	0.154
		(0.069)		(0.101)	
Multi-Facility Vendor	20	0.400	21	0.571	0.387
		(0.112)		(0.111)	
In South	20	0.200	21	0.381	0.213
		(0.092)		(0.109)	
In Republican State	20	0.250	21	0.381	0.412
		(0.099)		(0.109)	
In Republican County	20	0.350	21	0.286	0.540
		(0.109)		(0.101)	
In Coast State	20	0.700	21	0.762	0.603
		(0.105)		(0.095)	
In State Refrences NCCHC Standards	20	0.350	21	0.333	0.739
		(0.109)		(0.105)	
In State Mandate Adherence to NCCHC Standards	20	0.050	21	0.048	0.682
		(0.050)		(0.048)	
In State Other Indication of Adherence to NCCHC Standards	20	0.250	21	0.190	0.439
		(0.099)		(0.088)	
In State NoInfo NCCHC Adoption	20	0.350	21	0.429	0.924
		(0.109)		(0.111)	
F-test of joint significance (F-stat)					1.671
F-test, number of observations					41

Coding outcomes

Duplicated blind coding by research team:

- Two coders blindly review facility documents submitted through surveys and determine responses to questions and standards compliance
- Differing responses reviewed by a third coder

Three approaches to creating outcome indices:

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1. Group compliance outcomes based on 7 NCCHC standards:
   - (1) Governance and Administration (2) Health Promotion Safety and Disease Prevention (3) Personnel and Training (4) Ancillary Health Services (5) Patient Care and Treatment (6) Special Needs (7) Medical Legal

Outcomes analysis

Devil's in the dimensionality

Three approaches to creating outcome indices:

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2. Create outcomes indices using supervised machine learning algorithm
   - Ex: fit machine-learning prediction function $\hat{f}$ of treatment assignment T using k-fold cross validation to obtain outcome index $\hat{f}(Y)$ for each unit in sample (Ludwig, Mullainathan, and Spiess 2019)

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3. Categorize measures using production function approach $y = f(x)$:
   - x Inputs: staff, equipment, training programs, etc
   - $f()$ Function: processes aimed at improving health care delivery and health outcomes (e.g. reviewing receiving screening within certain time-frame)
   - y Outputs: health outcomes of interest grouped into indices

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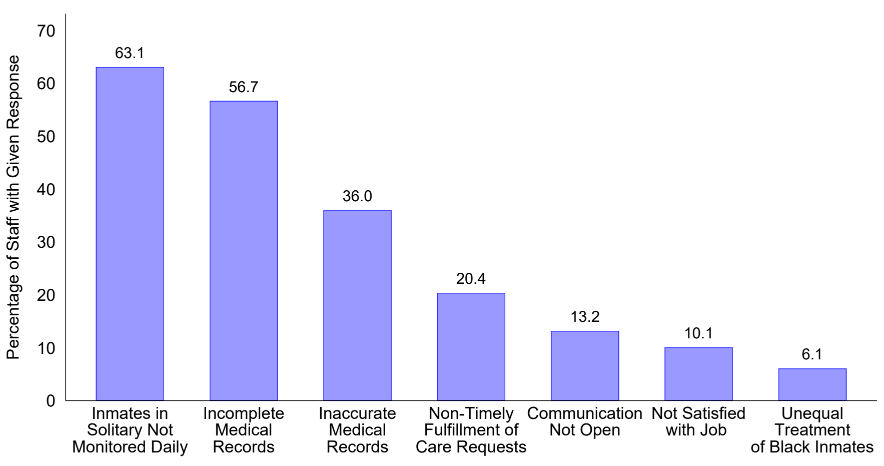
Findings from staff survey - Possible Improvements (N $\approx$ 1000)

Other common concerns include: Staff retention, better training for medical and custody staff, better management of medical staff, better pay, and better communication between health and custody staff

Findings from staff survey (cont'd)



The Correctional Health Care Study Team

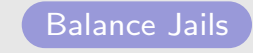
Special thanks to J-PAL and many, many students

Thank you!

Correctional and health staff survey (Part 1)

	Control Mean (SD)	Treatment Mean (SD)
	(1)	(2)
Panel A: Personal Information		
Gender: Male	0.515	0.527
	(0.500)	(0.500)
Race: White/Caucasian	0.545	0.543
	(0.498)	(0.499)
Race: Black/African-American	0.054	0.247
	(0.226)	(0.432)
Race: Hispanic	0.265	0.164
	(0.442)	(0.371)
Race: Asian	0.129	0.033
	(0.336)	(0.179)
Health Staff	0.503	0.844
	(0.500)	(0.364)
Custody Staff	0.497	0.156
	(0.500)	(0.364)
Years At Faciliy (less than 1, 1-3, 3-6, 7+)	2.904	2.951
	(1.070)	(1.132)
Panel B: Staff Engagement (1 if 'Agree' or 'Strongly Agree')		
I am Satisfied With My Job	0.674	0.694
	(0.285)	(0.257)
There is Open Communication Between Health and Custody	0.642	0.638
	(0.278)	(0.298)
Inmate Health is a Top Priority	0.675	0.676
	(0.259)	(0.250)

Correctional and health staff survey (Part 2)



	Control Mean (SD)	Treatment Mean (SD)
	(1)	(2)
Panel C: Health Staff Only		
1 if 'Always' or 'Often'		
Care Delivered in Timely Manner	0.749	0.805
	(0.203)	(0.191)
Medical Record Had Incomplete Info	0.578	0.621
	(0.236)	(0.227)
Medical Record Had Inaccurate Info	0.681	0.715
	(0.220)	(0.218)
Scale of 1-5, 1=Poor and 5=Excellent		
Rate the Quality of Medical Services	0.696	0.616
	(0.222)	(0.260)
Rate the Quality of Mental Health Services	0.691	0.615
	(0.233)	(0.260)
Policies and Procedures Available and Accessible (Yes/No)	0.908	0.814
	(0.289)	(0.393)
Panel D: Standards and Quality of Care (Yes/No)		
Are Sick Calls Picked Up Daily?	0.946	0.966
	(0.227)	(0.184)
Are Encounters Conducted Within 24hrs?	0.924	0.919
	(0.266)	(0.275)
Do Inmates Have the Right to Make Informed Health Care Decisions?	1.000	1.000
	(0.000)	(0.000)
Are Refusals Documented in Inmate Health Records?	0.990	0.984
	(0.102)	(0.125)

Correctional and health staff survey (Part 3)

Balance Jails

	Control Mean (SD)	Treatment Mean (SD)
	(1)	(2)
Panel E: COVID Protocols (Yes/No)		
Is Screening Available to All Staff?	0.923	0.854
	(0.267)	(0.353)
Does the Facility Have Access to Testing?	0.987	0.972
	(0.115)	(0.166)
Are Vaccines Available to Inmates?	0.997	0.968
	(0.059)	(0.176)

Enrolled Jails vs. Census of Jails

Variable	(1) Not in Sample N	(1) Not in Sample Mean/SE	(2) In Sample N	(2) In Sample Mean/SE	T-test P-value (1)-(2)
Average daily population (ADP)	1388	471.68	40	813.30	0.16
		(12.55)		(246.61)	
Annual admissions	1388	6,380.64	40	11,369.10	0.09*
		(203.25)		(2,948.14)	
Capacity	1388	456.59	40	527.85	0.42
		(13.07)		(87.66)	
ADP over capacity	1388	0.38	40	0.35	0.73
		(0.01)		(0.08)	
Decree limiting inmates	1348	0.02	39	0.05	0.45
		(0.00)		(0.04)	
In urban area	1388	0.51	40	0.72	0.00***
		(0.01)		(0.07)	
Female inmates present	1388	0.97	40	0.97	0.88
		(0.00)		(0.03)	
Share of Black inmates	1388	0.27	40	0.27	0.96
		(0.01)		(0.04)	
Staff per ADP	1388	0.30	40	0.38	0.13
		(0.03)		(0.05)	
Has drug treatment confinement	1352	0.24	40	0.33	0.26
		(0.01)		(0.07)	
Has mental health care	1349	0.37	40	0.50	0.09*
		(0.01)		(0.08)	
Inmate death rate	471	8.24	19	10.21	0.38
		(0.31)		(2.25)	
F-test of joint significance (F-stat)					1.20
F-test, number of observations					989

Notes: The value displayed for t-tests are p-values. Standard errors are robust. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level. The F-test doesn't include the