Disparities in Mental Health Referral and Diagnosis in the New York City Jail Mental Health Service

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The care of persons with mental illness in the United States is inextricably linked to the criminal justice system. Approximately 12 million people pass through a jail or prison annually, with the majority cycling through local jails.[1] Approximately one third of these persons have an identified mental illness diagnosed before or during incarceration. Treatment and discharge planning for this population represent considerable challenges. In some small jails, a single mental health professional may only be available for several hours a week, whereas in larger jails more comprehensive services may be available.

Research shows that significant health disparities exist for incarcerated persons of color, including the occurrence of infection, violence, and mortality.[2–5] The distribution of psychiatric morbidity and mortality by race in correctional settings is complex, with studies showing higher rates of major affective and depressive disorder diagnoses and suicide among White patients and higher rates of schizophrenia and nonschizophrenic psychotic disorder diagnoses among African American patients.[6–10] Similar disparities exist in the community settings where these patients originate and for most, to which they will return.[11]

In the New York City jail system, the Bureau of Correctional Health Services of the New York City Department of Health and Mental Hygiene is responsible for all aspects of medical and mental health care and the New York City Department of Correction is responsible for security and custody management. The New York City jail system is the nation's second largest, with 70 000 annual admissions and 11 000 persons incarcerated at any given time, with a median length of incarceration of 9 days. Unlike most jail settings, which use relatively cursory intake health screenings, every person who enters the New York City jail system undergoes a comprehensive 4- to 6-hour intake history taking, physical examination, and

Objectives. To better understand jail mental health services entry, we analyzed diagnosis timing relative to solitary confinement, nature of diagnosis, age, and race/ethnicity.

Methods. We analyzed 2011 to 2013 medical records on 45 189 New York City jail first-time admissions.

Results. Of this cohort, 21.2% were aged 21 years or younger, 46.0% were Hispanic, 40.6% were non-Hispanic Black, 8.8% were non-Hispanic White, and 3.9% experienced solitary confinement. Overall, 14.8% received a mental health diagnosis, which was associated with longer average jail stays (120 vs 48 days), higher rates of solitary confinement (13.1% vs 3.9%), and injury (25.4% vs 7.1%). Individuals aged 21 years or younger were less likely than older individuals to receive a mental health diagnosis (odds ratio [OR] = 0.86; 95% confidence interval [CI] = 0.80, 0.93; *P* < .05) and more likely to experience solitary confinement (OR = 4.99; 95% CI = 4.43, 5.61; *P* < .05). Blacks and Hispanics were less likely than Whites to enter the mental health service (OR = 0.57; 95% CI = 0.52, 0.63; and OR = 0.49; 95% CI = 0.44, 0.53; respectively; *P* < .05), but more likely to experience solitary confinement (OR = 2.52; 95% CI = 1.88, 3.83; and OR = 1.65; 95% CI = 1.23, 2.22; respectively; *P* < .05).

Conclusions. More consideration is needed of race/ethnicity and age in understanding and addressing the punishment and treatment balance in jails. (*Am J Public Health*. Published online ahead of print July 16, 2015: e1–e6. doi:10.2105/AJPH.2015.302699)

preventive medicine encounter. Approximately 25% of those admitted to the jails will be admitted into the mental health service, and approximately 4% of those admitted will ultimately be designated as seriously mentally ill (SMI). Although the proportion of SMI patients has remained stable in recent years, the percentage of admitted persons who become part of the mental health service has increased from approximately 12% in 2004 to 25% today. (Note: Entrance into the mental health service is based on ever receiving a mental health diagnosis during incarceration in the New York City jail system.) In addition, because persons with mental illness have longer lengths of stay than others, they now represent approximately 38% of persons in jail at any given time. Entry into the jail mental health service is typically described as resulting from a mental health referral that occurs during the intake history or physical examination during jail admission.

Nonetheless, we also have patients enter into the mental health service later in their stay and our clinical experience is that these later admissions may be associated with environmental stressors of the jail itself.

Recent Correctional Health Services quality improvement studies on the issue of self-harm have revealed that SMI patients, in addition to adolescents and those in solitary confinement, are significantly more likely to self-harm while in jail.[12] Solitary confinement refers to the isolation of persons from others for 22 to 24 hours per day in a locked cell, which is employed in the New York City jail system for punishment reasons. To better understand how persons with a mental health diagnosis initially come to the attention of the mental health service, we conducted an epidemiological analysis focused on timing of diagnosis during jail stay and, where relevant, relative to solitary confinement, nature of

diagnosis, age, and race/ethnicity of patients. The overarching goal of this analysis is to improve the quality of care for patients by detecting characteristics of our health system and those of our patients that merit special attention.

METHODS

This analysis focused on individuals during their first jail incarceration. Eligible patients had only 1 incarceration from April 15, 2011, through November 31, 2013, and no previous history of incarceration in New York City since November 2008 when our electronic health record (EHR) was established. Previous paper-based diagnoses were not known to us. To allow patients admitted after December 1, 2013, adequate follow-up time for mental illness to be expressed and diagnosed, we extended the observation period until February 28, 2014.

Patients admitted into New York City jails receive a rigorous medical intake within 4 hours of their arrival. The medical intake can trigger a mental health referral and assessment, which occurs within 72 hours or immediately, depending on the referral urgency. Patients may also be referred to mental health services through Department of Corrections or other medical staff on the basis of their observations.

We extracted data on inmate demographics, jail admission and discharge dates, and placement in solitary confinement from the EHR. Demographic information is entered directly by the Department of Correction staff into their electronic Inmate Information System, which is automatically transferred into the EHR. The interface between the Department of Correction information system and the EHR is quite reliable, although we do not have visibility into the quality assurance process for Department of Correction data entry. We defined SMI

patients according to criteria established by the New York State Office of Mental Health.[13] We also obtained data for medical and mental health resource use from the EHR during the study period. We defined use as the number of visits during which patients had an interaction with a medical or mental health provider, including psychiatrists, psychologists, and licensed clinical social workers, and mental health diagnoses were made consistent with the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*.[14]

Our dependent variables—entry into mental health services, late entry into mental health services, and entry into solitary confinement—were dichotomous. We identified patients who were admitted into mental health services from EHR (0 = no; 1 = yes). Because most mental health service recipients are identified within a week of jail admission, we defined those who were sent to mental health services after 7 or more days of jail admission as late entrants

TABLE 1—Percentage Receiving a Mental Health Diagnosis Among Persons Incarcerated for the First Time, by Timing of the Mental Health Diagnosis and Selected Demographic, Mental Health Diagnosis, and Incarceration Features: New York City, 2011–2013

Characteristic	Total No. (%) or Mean	MH Dx		MH Dx Admitted ≤ 7 d		MH Dx Admitted > 7 d	
		No. (%) or Mean	% of Total	No. (%) or Mean	% of Total	No. (%) or Mean	% of Total
Total	45 189 (100)	6 673 (14.8)		4 745 (71.1)		1 928 (28.9)	
Gender							
Female	5 756 (12.7)	1 625 (24.4)	28.2*	1 302 (27.4)	80.1	323 (16.8)	19.9
Male	39 433 (87.3)	5 048 (75.6)	12.8	3 443 (72.6)	68.2	1 605 (83.2)	31.8*
Age							
≤ 21 y	9 584 (21.2)	1 469 (22.0)		849 (17.9)	57.8	620 (32.2)	42.2*
> 21 y	35 605 (78.8)	5 204 (78.0)		3 896 (82.1)	74.9	1 308 (67.8)	25.1
Race/ethnicity							
Hispanic	20 778 (46.0)	2 720 (40.8)	13.1	1 905 (40.1)	70.0	815 (42.3)	30.0
Non-Hispanic Black	18 367 (40.6)	2 871 (43.0)	15.6	1 994 (42.0)	69.5	877 (45.5)	30.5
Non-Hispanic White	3 970 (8.8)	870 (13.0)	21.9*	689 (14.5)	79.2	181 (9.4)	20.8*
Other or unknown	2 064 (4.6)	212 (3.2)	10.3	157 (3.3)	74.1	55 (2.9)	25.9
LOS, d	48	120*		84		210*	
Solitary confinement	1 770 (3.9)	876 (13.1)	49.5*	302 (6.4)	34.5	574 (29.8)	65.5*
MH dx ±10 d of solitary confinement		140 (16.0)		43 (14.2)	30.7	97 (16.9)	69.3
Injured	3 227 (7.1)	1 698 (25.4)	52.6*	867 (18.3)	22.0	831 (43.1)	48.9*
SMI		1 139 (17.5)		982 (20.7)	32.0*	157 (8.1)	13.8
Depression or anxiety dx		1 165 (17.5)		878 (18.5)	29.8*	287 (14.9)	24.6
Mood, adjustment, or antisocial personality disorder dx		2 343 (35.1)		1 345 (28.3)	21.5	998 (8.0)	42.6*

Note. Dx = diagnosis; LOS = mean length of stay (days); MH = mental health; SMI = diagnosed as seriously mental ill.
*P = .001.

(0 = mental health services entry within 7 days; 1 = mental health services entry after 7 days or more). We identified patients who were in solitary confinement from housing placement, thus creating a dichotomous variable (0 = no; 1 = yes).

The independent variables included ever being in solitary confinement during incarceration, SMI, age 21 years and younger, gender, length of stay, and race/ethnicity. We created a binary variable to indicate patients who were aged 21 years or younger (0 = older than 21 years; 1 = 21 years or younger). We used 21 years as the cutoff because of the difference in the epidemiology of young adults and older adults, as well as the different approaches that are taken by jail managers in responding to these 2 groups. Because clinical staff rarely remove an SMI designation for a patient during their incarceration, we used the presence of SMI at any time. Gender was another dichotomous variable (0 = male; 1 = female).

We calculated length of stay (in 6-month increments) from jail admission and discharge dates, creating a dummy discharge date for those patients who were still in jail by February 28, 2014. We created another continuous variable to show the timing of mental health service entry in conjunction with solitary confinement, namely, mental health service entry 10 days before or after solitary confinement (0 = did not enter mental health services around the time of solitary confinement; 1 = entered into mental health services 10 days before or after solitary confinement). Our previous investigations and clinical work indicated strong correlations between the 2, particularly in relation to evidence of new mental health symptoms just before or at the outset of placement in solitary confinement.[12]

The race/ethnicity was categorized as Hispanic, non-Hispanic Black, non-Hispanic White, and other or unknown.

Two additional mental health variables included were whether patients were diagnosed with depression or anxiety (0 = no; 1 = yes), and if they were diagnosed with mood, adjustment, or antipersonality disorders (0 = no; 1 = yes). We chose these 2 diagnosis combinations on the basis of clinical observations, mainly that the second set of diagnoses are often associated with patients who experience friction in the jail setting and who may elicit less sympathy for their mental health problems, whereas the first diagnosis grouping reflects assessments that are often thought by both inmates and clinical staff to be more "legitimate" mental health problems.

We conducted 3 logistic regression models to estimate odds ratios and 95% confidence intervals for predictors associated with entry into mental health services, late entry into mental health services, and entry into solitary confinement. The first model looked at the effects of age 21 years or younger or older, length of stay, gender, and race/ethnicity on entry into mental health services and the second model looked at the effects of the same independent variables on late entry into mental health services. The third model explored the impact of gender, race/ethnicity, age 21 years or younger or older, and length of stay on entry into solitary confinement.

We determined statistical significance of differences in bivariate analysis by using the χ^2 test and we determined significance for bivariate and multivariate analysis at the 5% level. We used SPSS version 19 (IBM, Somers, NY) for statistical analysis.

RESULTS

Of the 129 642 individuals incarcerated during the study period, there were 45 189 who met the study criteria. Almost 15% received mental health services and close to 30% (28.9%) of these patients entered mental health services 7 or more days after admission.

Of this study cohort, 87.3% were male, 21.2% were aged 21 years or younger, 46.0% were Hispanic, 40.6% were non-Hispanic Black, 8.8% were non-Hispanic White, and 3.9% spent time in solitary confinement (Table 1).
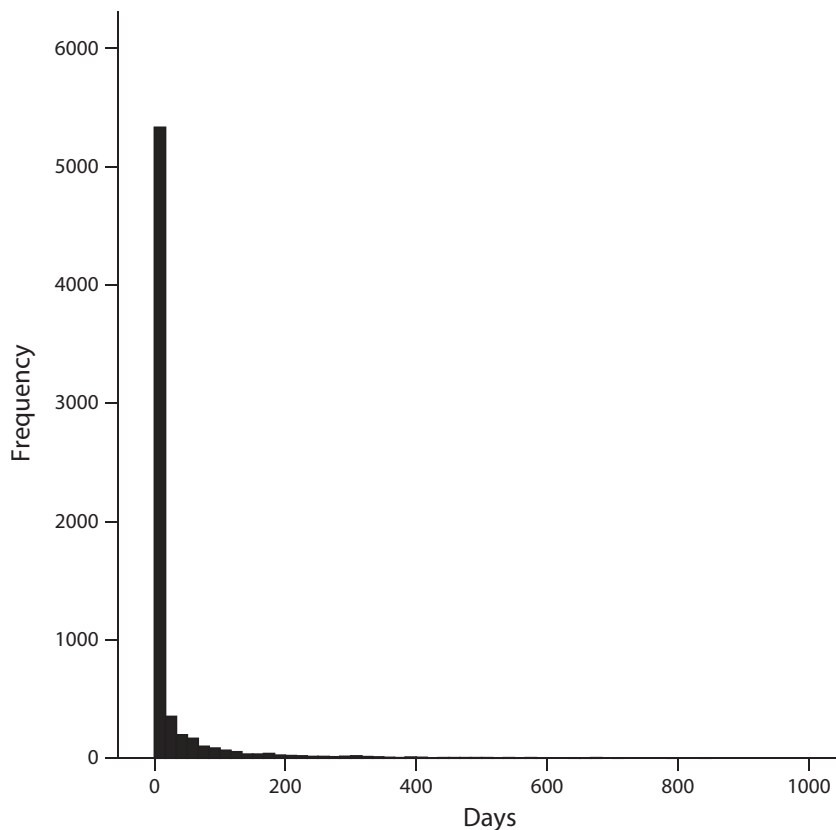
Note. Mean = 24.62 days; SD = 65.929 days. The sample size was n = 6673.

FIGURE 1—Timing of entry into mental health services (n = 6673): New York City jail, 2011–2013.

Mental health patients were significantly more likely than non–mental health patients to be female (28.2% vs 12.8%), non-Hispanic White (21.9% vs 15.6% non-Hispanic Black and 13.1% Hispanic), to stay longer in jail (120 days vs 35 days), to be placed in solitary confinement (13.1% vs 2.3%), and to be injured (25.4% vs 4.0%; Table 1). Of these patients, 17.5% were diagnosed as SMI, and the most frequent mental health diagnoses among all patients were adjustment disorder (15.1%), depression (9.7%), mood disorder (6.6%), and bipolar disorder (4.2%).

Most mental health patients (71.1%) received their mental health diagnosis within 7 days of admission (Table 1; Figure 1). Conversely, findings for the group of patients who were ever in solitary confinement show that 65.5% received a diagnosis later in their stay, compared to 34.5% of patients diagnosed within 7 days (P<.001) after admission, indicating that later entry into mental health services might be in the context of solitary confinement. When we plotted the distribution of receiving a mental health diagnosis with respect to timing of entry into solitary confinement, we found a near normal distribution centered around zero days (Figure 2). Among those experiencing solitary confinement, 16.0% of mental health diagnoses occurred within 10 days before or after the date of solitary confinement, including 69.3% of mental health diagnoses given more than 7 days after jail entry (Table 1). Proportionally more male, age 21 years or younger, and non-White patients received mental health diagnoses 7 days or more after admission than received diagnoses within 7 days of admission. They were also more likely to go to solitary confinement, be injured, and stay longer in jail.

Patients in this group were less likely to be diagnosed with SMI and depression or anxiety, but more likely to be diagnosed with mood, adjustment, or antisocial personality disorders (Table 1). In addition, among those with a late mental health diagnosis, only 8.8% of Whites ever went into solitary confinement, compared with 38.8% of Blacks and 25.6% of Hispanics.

The first 2 logistic regression models demonstrated that entry into mental health services and late entry into mental health services were significantly associated with being in solitary confinement, female gender, older age, longer stay, and non-Hispanic White (compared with Hispanic and non-Hispanic Black; Table 2) race/ethnicity. Patients who were female, older than 21 years, non-Hispanic White (compared with Hispanic and non-Hispanic Black), in solitary confinement, and who stayed in jail longer were more likely to receive mental health services (Table 2). On the other hand, patients who were male, Hispanic (compared with non-Hispanic White), aged 21 years or younger, in solitary confinement, and who stayed longer in jail were more likely to enter mental health services 7 or more days after jail admission (Table 2). The third logistic regression model showed that solitary confinement was strongly associated with the same independent variables. Patients who were male, non-White, aged 21 years or younger, and stayed longer in jail were more likely to be sentenced to solitary confinement.

DISCUSSION

These data reveal concerns that some groups in the jail system are more likely to elicit treatment responses whereas others are more likely to meet with a punishment response. Both non-White and young patients in the New York City jail system appear to be less likely to enter the jail mental health system and more likely to enter solitary confinement than their White and older counterparts. One startling observation is that non-Hispanic Black and Hispanic patients are 2.52 and 1.65 times more likely to enter solitary confinement than White patients. In addition, to the extent that patients in these age- and race-based risk groups enter into the mental health system, this entry appears much more likely to coincide
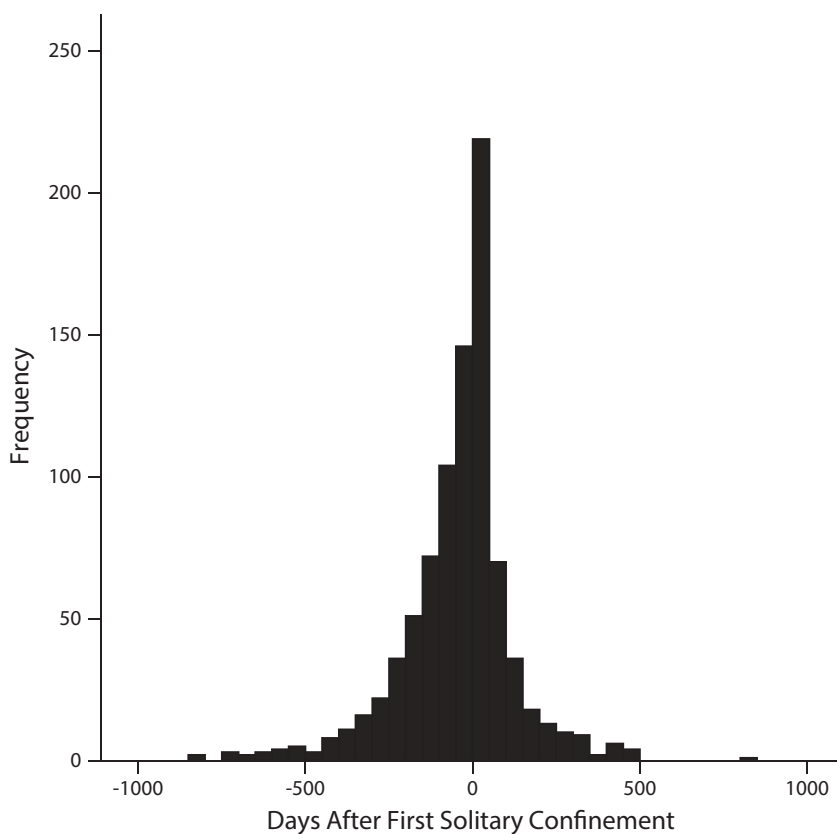
Note. 0 = service entry on the first day of solitary confinement. Mean = –43.82 days; SD = 168.822 days. The sample size was n = 876.

FIGURE 2—Timing of mental health service entry with respect to the first solitary confinement episode (n = 876): New York City jail, 2011–2013.

TABLE 2—Multivariate Analysis Results for Predictors of Receiving Mental Health Services, Timing of the Entry Into Mental Health Services, and Entry Into Solitary Confinement: New York City Jail, 2011–2013

Variables	OR (95% CI)
Receipt of mental health services	
Ever in solitary confinement during this incarceration	2.44 (2.16, 2.76)
Female vs male	3.36 (3.14, 3.60)
Non-Hispanic Black vs non-Hispanic White	0.57 (0.52, 0.63)
Hispanic vs non-Hispanic White	0.49 (0.44, 0.53)
Age category 16–21 y vs ≥ 22 y	0.86 (0.80, 0.93)
Length of stay (6-mo increments)	2.59 (2.48, 2.71)
Timing of entry into mental health services (≥ 7 d after admission)	
Ever in solitary confinement during this incarceration	2.64 (2.20, 3.16)
Female vs male	0.73 (0.63, 0.84)
Hispanic vs non-Hispanic White	1.26 (1.04, 1.53)
Age category 16–21 y vs ≥ 22 y	1.44 (1.25, 1.66)
Length of stay (6-mo increments)	1.89 (1.76, 2.03)
Solitary confinement	
Female vs male	0.77 (0.62, 0.92)
Non-Hispanic Black vs non-Hispanic White	2.52 (1.88, 3.83)
Hispanic vs non-Hispanic White	1.65 (1.23, 2.22)
Age category 16–21 y vs ≥ 22 y	4.99 (4.43, 5.61)
Length of stay (6-mo increments)	4.99 (4.72, 5.28)

Notes. CI = confidence interval; OR = odds ratio.

with being punished with solitary confinement than for White and older patients.

We have several hypotheses about the sources of these patterns. Some of the disparities in diagnosis by race/ethnicity likely reflect differences in rates of diagnosis and engagement in care in the community, such as outpatient mental health treatment.[12] The higher rates of early diagnosis among White and adult incarcerated patients mirror reports from community settings. There, Whites have higher rates of mental health visits than other racial/ethnic groups, a finding that appears not to have narrowed over time.[15] Although some or part of this disparity in diagnosis is linked to access, provider-level bias may also contribute. There is a well-documented social tendency to view non-White persons as criminal or untruthful, which in our mental health setting could lead staff to not detect mental illness or to give a more pejorative diagnostic label when patients exhibit stress from solitary confinement.[16,17] The report by the Institute of Medicine on the topic of racial disparities in health

care identified provider bias and patient mistrust as important features of addressing the uneven terrain that affects encounters between patients and their providers.[18]

We also hypothesized that new disparities may occur in the jail setting in adults, reflecting race or age-related bias in the health system or the security system's punishment apparatus. There is evidence to suggest that inmate race/ethnicity is associated with whether someone with a mental health diagnosis and behavioral problems elicits a treatment or a punishment (e.g., solitary confinement) response. Among those with a late mental health diagnosis, only 8.8% of Whites ever went into solitary confinement, compared with 38.8% of Blacks and 25.6% of Hispanics. Both security and health staff may be predisposed to view behavioral problems by White inmates as a manifestation of mental illness that merits treatment, as opposed to non-White inmates whom they may view as requiring punishment. These tendencies have been noted in community settings when perceptions of police officers have been

assessed. Also, recent observations that mass incarceration is viewed more favorably when portrayed as disproportionately including non-Whites supports the link between non-Whites and a perceived need for punishment.[19]

Late entries into mental health services are closely associated with solitary confinement and self-harm by patients to avoid or get released from solitary confinement. Our clinical experience is that some patients will go to extreme lengths to avoid or get released from solitary confinement, including lighting fires in a closed cell, banging one's head on the wall, and forms of potentially fatal self-harm. The histogram (Figure 2) showing a normal distribution of timing of entry into the mental health service around the time that patients enter solitary confinement is strikingly similar to that of solitary confinement and self-harm that we previously published, suggesting a temporal link between solitary confinement, self-harm, and entry into the mental health service.[12] Patients who receive a psychiatric diagnosis because of self-harm may represent a cohort with mental health problems that went unnoticed during the initial jail admission process. Conversely, these patients may be adaptively responding to extreme environmental conditions in hopes of escaping the setting, as those who receive a mental health diagnosis while in solitary confinement may be removed from the setting by the medical team. The concept of pathologizing normal adaptive behavior along racial lines has historical precedent in the term drapetomania, a contrived diagnosis given to slaves who fled plantations in the 1800s.[20]

On the basis of these findings, we have begun the process of training staff on how to deliver culturally appropriate care, starting with a grant-funded program to promote culturally appropriate care to Latino patients in jail.[21] A core component of such training is to start with an acknowledgment of existing disparities in the delivery of care. We will expand these efforts with a focus on how both security and health staff respond to patients in jail with behavioral problems, confronting staff's personal biases that can lead to inappropriate and differential treatment response. Related to this, the infraction process that security staff uses to adjudicate violations of jail rules will benefit from similar scrutiny and training. Given the lack of inmate representation or outside

scrutiny in most jail infraction processes, it would be equally useful to conduct assessments of jail infractions with an eye toward potential race- or age-related biases.

Limitations

In this analysis, we focused on demographic and clinical information present in the EHRs. Criminal charges and jail infraction information were not available. As a consequence, some of the differences may reflect disparities at play in the arrest, arraignment, and bail processes. An important area for future study is to examine the criminal charges of these groups to assess the relation between length of stay and entry into the mental health service.

In addition, our focus on first jail incarceration reduced our sample size from approximately 225 557 jail admissions during the time period of analysis to 45 189. Our analysis did not account for incarcerations outside the New York City jail system, and thus may have missed the impact that these events could have on our variables of interest. Finally, the diagnostic groupings used were prompted by input from clinical staff but may not reflect differences reported or used in community settings.

Conclusions

These data from persons in the New York City jail system for their first incarceration reveal age and race-based disparities in when and how patients enter the mental health system in the New York City jail system. Individuals who are aged 21 years and younger and who are non-White are more likely to get a mental illness diagnosis late in their stay, spend time in solitary confinement, have their mental health diagnosis associated with solitary confinement, and receive a diagnosis of mood, adjustment, or antisocial disorder. They are less likely to get a diagnosis of anxiety or depression. Even compared with others who have a late mental health diagnosis, they are much more likely to spend time in solitary confinement and more likely to get a diagnosis of mood, adjustment, or antisocial personality disorder. We hypothesize that these findings reflect a combination of factors, including community disparities in mental health engagement, as well as differences in clinical versus punishment responses that occur inside jail. More investigation of these findings is warranted. We have begun efforts to train our mental health providers on culturally appropriate methods of promoting engagement in care. ∎

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