

Nonemergency Involuntary Antipsychotic Medication in Prison: Effects on Prison Inpatient Days and Disciplinary Charges

Anasuya Salem, MD, MPH, Alexander Kushnier, MD, Nicole Dorio, MD, and Rusty Reeves, MD

We hypothesized that treating mentally ill inmates involuntarily with antipsychotic medication would reduce the number of prison inpatient days and the number of inmates who receive disciplinary charges. The subjects were 133 mentally ill inmates who were placed on the New Jersey Department of Corrections (NJ DOC) nonemergency involuntary medication protocol and received antipsychotic medication for at least one year. No difference was noted in an inmate's mean number of prison inpatient days in the year before versus the year during involuntary medication. Fewer inmates received serious disciplinary charges during the year of involuntary medication relative to the year before, when they were not medicated. In addition, there were decreases in mean instances and mean total number of charges during involuntary medication versus before. Neither an increased number of inpatient days nor depot medication accounted for the inmates who incurred no charges while receiving involuntary medication.

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The science is clear: although persons with mental illness pose a low absolute risk for violence, they have a greater relative risk.^{1,2} The NIMH's Epidemiologic Catchment Area (ECA) study,³ for example, found that the lifetime prevalence of violence among persons with serious mental illness, such as schizophrenia and bipolar disorder, was 16 percent compared with 7 percent among persons without psychiatric illness.

Antipsychotic medications reduce symptoms of mental illness, such as paranoia and disorganized behavior, thereby enabling those afflicted to have better lives in the community. Antipsychotic medications may also reduce the violence associated with mental illness. However, in the CATIE (Clinical Antipsychotic Trials of Intervention Effectiveness) study,⁴

the largest, longest, and most comprehensive study of the treatment of schizophrenia with antipsychotic medications, nearly 75 percent of the patients discontinued their medications during the 18 months of the study.⁵ Nonadherence to treatment has been reviewed in numerous studies, both before and after the CATIE study.^{6–10} That study and others have confirmed what any psychiatrist working with the severely mentally ill already knows: nonadherence to antipsychotic medication is common and is probably the norm rather than the exception.

Noncompliance with treatment is a significant contributor to incarceration among the severely mentally ill.¹¹ Conversely, routine outpatient treatment, including medication, reduces the likelihood of arrest among persons with severe mental illness.¹² Judicial and social service systems use various strategies to encourage persons with mental disorders to adhere to treatment in the community.¹³ Forty-five states allow the use of assisted outpatient treatment (AOT). AOT statutes are an attempt to break the cycle of deterioration and rehospitalization among the severely mentally ill who are nonadherent to treatment. AOT may facilitate treatment compliance in the community and treatment plan may include prescription of an antipsychotic medication.¹⁴

Dr. Salem is Northern Regional Director of Psychiatry and Dr. Reeves is Director of Psychiatry, Rutgers-University Correctional Health Care (UHC), Rutgers University–Robert Wood Johnson Medical School, Piscataway, NJ. Dr. Salem is Clinical Assistant Professor, Dr. Reeves is Clinical Associate Professor and Director of the Forensic Psychiatry Fellowship, and Drs. Kushnier and Dorio are Forensic Psychiatry Fellows, Department of Psychiatry, Rutgers University–Robert Wood Johnson Medical School. Address correspondence to: Anasuya Salem, MD, MPH, UHC c/o NJ DOC, Bates Building, 2nd Floor, Box 863, Stuyvesant Avenue and Whittlesey Road, Trenton, NJ 08625. E-mail: saleman@ubhc.rutgers.edu.

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AOT facilitates medication and treatment compliance in the community by providing for court-ordered commitment to treatment. Treatment typically includes prescription of antipsychotic medication. If a person does not take his medication or otherwise comply with treatment, he can be detained and evaluated for hospitalization. AOT statutes are an attempt to break the cycle of deterioration and rehospitalization among the severely mentally ill who are nonadherent to treatment. If a person is noncompliant with medication and treatment, he can be detained and evaluated for hospitalization.

Does AOT reduce hospitalization and its associated cost, while improving functioning and reducing violence? These issues remain controversial. There have been three randomized, controlled trials of AOT, in New York,¹⁵ North Carolina,¹⁶ and England,¹⁷ and they failed to show statistically significant effects in hospitalization, functioning, arrests, and violence. These studies, however, had significant limitations, such as modest sample size,¹⁵ no enforcement of court order,¹⁵ a large proportion of subjects excluded,^{15,17} unknown criminal histories,¹⁷ no requirement for multiple hospitalizations,¹⁷ unequal treatment,¹⁶ and exclusion of violent subjects.^{15,16}

On the other hand, the North Carolina study showed that sustained outpatient commitment (six months or more), in combination with intensive mental health services (three or more visits per month), was associated with reduced rehospitalization and cost, as well as with reduced violence, arrest, and victimization.^{16,18–23}

Nonrandomized before-and-after studies (the same subjects studied before AOT, and during placement on AOT) have consistently demonstrated the effectiveness of AOT. Studies in New York have shown that AOT reduces arrests, hospitalization, and costs, while improving medication possession and social functioning.^{24–32} Studies of AOT in other states similarly demonstrated reduced hospitalizations,^{33–36} increased treatment compliance,^{35–37} and fewer hospital and jail days.³⁸

Kisely and Campbell, in a recent meta-analysis of the three abovementioned randomized controlled trials, concluded that AOT is no more effective than standard voluntary or supervised care.³⁹ Rowe, in an editorial highlighting the pro and con arguments regarding AOT and summarizing the equivocal research on AOT, recommended alternatives to AOT, including peer engagement, citizenship interventions, and mental health outreach.⁴⁰

Involuntary nonemergency administration of psychiatric medication also takes place in correctional institutions. Most states provide a procedure for in-

voluntary medication of an inmate who, by reason of mental illness, poses a danger to self or others or is gravely disabled. Some states, such as New York, require judicial review of an application for involuntary medication of an inmate. However, in *Washington v. Harper*,⁴¹ the United States Supreme Court ruled that nonjudicial administrative review of an application for involuntary medication is constitutionally permissible. In justifying the administrative review, the Court held that the prisoner's liberty interests must be balanced against the state's "legitimate penological interests" in maintaining safety (Ref. 41, p 494). States, of course, are free to require judicial review beyond this minimum standard imposed by the Supreme Court.

Unlike the numerous studies of involuntary medication in the community, there has been no published study of involuntary medication of mentally ill inmates. Our study, the first of its kind, investigates the effect of involuntary antipsychotic medication on prison inpatient days and disciplinary charges in mentally ill New Jersey state prisoners.

Methods

The study was approved by both the New Jersey Department of Corrections (NJ DOC) Departmental Research Review Board and the University of Medicine and Dentistry of New Jersey Institutional Review Board (UMDNJ, now Rutgers University).

NJ DOC Administrative Code prohibits conducting experiments on inmates. Therefore, a placebo control group is not allowed. Instead, in this study, inmates were used as their own before-and-after control.

NJ DOC policy provides for the nonemergency, involuntary medication of a mentally ill inmate who refuses medication and is a danger to self or to others; is unable to care for himself, such that his health and safety are endangered (i.e., is gravely disabled); or is incapable, without medication, of participating in a treatment plan that will provide a realistic opportunity for improving his condition. Merely disruptive inmates may not be involuntarily medicated. The NJ DOC policy follows the *Harper* standard in the provision of administrative review of an application for involuntary medication, prepared by the treating psychiatrist. The involuntary medication hearing is presided over by an administrative committee consisting of a nontreating psychiatrist, a nontreating psychologist, and a prison administrator. A majority, including the psychiatrist, must approve the application for involuntary medication to proceed. The treating psychiatrist may order oral or long-acting depot medication. If the psychiatrist orders

the former, then the psychiatrist also orders an intramuscular backup to be forcibly administered if the patient refuses the oral medication. NJ DOC policy provides for an initial 30-day duration of involuntary medication. Subsequent applications and approvals may be for up to 180 days.

One hundred thirty-three inmates who were placed on nonemergency involuntary antipsychotic medication for at least one year, from January 2005 through December 2009, were identified from their NJ DOC electronic medical records and an inmate management database (ITAG). Identifying information was protected through encryption. During the period in which inmate-patients were studied, mental health care was provided by University Correctional Health Care (UHC), a branch of UMDNJ. This study was unfunded and was undertaken as a quality improvement initiative by UHC.

Study data included inmates' age, race, sex, psychiatric diagnoses, and medication. For the one year before involuntary medication (weighted for the proportion of the year the inmate was incarcerated), the investigators counted: the number of prison inpatient days for each inmate; the number of inmates with any disciplinary charge; and the instances, number, and type of disciplinary charges for each inmate. The same data were counted for the year during involuntary medication. Diagnoses were made by staff psychiatrists in the course of routine treatment. The investigators did not determine the specific reason an inmate was placed on involuntary medication.

Weighting of inpatient days, number of inmates with any charge, number of incidents, and number of charges in the year before involuntary medication were manipulations to equalize an inmate's time before placement on involuntary medication with that of one year of involuntary medication. That is, many inmates arrived in the prison and were placed on involuntary medication before they had an opportunity to spend a year in prison without involuntary medication. If, for example, an inmate was in prison for only six months and accumulated one disciplinary charge before placement on involuntary medication, the number of charges before involuntary medication was doubled to two. In a similar fashion, the average inmate was imprisoned only 300 days before placement on involuntary medication. The raw number of inmates with any disciplinary charge before involuntary medication was therefore multiplied by 1.22 (365 days/300 days).

Prison inpatient days referred to the segregated mental health units within the prison where the more seriously mentally ill inmates were evaluated and treated with the goal of return to general population. Types of charges were asterisked and nonasterisked charges, which were the NJ DOC's terms for serious and less serious charges, respectively. Asterisked charges ranged from conduct that disrupts to explicit violence such as assault. Nonasterisked charges represented various nonviolent charges. Investigators did not ascertain the names of the individual charges.

A paired t test determined whether the weighted mean number of prison inpatient days in the year before involuntary medication was the same as the mean number of prison inpatient days in the year during involuntary medication.

Fisher's exact test determined whether the weighted proportion of inmates with any charge before involuntary medication was the same as the proportion during involuntary medication. Paired t tests determined whether the weighted mean instances and number of charges in the year before involuntary medication were the same as the mean instances and number of charges in the year during involuntary medication. Given that the investigators performed these three (i.e., multiple) tests of disciplinary charges and that these tests are presumptively positively correlated, the investigators performed a Hochberg test of multiple comparisons in which the raw probabilities (p) of the three tests were adjusted to reduce the possibility of a Type I error (i.e., incorrect rejection of the null hypothesis).

An unpaired t test determined whether the mean number of inpatient days while on involuntary medication was significantly different between inmates with no charges and inmates with any charges. Fisher's exact test determined whether the percentage of inmates on depot involuntary antipsychotic medication was significantly different between the inmates with no charges and those with any charges. Binomial analysis determined whether the racial composition of patients receiving involuntary medication was similar to the racial composition of the overall inmate population in the NJ DOC. The value used for the expected probability of a given race was the actual proportion of that race in the overall NJ DOC population. Given the history in the community of overdiagnosis of schizophrenia in black patients, investigators conducted this test to ascertain whether there might be racial bias in involuntary medication in the NJ DOC.

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Table 1 Inpatient Days and Disciplinary Charges Before and During Involuntary Medication

	Before Involuntary Medication Protocol	During Involuntary Medication Protocol	<i>p</i>
Weighted average annual prison inpatient days	137	149	NS
Weighted mean number of inmates with charges	79	61	<.05
Weighted mean instances of charges per inmate	2.1	0.82	<.05
Weighted average number of charges per inmate	3.0	1.1	<.05

NS, nonsignificant.

Results

No statistically significant difference was noted in inmates' mean number of prison inpatient days in the year before versus the year during involuntary medication (Table 1).

Fewer inmates incurred any serious disciplinary charges during the year of involuntary medication relative to the year before. In addition, there were decreases in the mean number of instances and the mean total number of charges per inmate (Table 1).

The mean number of inpatient days while on involuntary medication was not different between the inmates with no charges and the inmates with charges, demonstrating that an increased number of inpatient days does not explain the inmates who received no charges during involuntary medication (Table 2).

During the period of involuntary medication, a greater percentage of inmates who incurred charges received depot medication compared with the percentage of those who incurred no charges and received depot medication. This difference approached but did not reach statistical significance ($p < .06$) and demonstrates that depot medication (as opposed to oral medication) does not account for the inmates with no offenses during involuntary medication (Table 2).

Table 2 Inpatient Days and Depot Medication Among Patients With and Without Disciplinary Charges

	Patients With Any Charge (<i>n</i> = 61)	Patients With No Charge (<i>n</i> = 72)	<i>p</i>
Average annual prison inpatient days during involuntary medication	147	152	NS
Percentage of patients on depot involuntary medication	54	36	NS

Table 3 Race of Involuntarily Medicated Patients and Overall DOC Inmate Population

Race	Inmate ethnic population on Involuntary Medication Protocol (%)	NJ DOC Whole Inmate Population by Race/Ethnicity	<i>p</i>
Black	67	61	NS
Hispanic	9.8	18	<.01
Asian	1.5	0.5	<.05
White	18.1	20	NS

NS, nonsignificant.

The proportion of white patients and black patients on involuntary medication was similar to the racial composition of the overall inmate population in the NJ DOC (Table 3). Hispanic and Asian patients were placed on the protocol at a significantly greater proportion than their proportion in the overall NJ DOC population. The racial composition of subjects does not equal 100 percent, as there was a small group of "other" inmates who were not included in this study.

More than 90 percent of the patients had a psychotic disorder or bipolar disorder with psychotic features as the diagnosis supporting involuntary medication (Table 4). Schizophrenia and schizoaffective disorder comprised 70 percent of the qualifying diagnoses. Forty-one percent of the inmates had comorbid personality disorders, with antisocial personality disorder (ASPD) being the most frequent of these diagnoses (Table 4).

Table 4 Diagnoses of Inmates Placed on Involuntary Medication

Diagnosis	<i>n</i>	%
Psychotic disorders		
Schizophrenia	50	37.0
Schizoaffective disorder	39	29.0
Psychotic disorder NOS	22	16.0
Schizophreniform disorder	5	4.0
Delusional disorder	4	3.0
Psychotic disorder secondary to general medical condition/head trauma	2	1.5
Brief psychotic disorder	1	1.0
Bipolar with psychotic features	2	1.5
Bipolar disorder	10	7.0
Total	135	100.0
Personality disorders		
ASPD with borderline features	2	4.0
ASPD with narcissistic features	1	2.0
ASPD	31	56.0
Personality disorder NOS	19	34.0
Schizotypal personality disorder	2	4.0
Total	55	100.0

ASPD, antisocial personality disorder.

Discussion

Involuntary medication, whether in prison or elsewhere, is controversial because of its coercive nature, the curtailment of civil rights, and the risk that patients will have side effects from the medications. The NJ DOC policy on nonemergency involuntary medication follows the standard set by the Supreme Court in *Washington v. Harper*.⁴¹ This administrative review conducted by persons who work within a DOC is arguably a lower standard than judicial review. However, administrative review allows quicker initiation of involuntary medication in a population where violence is common and potentially lethal. In the NJ DOC, assuming an application for involuntary medication is approved, the time from application to medication is typically five days. The authors have experienced the alternative, judicial review, in New York State where approval of involuntary medication takes weeks to months. During that interval, psychotic, disorganized, and unmedicated patients often require seclusion and restraint and subject themselves, staff, and other patients to injury. Rapid administration of medication is not merely a matter of convenience for the doctors.

At the same time, if involuntary medication is to be administered, the medication should achieve what it purports to achieve. Inpatient days were chosen as a proxy of improved functioning because they represent serious deterioration in mental illness and high cost. Inpatient days are also measurable in a naturalistic, retrospective study; psychiatric symptoms are not. Disciplinary charges represented a proxy for violence, albeit an imperfect one. At the very least, disciplinary charges represented rule-breaking behavior and thus were meaningful in a correctional institution. Disciplinary charges are also easily measured.

The principal findings of this study were that mentally ill inmates placed involuntarily on antipsychotic medication had no change in the mean number of inpatient days and that fewer inmates received any charge while on involuntary medication. In addition, the inmates had statistically significant decreases in instances and total number of charges while receiving involuntary medication.

Neither increased inpatient days nor depot medication explains the inmates who incurred no charges while on involuntary medication. On the contrary, inmates with any charge while receiving involuntary medication were more likely to be given depot medication. The investigators had no hypothesis to explain

this matter. Depot medication has been shown to reduce hospitalization in the community.⁴² In prison, however, depot medication may be prescribed for those inmates who have a greater tendency toward violation of rules, including refusal of oral medication. The result in this study supports this latter proposition.

Several reasons could account for the failure of involuntary medication to reduce prison inpatient days. The unstated practice in the NJ DOC has been to move inmates onto a prison inpatient unit upon commencement of involuntary medication and to err on keeping the patients there for the security of both the inmates and others. There is no external pressure, as there is in a community hospital that is subject to an insurance company's review, to discharge patients from the NJ DOC's prison inpatient units. Inmates enjoy the relative security and enhanced programming and attention offered on the inpatient units. Indeed inmates, both mentally ill and not, occasionally feign symptoms to secure placement on an inpatient unit and avoid release from the same. Thus, we doubt the generalizability of this finding to the community.

This study has several significant limitations, foremost of which is the lack of a placebo control and randomization to treatment and nontreatment conditions. NJ DOC Administrative Code prohibits such experimentation on inmates. Even if a placebo control were allowed by Administrative Code, we doubt that the NJ DOC research review board would allow such a condition because of security concerns. Another significant limitation is the weighting of variables for the proportion of the year that the inmate was incarcerated before involuntary medication was administered. Although a group of serious charges was studied, these charges did not necessarily involve violence as they ranged from the vague and potentially mild (such as conduct that disrupts) to the explicitly violent (such as assault). Correctional staff may have been lenient toward offenders who were chronically mentally ill and who were on involuntary medication, thereby reducing their charges. The number of inmates on the inpatient units and their movements between units was not studied. Personality disorders were a confounding variable; 41 percent of inmates had personality disorders, primarily antisocial. This comorbid condition was not studied, but may have interacted with the effect of involuntary medication. Finally, the study did not include the reason for an individual's placement on the involuntary medication protocol. Specifying the rea-

son could have identified subgroups of inmates who were able to return to general population sooner.

This study is the first in the correctional health literature that puts to the test some of the goals of involuntary psychiatric medication. As the first study of its kind, it has significant limitations. Future studies on involuntary medication in prison can extend and clarify the initial insights offered by this study.

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