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## Race, Quality of Care, and Antipsychotic Prescribing Practices in Psychiatric Emergency Services

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### Abstract

**Objective**—The study examined whether the prescription practices of clinicians in psychiatric emergency services differed for African-American patients. Prescription of antipsychotic medications and its relation to quality of care was a particular focus.

**Methods**—Data from 442 independently observed evaluations of patients in psychiatric emergency services were examined using multivariate analyses. The observations were made during a five-year period at four urban general hospitals in California.

**Results**—Clinicians in the four emergency services, most of whom were Caucasian, prescribed more psychiatric medications to African Americans than to other patients and devoted significantly less time to their evaluations. African Americans received more oral doses and more injections of antipsychotic medications, and the mean 24-hour dosage of antipsychotics (1,321 milligrams) was significantly higher than for other patients (825 milligrams). The tendency to overmedicate African-American patients was lower when clinicians' efforts to engage the patients in treatment were rated higher.

**Conclusions**—The results highlight the importance of efforts to engage African Americans in the treatment process and the need for clinical skills and training to help bridge cultural distances.

Little empirical research has focused on prescription practices in psychiatric emergency services (1,2), especially after publication of DSM-III. A high level of use of psychiatric emergency services has been documented among African Americans. The combination of these two factors makes it important to know whether prescription practices in emergency services differ by racial or ethnic group. Although Asians appear to require lower dosages of antipsychotic medications than Caucasians for therapeutic effectiveness, no indications have been found of differential dosage needs of Caucasians and African Americans (5–7).

Dosage recommendations for antipsychotic drugs in the emergency service vary widely, depending on the disorder, the severity of symptoms, and the source of the recommendation. For example, several different maximum 24-hour dosages have been recommended for

haloperidol, the most commonly used antipsychotic agent. Although some studies have suggested a 15 mg dose (8), others have recommended 20 mg (9), 50 mg (10–12), 60 mg (2,13), 100 mg (14–16), and 120 mg (17–18). Although some consensus has emerged that small to moderate doses are as effective as larger ones in ameliorating psychotic symptoms (9,13,19–22), the wide range of recommended dosages reflects the range of opinion over the past decade about the use of higher doses to effect rapid behavioral control (9,10,13,16,23).

Optimally, medication practice should be guided by various indicators of a patient's need observed during the assessment and treatment process. Psychiatric medications are used to control symptoms as well as behavior. Thus in making decisions about medication, the clinician considers the patient's psychiatric status, behavioral presentation in relation to the involuntary treatment criteria of danger to self or others and grave disability, psychiatric history, and need for restraint.

Prescription practices are also influenced by the overall quality of care available in the particular emergency service (24). Artfully engaging patients in the assessment and treatment process at the level at which they are capable of being involved has been found crucial to ensuring appropriate medical care (25) and has been recommended during evaluations in the psychiatric emergency service (26). Race can influence communication, and thus it may affect clinical engagement.

This study investigated differential treatment of African Americans with antipsychotic drugs in psychiatric emergency services. We examined both prescription practices and the circumstances that might affect equitable treatment of African Americans in the emergency service. We considered the interaction of treatment engagement and racial or ethnic status. We also considered the influence of time limitations on the clinician performing the evaluation and the effect of engagement and time on the completion of tasks necessary to conduct a high-quality evaluation. Although the study focused on antipsychotic agents, prescription of other psychiatric medications such as anticholinergics, anxiolytics, antidepressants, and lithium was also examined.

## Methods

### Sample and procedures

The evaluations of 459 patients who visited psychiatric emergency rooms in four urban public general hospitals in California were observed by trained researchers. Of 459 observation attempts over a five-year period (1981 to 1986), 17 (4 percent) were not completed, resulting in a sample of 442 patients.

No formal sampling procedures were used. Any patient was included in the sample who had not yet been seen by a clinician and was available when a researcher and a staff clinician were available to take a case. Evaluations were observed, in an apparently random manner, on all days of the week, during day and evening hours. The number of patients evaluated per day in the emergency service on the days of the observations ranged from two to 36.

The researcher accompanied the emergency room clinician and the patient through the evaluation from the time of the patient's arrival until a disposition decision was made and independently assessed the case. As is typical in an emergency service, there were often times during the evaluation when the patient was simply waiting. The observer followed the lead of the clinician. Whenever the clinician had direct contact with the patient or with others about the patient, so did the observer.

The observer also reviewed charts and other written material available to the clinician. The observer coded the case using descriptive rating instruments on the basis of information gathered by the clinician. The clinician was at no time aware of the contents of the researcher's rating schedules, and the researcher did not see the clinician's Global Assessment Scale ratings during the observation.

Observers were clinical social workers and psychologists with experience assessing severely disturbed adults. Each observer was tested for acceptable interrater reliability on key study instruments before he or she began independent observations. After disposition, another researcher reviewed the individual case records to document the medications received in the emergency service.

## Measures

**Medication practices**—All measures related to medications received in the emergency service; for example, take-home prescriptions were not included. Measures included receipt of psychiatric medication (coded 1=receipt, 0=nonreceipt); number of doses of psychiatric medications; receipt of antipsychotic medication (coded 1 = receipt, 0 =nonreceipt); number of antipsychotic doses received; number of antipsychotic injections received; and the milligram amount in chlorpromazine equivalents of the 24-hour dosage of antipsychotic medication.

Dosage amounts of oral antipsychotic agents were converted to milligrams of chlorpromazine using the ratios described by the American Medical Association (AMA) (9). The fluphenazine decanoate dosage was converted using the formula described by Schooler (27), and more recently by Inderbitzin and associates (28); we assumed a two-week interval between injections. Dosages of short-acting injectable antipsychotics were converted using the AMA ratios multiplied by two, reflecting their greater bioavailability (15,29,30).

**Reasons for medication**—The Three Ratings of Involuntary Admissibility scale (TRIAD) (31) was used to measure a patient's dangerousness. The scale has an established and replicated interrater reliability (32) (Pearson  $r = .89$  for the danger-to-self score,  $.94$  for the danger-to-others score,  $.77$  for the grave disability score, and  $.89$  for the total TRIAD score). The validity of TRIAD has also been established based on its ability to correctly predict case dispositions in psychiatric emergency services (33–35).

Global Assessment Scale (GAS) scores represented the emergency room clinician's assessment of the overall severity of psychosocial disturbance. The scale has been shown to be highly reliable (36). Patients were diagnosed as having a psychotic disorder based on *DSM-III* criteria for several axis I diagnoses (37) (coded 1=present; 0=absent).

The number of previous visits to this psychiatric emergency service was documented as an indicator of previous psychiatric history. Use of physical restraint during the visit was noted as an indicator of perceived need for behavioral control (coded 1= restraint; 0=no restraint).

**Service**—Time in the psychiatric emergency service was measured as the number of hours from entry until discharge; time over 24 hours was recorded as 24 hours. Engagement in treatment was measured by the Art of Care Scale (38). The observer used it to rate the clinician's attempts to engage the patient in a collaborative interaction, elicit information, include the patient in planning, and attend to and respond empathically to the patient's feelings at a level appropriate to the patient's level of functioning. This additive index was converted to a proportion of optimal efforts to the patient (range, 0 to 1).

The combined effects of treatment engagement and race were measured by an interaction term defined as the product of the Art of Care Scale score and African-American status (1 = African American, 0=other race).

A measure of optimum time for each evaluation was made. The measure reflected the difference between the time allocated to the evaluation and the average time to complete a quality evaluation (38). Patients' scores on this measure ranged from  $-2.16$  to  $.84$ . A negative score implies that the clinician conserved time at the expense of quality; a positive score indicates that the clinician spent more time than was required on average for a quality evaluation. A score of 0 means that the evaluation was done in the amount of time it takes to do a quality evaluation.

## Analysis

Bivariate statistics (chi square and t tests) were used to assess differences by racial group. Analysis of covariance models were constructed using least-squares regression or logistic regression to investigate, within a multivariate context, the influence of race on five prescription-practice indicators. Measures of the reasons for medicating and key service characteristics described above were included as controls in the multivariate analyses. The primary covariate was race, specified as African American versus all other racial or ethnic groups. Interactions between race and each of the other service variables were investigated within the models. Only the interaction between the Art of Care Scale and race was statistically significant; therefore, other interaction terms were removed, and only this interaction is reported.

## Results

### Characteristics of patients, clinicians, and settings

Of the 442 patients who completed observed evaluations, 58 percent ( $N = 256$ ) were Caucasian, 24 percent ( $N=107$ ) were African American. 11 percent ( $N =47$ ) were Hispanic, 2 percent ( $N=10$ ) were Asian, and 5 percent ( $N =22$ ) were from other racial or ethnic groups.

The demographic characteristics of the sample are those of a marginal group, one at high risk of involvement with systems of health care, social services, and criminal justice. Most

patients (79.7 percent) were under 45 years old, and half (47.3 percent) had never married. More than half (55.4 percent) were disabled, and most were brought to the emergency service involuntarily (85.8 percent). More than half (59.5 percent) were male.

Of the 113 emergency service clinicians who evaluated the patients, 80 (71 percent) were psychiatrists, 17 (15 percent) were nurses, eight (7 percent) were social workers, three (3 percent) were psychologists, and five (4 percent) were other professionals, paraprofessionals, or unlicensed professionals in training. The clinical experience of these clinicians ranged from none to 34 years (mean±SD= 9.14±7.73 years). Of the 442 patients evaluated, 327 (74 percent) were examined by clinicians with at least two years of experience in the psychiatric emergency service. Of the 113 evaluators, 99 (88 percent) were Caucasian, five (4 percent) were African American, five were Asian, two (2 percent) were Hispanic, and two were from other ethnic groups.

Few differences were found in demographic characteristics between African-American patients and others. African Americans were significantly more likely to be living with family or friends than in other arrangements (43 percent versus 27 percent; 12.3, df=4, p=.01).

### Medication indicators, service variables, and medication practices

**Medication indicators**—Sixty percent of the 442 patients (N = 265) were diagnosed as having a psychotic disorder, and 9 percent (N =40) had to be restrained. The mean± SD GAS score was 34.8±13.5, which indicated some impairment in reality testing or communication or major impairment in several areas such as work or school, family relations, judgment, thinking, or mood. The mean±SD score on the TRIAD scale of dangerousness was 3.55±2.25, which indicated that the average patient in the sample would be admissible to the hospital as either dangerous to self or others or gravely disabled. Patients had visited the emergency service a mean ± SD of 2.97±6.46 times in the past (range, 0 to 71 times). African Americans did not differ from others on these medication indicators.

**Service indicators**—Based on norms established previously (38), patients in the sample received either a good or very good evaluation according to scores on the Art of Care Scale (mean scale score=.66). Using the same previously set norms (38), the time allocated to evaluations (mean ± SD time=7.39±7.51 hours) and the optimum time indicator (mean score=-.62) did not differ significantly from those required to perform a quality evaluation.

Only one service indicator, the optimum time measure, differed significantly for African Americans. Clinicians spent significantly less time on the tasks necessary for evaluation when evaluating African Americans compared with other patients (-.74 versus -.58; t=-2.4, df=441, p< .02).

**Medication practices**—Of the 442 patients, 45 percent (N = 199) received a psychiatric medication in the emergency service, The mean ± SD number of medications received was 1.30±2.32. Thirty-eight percent of the patients (N = 168) received an antipsychotic agent. Among the antipsychotics used were haloperidol (63 percent), fluphenazine hydrochloride

(11 percent), thiothixene (10 percent), thioridazine (7 percent), chlorpromazine (5 percent), perphenazine (5 percent), trifluoperazine hydrochloride (4 percent), fluphenazine decanoate (4 percent), and loxapine (.6 percent).

Of the antipsychotic agents given, 84 percent were high potency and 18 percent were low potency in terms of dose-effect relationships (39). During the time spent in the emergency service, patients who received antipsychotic medications received a mean±SD of 2.4±2.3 oral doses and .42 ±.9injections. The mean 24-hour dose in chlorpromazine equivalents was 973±880 milligrams.

African Americans received more psychiatric medications than other patients (1.92 versus 1.13 medications; df=441, p<.001). They were also more likely to receive an antipsychotic agent (48 percent versus 35 percent; odds ratio=1.67; 95 percent confidence interval= 1.08–2.60, p<.03). Twenty-four-hour dosages in chlorpromazine equivalents were significantly higher for African Americans than for other patients (1,821 versus 825 milligrams; t=3.5, df= 168, p< .001). In addition, African Americans received a greater number of antipsychotic doses (3.1 versus 2.2 doses; t=2.4, df=168, p<.02). Although African Americans more frequently received fluphenazine decanoate (8 percent versus 2 percent;  $\chi^2$  =3.83, df=1, p<.05), they did not receive a significantly higher number of antipsychotic injections compared with other patients.

### Factors affecting prescription practices

As shown in Table 1, when reasons for medicating and service variables were controlled, African-American status was a significant factor in all prescription practices, except for receipt of an antipsychotic medication. African Americans were significantly more likely to receive more psychiatric medications, antipsychotic doses, and injections of antipsychotics and to receive a higher 24-hour dosage of antipsychotics. On average, compared with other patients, African Americans were likely to receive one additional dose of psychiatric medication, one additional antipsychotic dose, and an additional half dose of antipsychotic medication by injection.

As the multivariate model in Table 1 shows, there was a significant interaction between being African American and the Art of Care Scale score, which was associated with the amount of antipsychotic medication received. When an African American was evaluated by a clinician who received a maximum score on the Art of Care Scale for that evaluation, the mean total 24-hour dosage of antipsychotic medication, adjusted for the influence of control variables, was 921 milligrams, compared with 786 milligrams (chlorpromazine equivalents) for other patients.

For an African-American patient, when the Art of Care Scale score reflected the sample mean (mean= .63), the adjusted 24-hour dosage was 1,193 milligrams. When the scale score was in the lower quartile (mean = .33), the patient received 1,415 milligrams of antipsychotic medication, compared with 786 milligrams for non-African-American patients.

## Discussion and conclusions

In the four psychiatric emergency services studied, prescription practices were influenced by race. African Americans received more psychiatric medications, more doses of antipsychotic medications, and more injections of antipsychotics, as well as higher 24-hour dosages of antipsychotics. These findings could not be attributed to a greater likelihood of African-American patients' being brought in to the service on an involuntary hold, which might contribute to clinicians' perception of greater dangerousness, nor to other medication indicators.

One explanation for these findings may be increased interpersonal distance between emergency service clinicians and their patients. Results using the Art of Care Scale suggest that engaging African-American patients in the evaluation and treatment process may help reduce emergency service clinicians' tendency to overmedicate them. When clinicians in our study made efforts to engage African-American patients in the evaluation, the dosage of antipsychotic medication decreased; when the scale score approached optimal engagement, the dosage prescribed was closer to that for non-African-American patients.

This finding highlights the importance of emergency service clinicians' engaging African Americans in the treatment process. Engagement can be time consuming; extra effort is needed to communicate with patients who seem mute and unresponsive or dangerous to others. In an era of cost cutting and when emergency service staff are under increased time pressures, such efforts may appear wasteful. However, treatment engagement—particularly engagement of African-American patients—is clearly an important factor influencing a more judicious use of medication.

Although these results are clearly limited to the psychiatric emergency service, they may have more general practice implications. We live in a time when investment in the clinician-patient relationship is economically disfavoured. In addition, the perception that young and poor African Americans engage in behaviors that place themselves and others at risk can be seen as a further reason for limiting clinician-patient relationships. The findings of this study reinforce the importance of this relationship in practice. Reaching across racial and ethnic barriers, as well as social and behavioral barriers, may be a bridge to better practice.

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**Table 1**

Models of least-squares and logistic regression analyses of the influence of African-American status on five indicators of prescription practices in the psychiatric emergency service<sup>1</sup>

Independent variable	N of psychiatric medications		Receipt of antipsychotic agent		N doses of antipsychotic		N injections of antipsychotic		24-hour dosage of antipsychotic	
	Beta	p	Odds ratio	p	Beta	p	Beta	p	Beta	p
African American	.99	<.005	1.27	.71	1.21	.02	.54	.04	862	<.001
African-American status by Art of Care Scale score	-.25	.65	.88	.89	-.56	.50	-.57	.18	-722	.05
R <sup>2</sup> or percent correctly predicted	R <sup>2</sup> =.39		%=.74		R <sup>2</sup> =.35		R <sup>2</sup> =.14		R <sup>2</sup> =.22	

<sup>1</sup>The model controlled for medication indicators (presence of a psychotic disorder, severity of psychiatric disturbance [GAS score], dangerousness, psychiatric history, and whether physical restraints were used) and service variables (hours spent in the emergency service, clinician's efforts to engage the patient in treatment, and whether optimum time was spent in the evaluation). Analyses used least-squares regression, except for the receipt of antipsychotic medication, for which logistic regression was used. N = 442 for number of psychiatric medications and receipt of antipsychotic agent; for other dependent variables, N = 169 (number of patients who received an antipsychotic agent).