# Involuntary Medication Treatment for Competency Restoration of 22 Defendants With Delusional Disorder

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There are no published data on the rates of competency restoration for adjudicated incompetent felony criminal defendants diagnosed with delusional disorder. A retrospective record review was conducted of all incompetent defendants with the principal diagnosis of delusional disorder who had undergone involuntary medication treatment for competency restoration during a 13-year period at a federal psychiatric prison hospital. Of the 181 defendants who were involuntarily medicated for competency restoration during this period, 22 had delusional disorder. Seventeen (77%) of the defendants with delusional disorder improved sufficiently for the forensic evaluators to opine that they had been restored to competency after involuntary treatment with antipsychotic medication. These results are similar to the published data of the relatively high rates of competency restoration for incompetent defendants with diagnosed schizophrenia.

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In June 2003, the U.S. Supreme Court in *Sell v. U.S.*[1] ruled that federal judges must review evidence before authorizing involuntary medication to restore the competency of incompetent, nondangerous pretrial defendants. In April 2005, the Fourth Circuit Court of Appeals extended judicial oversight of the treatment process in *U.S. v. Evans*[2] by mandating that a detailed treatment plan must accompany the government's motion to medicate an incompetent, nondangerous pretrial defendant involuntarily under the *Sell* criteria. The Fourth Circuit emphasized that the government must demonstrate that the proposed treatment plan is substantially likely to render the defendant competent to stand trial, "as applied to this particular defendant." In *U.S. v. Gomes*[3] the Second Circuit affirmed the decision of the trial court that psychiatric testimony predicting a 70 percent rate of restoration of competency met the criteria in *Sell v. U.S.* of being "substantially likely" to restore the defendant to competency. This standard has been accepted without dispute in other federal appellate courts.[4,5]

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As described by Fennig and colleagues,[6] delusional disorders have been recognized since antiquity, but the nosological status of delusional disorder as a separate entity has been the subject of debate since Kraeplin first described his concept of paranoia. Three viewpoints have evolved, with the first two being that delusional disorder is a variant of schizophrenia or mood disorder. The third viewpoint is Kraeplin's original position that delusional disorder is a variant of psychosis distinct from both schizophrenia and mood disorder. An influential article published in 1980 by Kendler[7] supported Kraeplin's position, although Kendler noted that an alternative interpretation of the data was consistent with the view that delusional disorder is "mild" schizophrenia that does not evolve into "real" schizophrenia. Two years later, Kendler reviewed additional demographic data and concluded that delusional disorder did not closely resemble schizophrenia or affective illness.[8] The Kraeplinian position has been incorporated into the diagnostic classification system of the Diagnostic and Statistical Manual of Mental Disorders, DSM-III-R and the DSM-IV. However the probable overlapping boundary of delusional disorder with "good-prognosis" schizophrenia is implied in the DSM-IV-TR, which describes paranoid schizophrenia as having the best prognosis of any of the schizophrenias, and notes

that delusional disorder may be particularly difficult to distinguish from the paranoid type of schizophrenia.[9] Like other mental disorders, the symptoms of delusional disorder are probably representative of a genotypically heterogenous group of disorders, which may have different responses to medication.

The lack of empirical data on the rate of treatment outcome for defendants with a diagnosis of delusional disorder has been well described in the forensic psychiatric literature.[10] Empirical research on the longitudinal course and treatment response of delusional disorder has been hampered by multiple factors. Individuals with delusional disorder typically do not view themselves as mentally ill, are quite unlikely to seek mental health treatment voluntarily, and are even less likely to agree to be enrolled in placebo-controlled studies of psychotropic medication. These individuals usually maintain a high level of social functioning apart from the behavioral impact of the delusional belief, which often precludes them from being subjected to civil involuntary psychiatric treatment. Even if individuals with delusional disorder are arrested and detained for a bizarre or dangerous act stemming from their delusions, they typically reject the recommended treatment with psychotropic medication due to their lack of insight into their condition and their distrust of mental health professionals. Delusional disorder is also much less common than other mental disorders such as schizophrenia. According to the DSM-IV-TR, the estimated prevalence of schizophrenia among adults is in the range of 0.5 to 1.5 percent, but the estimated prevalence of delusional disorder is approximately 0.03 percent. Hence, in a community of 100,000 individuals, between 500 and 1,500 persons would have the diagnosis of schizophrenia, but only 30 would have delusional disorder. The relatively low incidence of delusional disorder, coupled with the relatively preserved levels of social functioning of deluded individuals compared with individuals with other mental disorders, does not present a compelling reason for government agencies or pharmaceutical corporations to fund extensive research on this condition.

As a result, the published scientific database on delusional disorder is very limited and primarily consists of brief case reports or naturalistic follow-up of small series of patients. In 1995, Munro and Mok[11] described the available published data on the long-term course of delusional disorder, reporting on 209 cases identified from a review of 1000 articles and letters to the editor. The average follow-up of cases was 22 months, with a range of several days to 36 years. Pimozide was the single most commonly used drug, with 68.5 percent of patients rated as fully recovered and 22.4 percent rated as partly recovered. The usual dosage range was between 2 and 16 mg daily. Patients treated with other first-generation antipsychotic drugs demonstrated a less robust response, with full recovery in 22.6 percent of cases and partial recovery in an additional 45.3 percent. Despite acknowledging the general low quality of evidence in this database, the authors concluded that delusional disorder has an optimistic treatment outlook, with 80.8 percent of patients showing total or partial recovery.

In 1998, Silva and colleagues[12] described the results of a double-blind, six-week trial of pimozide in seven outpatients with delusional disorder. The age ranged from 29 to 60 years, with a previous duration of illness from 6 to 12 years. After a placebo period of a minimum of two weeks, each patient was prescribed pimozide 2 or 4 mg daily during the first week, with the dose increased, according to tolerance, up to 12 mg daily. The average dose of pimozide at the end of the second week of treatment was 4.56 mg per day and during the sixth week had increased to 6.57 mg per day. Medication compliance in each patient was confirmed by weekly serum pimozide levels. At the end of six weeks, there was no significant clinical improvement in any of the seven patients. The authors concluded that the neurobiology of delusional disorder may be different from other disorders such as schizophrenia, in which delusion may also be prominent.

In 2000, Stephens and colleagues[13] described the long-term outcome of delusional disorder in a time before the discovery and widespread implementation of antipsychotic medication. The records of 239 patients who had a diagnosed paranoid state and were hospitalized between 1913 and 1940 were reviewed. The chief results of the article were focused on a subgroup of 60 patients, who retrospectively met the DSM-IV criteria for the diagnosis of delusional disorder. This group consisted of 57 patients for whom at least a five-year follow-up was adequately documented and three patients who committed suicide less than one year after discharge. (The authors considered suicide to be the ultimate follow-up.) Of this group, 27 percent were rated as recovered, 22 percent

were improved, and 52 percent were unimproved. These poor outcomes for patients with delusional disorder were better than those for patients with schizophrenia, who were rated 3 percent recovered, 23 percent improved, and 74 percent unimproved. The outcome for delusional disorder improved in subsequent years, as previously reported by the same authors, who described 27 patients retrospectively diagnosed with delusional disorder who were discharged from the same hospital between 1948 and 1959. In the more recent group of patients with delusional disorder, 22 percent were rated as recovered, but only 26 percent were rated as unimproved. The authors attributed this improved outcome in delusional disorder to the beneficial effects of antipsychotic medication.

In 2002, Morimoto and colleagues[14] described their efforts to test the hypothesis that a hyperdopaminergic state in the brain is responsible for producing paranoid symptoms. Data for antipsychotic response was obtained from 11 patients with delusional disorder who were admitted to the authors' psychiatric ward, having their first delusional episode without previous treatment with antipsychotic medication. The comparison sample consisted of 15 patients with schizophrenia who were admitted to the psychiatric ward during the same period, who presented with their first psychotic episode. A relatively smaller dose of haloperidol (4.7 per day) was effective in diminishing completely delusional symptoms within a shorter period (65 days) in delusional disorder compared with schizophrenia (12.7 per day and 104 days). In another sample, eight delusional patients were treated with a small dose of haloperidol (2.7 per day). After eight weeks of treatment, the delusion and hallucination rating scores improved markedly, and five of eight patients went into complete remission. The authors concluded that delusional disorder, especially the persecution type, includes a "dopamine psychosis" and that polymorphism of the DRD2, DRD3, and/or TH gene is part of the genetic basis of the hyperdopaminergic state that produces paranoid symptoms.

Summarizing the available data on delusional disorder, Fennig and colleagues[6] wrote "the clinical course and prognosis are unclear, although some reports of successful treatment are present in the literature." Nonetheless, the empirically unsupported opinion that "Delusional Disorder is notoriously treatment resistant" continues to be asserted in the forensic psychiatric literature.[15]

The lack of empirical data on the treatment outcome of delusional disorder was highlighted in *Sell v. U.S.*[16] There was no dispute that defendant Sell was incompetent due to delusional disorder. Despite years of experience in an inpatient forensic hospital in the Federal Bureau of Prisons (BOP), the government's psychologist and psychiatrist had limited personal experience with treating incompetent defendants with this diagnosis. The government psychologist testified that he had worked with two patients who had delusional disorder and had been treated with antipsychotic medication, one of whom was restored to competency. The government psychiatrist testified that he had treated four patients with delusional disorder in an institutional setting, three of whom were restored to competency. One of these four patients had been restored to competency with involuntary treatment, had relapsed, and then was restored a second time. In contrast, the defense psychiatrist had opined, "there is no evidence that neuroleptics are beneficial for patients with delusional disorder." The defense also offered a case report by a different BOP forensic psychologist, which contained the opinion that "[d]elusional disorder does not typically respond to pharmacological intervention or psychotherapy." The rate of competency restoration following involuntary medication treatment of incompetent defendants with schizophrenia is much less controversial, with a restoration rate of 87 percent described by Ladds and colleagues[17] in their sample of 45 cases.

The present study was undertaken in an effort to provide some empirical data to assist mental health professionals in offering clinical recommendations and forensic opinions on the expected treatment outcome for incompetent defendants diagnosed with delusional disorder.

## Background

After a federal judge orders a period of treatment for restoration of competency for an incompetent pretrial defendant, federal statute requires the defendant to be committed to the custody of the Attorney General pursuant to the provisions of Title 18, United States Code, Section 4241(d). The defendant is typically remanded to the custody of the BOP and transferred to a Federal Medical Center (FMC), which is a federal prison hospital containing an inpa-

tient psychiatric unit. Following completion of the treatment under § 4241(d), the defendant is returned to a local jail or detention facility pending resolution of his legal case. Since medical staff at these facilities typically do not provide ongoing involuntary treatment, the defendant must voluntarily continue with the prescribed psychotropic medication to avoid the prospect of being returned to an FMC for additional involuntary treatment. Currently, the BOP has four FMCs for male inmates containing an inpatient psychiatry unit, located at Butner, North Carolina; Springfield, Missouri; Rochester, Minnesota; and Fort Devens, Massachusetts. An FMC with an inpatient psychiatric unit for female inmates is located in Carswell, Texas.

## Procedures

All psychiatric diagnoses and treatment interventions in FMC Butner are based on a comprehensive clinical assessment. The standard forensic assessment procedures include an admission physical examination and laboratory studies to rule out underlying medical illness; individual forensic interviews; review of documents describing the defendant's arrest; past criminal history; and review of any available past medical and mental health records. Psychological testing is offered, although sometimes defendants refuse to participate. Incompetent defendants are usually encouraged to attend the weekly one-hour competency restoration group, which provides basic education on competency issues in a small group setting. Recommendations regarding psychopharmacologic treatment are made by the assigned evaluating psychiatrist. Medication adherence is assured for those patients who receive long-acting injections of antipsychotic medication. Compliance with oral antipsychotic medication is supervised by nursing staff who dispense the medicine daily to patients who line up to receive the pills, with serum antipsychotic levels occasionally monitored in patients who show evidence of unusually rapid metabolism or are suspected of spitting out tablets after attending the pill line. The decision to initiate proceedings for involuntary medication treatment is usually made jointly by the evaluating team of a staff psychologist and a staff psychiatrist. During the period from 1990 to June 2003, the examiners used the standard diagnostic reference manual of the time, which was either the DSM-III-R or DSM-IV.

Before the *Sell* decision, the BOP policies on involuntarily medicating incompetent pretrial inmates were based on the 1990 Supreme Court case *Washington v. Harper*,[18] which ruled that judicial review of any decision by prison staff to medicate a dangerous, sentenced inmate involuntarily was not a necessary part of due process. Between 1990 and 2003, all *Harper*-type hearings at FMC Butner were conducted by the Chief Psychiatrist, using the following as justification for involuntary medication: risk of dangerousness to self or others, being gravely disabled, being unable to function in the open population of the facility, and being incompetent to stand trial. A copy of each *Harper*-type involuntary medication packet was stored in an archive file system. The forensic evaluations of all mental health inmates during this period were also copied and stored in a different archive at FMC Butner, as the BOP does not provide indefinite storage of the records of pretrial inmates.

## Methods

This study was approved by the Federal Correctional Complex Research Committee overseeing research at the Federal Medical Center in Butner, North Carolina, and by the Information, Policy and Public Affairs Division of the Federal Bureau of Prisons in Washington, DC.

During the first step of this study, the primary author searched through all the archived *Harper*-type involuntary medication packets of inmates who had undergone these proceedings from 1990 through June 2003. During this 13-year period, 288 inmates had undergone a total of 322 such hearings, with the higher number of hearings caused by 27 individuals' having undergone more than one period of involuntary treatment at FMC Butner. Approximately one third of the 288 cases involved "noncompetency" inmates, who were sentenced inmates or indefinitely civilly committed inmates undergoing involuntary medication hearings because of their status of being gravely disabled or posing a risk of danger to self or others while confined in an unmedicated state.

The diagnostic distribution of the inmates who underwent the *Harper*-type hearings is listed in Table 1. All the data in this table refer to the number of individual inmates, not the number of *Harper*-type hearings. Since nine defendants had undergone their first *Harper*-type hearing during pretrial detention and a subsequent one while later serving a sentence of

**Table 1** Diagnostic Distribution of the Inmates who Underwent *Harper*-Type Hearings

| Diagnosis | All Cases | Competency Restoration | Noncompetency Cases |
|---|---|---|---|
| Schizophrenia | 154 | 99 | 55 |
| Psychotic disorder NOS | 31 | 22 | 9 |
| Schizoaffective disorder | 36 | 17 | 19 |
| Bipolar disorder | 12 | 9 | 3 |
| Schizophreniform disorder | 2 | 2 | 0 |
| Major depression | 6 | 1 | 5 |
| Delusional disorder | 42 | 31 | 11 |
| Dementia/head injury | 5 | 0 | 5 |
| Total | 288 | 181 | 107 |

incarceration at FMC Butner, the case assignment and primary diagnosis recorded was obtained from the competency restoration packet. For those sentenced or involuntarily committed inmates who had more than one *Harper*-type hearing for "noncompetency" reasons, the most recent diagnosis was listed.

In the second step of the investigation, the primary author reviewed the forensic evaluations written by the evaluators at FMC Butner of the 31 pretrial inmates with the diagnosis of delusional disorder who had undergone involuntary medication hearings for restoration of competency. The inclusion criteria for analysis were (1) the diagnosis of delusional disorder had been maintained from the time of the *Harper*-type hearing until the final forensic opinion to the court on the instant offense, and (2) there had been a trial of at least one antipsychotic medication lasting a minimum of four weeks following the *Harper*-type hearing. No attempt was made to verify the diagnosis or competency status retrospectively. Copies of the court order describing the subsequent judicial ruling on competency were not available. However, studies of judicial decisions on competency to stand trial have documented a very high level of agreement with mental health professionals offering opinions on this issue.[19,20] Hence, the opinions of the examiners at FMC Butner on competency restoration were likely to be consistent with those made by the court.

Nine of the 31 cases were excluded from the analysis. Two individuals were never medicated because of judicial intervention, which had been mandated in some federal jurisdictions before the *Sell* decision in 2003. One case was excluded because of an inadequate trial of medication, as this defendant received only two doses of olanzapine 10 mg daily at the very end of the evaluation period, with the court refusing to authorize any further involuntary treatment. Six defendants no longer had delusional disorder at the time of the final forensic opinion. Regarding the switch in diagnoses, at the end of the final evaluation period, one individual received a diagnosis of paranoid personality disorder and was found competent to stand trial in an unmedicated state. Two individuals had the final diagnosis of schizoaffective disorder, two had the diagnosis of schizophrenia, and one had the diagnosis of cocaine-induced psychotic disorder.

This resulted in 22 cases, with the medication trials summarized in Table 2. For those individuals who had more than one period of involuntary treatment during pretrial proceedings for the instant alleged offense, the most recent opinion on competency status was used to calculate competency restoration rates. To provide follow-up data on this rare disorder, subsequent treatment information is listed for three individuals who returned to FMC Butner for psychiatric treatment under a new legal status, but the data are not included in the calculation of rates of competency restoration. Two of these individuals returned to FMC Butner on new federal charges (violation of supervised release) and one individual had a *Harper*-type hearing after he began refusing medication while serving a lengthy sentence of incarceration.

## Results

### *Demographics*

The cases were limited to men who ranged in age from 20 to 64 years at the time of admission to FMC Butner, with 19 of the 22 defendants between the ages of 34 to 57 years. Fifteen were described as being of white ancestry, five were of African descent, and two were of East Asian descent. The educational background of subjects indicated most had average to above-average levels of intelligence. This was consistent with psychological testing obtained on 17 defendants, which indicated that two had full-scale IQ scores in the low-average range, 14 had full-scale IQ scores in the average range, and one had a full-scale IQ score in the superior range.

The events leading up to arrest and federal prosecution were as follows. Ten cases involved communication of written or verbal threats. Two cases involved shooting a firearm at a federal government employee, with the intended victim a postal worker

**Table 2** Medication Trial Summaries

| Pt. | Involuntary Medication Trials | Restored? |
|---|---|---|
| 1 | Ten weeks of treatment with quetiapine with dose gradually increased from 100 mg twice daily to 350 mg twice daily had no impact on underlying delusional ideation; no concomitant psychotropic medication. | No |
| 2 | Three weeks of oral perphenazine 8mg twice daily resulted in significant improvement in mental status; phenylzine 30 mg twice daily was continued during the entire evaluation, which had been prescribed by his community provider to treat a single past episode of depression successfully. | Yes |
| 3 | Three months of haloperidol decanoate 100 mg every 28 days resulted in gradual but marked diminution of paranoid ideation; concomitant medication was benztropine 0.5 mg twice daily prescribed for extrapyramidal side effects, as well as diphenhydramine 75 mg at bedtime for insominia. | Yes |
| 4 | Three weeks of risperidone 4 mg daily resulted in marked reduction of delusional ideation; no concomitant psychotropic medication; the risperidone was inadvertently discontinued after he was returned to a local jail for further legal proceedings; he relapsed and was then returned to FMC Butner, where he agreed to resume taking risperidone 4 mg daily on a voluntary basis; within four weeks the examiners opined that he was again competent to stand trial. | Yes |
| 5 | Three months of treatment with haloperidol decanoate 150 mg every 28 days resulted in gradual but significant reduction in delusional ideation; no concomitant psychotropic medication; he returned to FMC Butner two years later for a second round of competency assessment and treatment for charges of violation of supervised release; examiners described his treatment response as similar to the preceding one, finding him competent to stand trial following four months of involuntary treatment with haloperidol decanoate 150 mg every 28 days. | Yes |
| 6 | Two months of treatment with fluphenazine decanoate 12.5 mg every 14 day had minimal or no benefit; his delusions responded within three weeks of increasing the dose of fluphenazine decanoate to 25 mg every two weeks; concomitant psychotropic medication included benztropine 1 mg twice daily for extrapyramidal side effects and fluoxetine 20 mg daily for new-onset depressive symptoms.<br>During his lengthy period of pretrial detention, he relapsed due to medication noncompliance in a local jail facility; two years later he was returned to FMC Butner for a second round of involuntary treatment; his delusional ideation responded to two weeks of oral haloperidol 5 mg followed by two weeks of treatment with haloperidol decanoate 100 mg every 28 days; he was also prescribed benztropine 1 mg in the morning and 2 mg at bedtime and diphenhydramine 50 mg four times daily, as needed, for extrapyramidal side effects.<br>Three years later he relapsed into psychosis with delusions and more prominent hallucinations while serving his lengthy sentence of incarceration at FMC Butner, which was attributed to medication noncompliance; his psychosis persisted at low levels following involuntary treatment with haloperidol decanoate 100 mg every 28 days but resolved within three weeks of dose increase to 150 mg every 28 days; at this time, he was prescribed doxepin 100 mg daily for new-onset depressive symptoms; three weeks later he sustained anoxic encephalopathy following a near-lethal suicide attempt by hanging. | Yes |
| 7 | Three months of fluphenazine decanoate 25 mg every 14 days resulted in partial reduction in delusional ideation, with initial opinion of restoration of competency; concomitant medication was benztropine 1 mg three times daily as needed for extrapyramidal side effects; he was returned to FMC Butner for additional involuntary treatment several months later after he refused fluphenazine at local jail; he remained delusional despite treatment with olanzapine 7.5 mg to 10 mg daily for two months; examiners opined he was nonrestorable to competency, in part due to prediction he would again stop taking psychotropic medication after leaving FMC Butner. | No |
| 8 | Six weeks of haloperidol decanoate 25 mg every 28 days resulted in significant diminution of paranoid ideation; no concomitant psychotropic medication. | Yes |
| 9 | One month of treatment with haloperidol decanoate 100 mg every 28 days was discontinued due to side effects of urinary retention, muscle stiffness, and drooling; most of his delusional ideation gradually resolved following three months of treatment with risperidone 2 mg twice daily; concomitant medication was trihexyphenidyl 5 mg three times daily for extrapyramidal side effects and diphenhydramine 75 mg at bedtime for insomnia. | Yes |
| 10 | Three months of haloperidol decanoate 75 mg every 28 days resulted in gradual but significant diminution of delusional ideation; no concomitant psychotropic medication. | Yes |
| 11 | Initial trial of haloperidol decanoate 150 mg was discontinued after a single injection due to severe akathisia; several-month trial of quetiapine at doses between 500 and 700 mg daily was ineffective, although the exact length of medication trial was not specified; three-week trial of olanzapine 10 mg daily followed by a few days of risperidone 2 mg daily were ineffective, which he refused to continue due to sedation and muscle aches or weakness; no concomitant psychotropic medication. | No |

**Table 2** continued

| Pt. | Involuntary Medication Trials | Restored? |
|---|---|---|
| 12 | Four weeks of haloperidol decanoate 100 mg every 28 days resulted in significant reduction of delusional ideation; no concomitant psychotropic medication. | Yes |
| 13 | One month of perphenazine 40 mg daily was ineffective, as was an additional two month trial of perphenazine 56 mg daily; the delusional ideation responded to an additional two month trial of perphenazine 64 mg daily; no concomitant psychotropic medication; two years later, he voluntarily accepted treatment with haloperidol decanoate 50 mg every 28 days when he returned for presentence evaluation; with poor insight but no delusional ideation; he was also treated with benztropine 2 mg twice daily as needed. | Yes |
| 14 | Two months of haloperidol decanoate 150 mg every 28 days was ineffective and caused moderate akathisia; the dose of haloperidol decanoate was then lowered to 100 mg every 28 days; his delusional beliefs gradually resolved during the next three months of treatment; concomitant psychotropic medication was atenolol 50 mg daily for akathisia; doxepin 100 mg at bedtime for insomnia; and benztropine 1 mg twice daily as needed for extrapyramidal side effects. | Yes |
| 15 | Three to four weeks of treatment with risperidone 2 mg daily resulted in resolution of delusional ideation; concomitant psychotropic medication was lorazepam 1 mg as needed for severe agitation. | Yes |
| 16 | Six-week trial of olanzapine 20 mg at bedtime resulted in significant diminution of delusional ideation; concomitant psychotropic medication was doxepin 100 mg daily, which was prescribed for dysthymia before the olanzapine trial. | Yes |
| 17 | One month of olanzapine 10 mg daily was ineffective; his delusional beliefs gradually resolved during the next three months of treatment with same dose of olanzapine; concomitant medication was paroxetine 20 mg daily for new-onset depressive symptoms that emerged only after his delusional ideation waned; his anxiety symptoms were treated with clonazepam 0.5 mg in the morning and 1 mg at night for two to three weeks. | Yes |
| 18 | Two weeks of treatment with risperidone 4 mg daily and lithium 1200 mg daily resulted in significant reduction in paranoia, although low-level delusions persisted; no other psychotropic medication prescribed. | Yes |
| 19 | Three months of haloperidol decanoate 75 mg every 28 days resulted in slow improvement; concomitant psychotropic medication of benztropine 1 mg twice daily as needed for extrapyramidal side effects was never used by defendant; two years later he was returned to FMC Butner after relapsing following noncompliance with medication while on probation; involuntary treatment with haloperidol decanoate 100 mg every two weeks was initiated, but the evaluation period ended two weeks later with an inadequate medication trial and judge did not authorize additional period of treatment for competency restoration. | Yes |
| 20 | Three months of haloperidol decanoate 50 mg every 21 days resulted in partial reduction in delusional ideation; concomitant medication was benztropine 1 mg twice daily as needed for extrapyramidal side effects; a few months later, he was returned to FMC Butner for additional involuntary treatment after relapsing in jail due to noncompliance; a trial of risperidone 2 mg twice daily for three weeks resulted in partial remission of delusional ideation; his complaints of constipation from risperidone were treated with oral stool softener twice daily. | Yes |
| 21 | Two months of treatment with haloperidol decanoate 100 mg every 28 days was ineffective; the dose was increased to 150 mg every 28 days for the next three months, then increased again to 200 mg every 28 days for 1 month; serum haloperidol level collected at the end of the six-month period was lower than expected at 2.9 ng/mL; no concomitant psychotropic medication. | No |
| 22 | Two weeks of treatment with unspecified dose of oral fluphenazine followed by two weeks of treatment with fluphenazine decanoate 25 mg every two weeks resulted in moderate improvement in psychotic symptoms; no concomitant psychotropic medication; evaluators opined that his competency would be restored with an additional period of treatment, but the judge did not authorize any additional involuntary treatment. | No |

in one case and law enforcement officers in the other. Two cases involved brandishing a firearm. Two other cases involved illegal possession of a firearm. Another individual was arrested after he successfully hijacked an airliner in flight, using an unloaded handgun he had smuggled onto the plane. One individual had attempted to enter a federal courthouse while carrying a blade weapon, which was a deliberate ploy to get arrested to broadcast his delusions in federal court. Insufficient detail was present in one case of assault to determine the precipitating event that led to the defendant's arrest. The three other cases involved charges of fraud, smuggling narcotics, and violation of supervised release.

Regarding the distribution of subtype of delusional disorder during the treatment at FMC Butner, 16 were persecutory type, 5 were mixed persecutory and grandiose type, and 1 was grandiose type.

Eleven of the 22 patients reported a recent or remote history of one or more brief psychiatric hospitalizations in the community, although the treatment records were often not available for review. Another five had undergone prior forensic mental evaluations, one of whom was restored to competency at a state facility following treatment with risperidone 3 mg daily. Of these 16 individuals, only 5 had definitely been treated with antipsychotic medication, with treatment duration lasting a few days to a few weeks, but all discontinued medication after a brief period of treatment. Five individuals had previously accepted antidepressant medication treatment from a community provider for depressive symptoms, which had been brief in duration compared with their delusional symptoms. A few patients had a complicated past psychiatric history marked by multiple diagnoses, but the majority seemed to have a more straightforward development and maintenance of one or more consistent delusional themes.

### *Age of Onset of Symptoms*

The age of onset of psychosis for the group ranged from 18 to 53 years. The ages of onset in the five defendants who were not restored to competency were 28, 30, 30, 36, and 52 years. This age of onset did not appear significantly different from that of the entire group, as 17 of the patients had onset of psychosis between 28 and 55 years of age. Eight (89%) of nine individuals who had an onset of psychosis between age 48 and 64 were restored to competency with involuntary treatment, indicating a good treatment response in late-onset delusional disorder.

### *Estimated Duration of Untreated Psychosis*

Since the entire group of patients appeared relatively naive to treatment with antipsychotic medication, an estimated duration of untreated psychosis (DUP) was calculated by subtracting the age of onset of psychotic symptoms from the age of admission to FMC Butner. This calculation was based on the assumption that the delusional symptoms were continuously present at some level following the identified onset of psychosis. Unfortunately, this assumption could not be verified by the historical information in many of the forensic evaluations, which poses a challenge similar to descriptions in the schizophrenia literature of studies using retrospective accounts to define the DUP.[21] This uncertainty is a limiting factor in the following analysis, especially for those defendants with a very long estimated DUP, since the intensity of delusional symptoms may wax and wane over time.

Employing the definition of DUP just described, we found sufficient data to estimate the DUP in 19 patients: 10 months to 24 years. Nine individuals had a DUP of five years or less, seven (78%) of whom were restored to competency. Six defendants had a DUP between 7 and 10 years, all of whom were restored to competency. The treatment response appears more robust than expected from the literature on DUP of first-episode schizophrenic patients, which would predict a modest increase in treatment resistance with a longer DUP.[22,23]

In contrast, only one of the four defendants with a much longer DUP (between 13 and 24 years) was viewed as restored to competency, which is similar to the dismal treatment response of 11 percent attaining a "good clinical outcome" in a group of 18 treatment-naive schizophrenic patients who had a DUP greater than 15 years.[24] The possible confounding effect of a medication trial of inadequate duration in two of the four patients, coupled with the very small sample size and uncertainty about the actual length of the DUP, reduces confidence that the poorer outcomes in the last group were solely attributable to the lengthy DUP. At the very least, the data provide evidence that DUP is not a useful predictor of nonresponse to antipsychotic medication in delusional patients who have been symptomatic for 10 years or less.

### *Ethnicity*

Twelve (80%) of 15 whites, 4 of 5 patients of African descent, and 1 of 2 patients of East Asian descent were viewed as restored to competency. The rates of competency restoration were remarkably identical for white defendants and those of African descent.

### *Medication Trials*

As described in Table 2, 10 of the 17 patients restored to competency were exclusively treated with first generation antipsychotic medications. These were the only antipsychotic medications available at the beginning of the study period in 1990. Two in-

dividuals responded to perphenazine monotherapy and seven responded to a trial of haloperidol decanoate. One individual was restored after a trial of fluphenazine decanoate, and then returned to FMC Butner after relapsing because of medication noncompliance in a local detention facility. His competency was restored after a trial of haloperidol decanoate.

One individual responded to both first- and second-generation antipsychotic medication. He was restored to competency with a trial of haloperidol decanoate, and then returned to FMC Butner after relapsing because of medication noncompliance. He was restored to competency a second time after agreeing to accept oral risperidone in lieu of resuming injections.

Three individuals were restored to competency by trials of oral risperidone. One individual was restored after he began simultaneous treatment with oral risperidone and lithium, although there was no description of any affective symptoms in this patient, and no rationale for the use of a mood stabilizer was documented. Two individuals were restored following a trial of olanzapine.

The two individuals who were prescribed trials of quetiapine were not restored to competency, although quetiapine had not been prescribed at the maximum dose in either case. Since quetiapine has lower affinity for the dopamine receptor compared with the other antipsychotics,[25] a theoretical question arises as to whether patients with delusional disorder require antipsychotic treatment with potent action at the dopamine receptor, as suggested by Morimoto and colleagues.[14] A theoretical basis for the formation of delusional beliefs has been advocated as being the result of abnormal salience, due to excessive dopaminergic activity.[26] A recent neuropsychiatric model links pharmacological and cognitive-behavioral treatments of psychosis, proposing that biological remission results from rewiring neural circuits through medication by dampening mesolimbic dopamine release, which facilitates cognitive reappraisal.[27] In this model, psychotherapeutic interventions continue to rewire neural circuits to attain psychological remission. Additional research is needed in this area.

The medication regimens were described as well tolerated by most patients, with side effects being readily managed by dose adjustment, use of adjunctive medication such as benztropine, or a switch to another antipsychotic drug. As expected during a relatively short period of antipsychotic exposure of a few weeks to a few months, there were no reports of any patients manifesting disfiguring side effects such as tardive dyskinesia. Consistent with the very low base rate of dangerous side effects of properly administered antipsychotic medication, no patient was described as manifesting symptoms of a potentially lethal condition, such as neuroleptic malignant syndrome. Most defendants responded to antipsychotic medication at the same low to moderate dose range used to treat symptoms of schizophrenia. Two defendants who had exhibited minimal or no response to low doses of medication manifested significant improvement in delusional ideation after the medication doses were increased to the moderate or high end of the recommended therapeutic dose range.

### *Time to Response*

Of the 17 defendants who were restored to competency, five individuals had a fairly rapid response within four weeks of beginning treatment. Two were described as responding within the first six weeks of treatment. The other 10 individuals did not show significant improvement until they had received at least three months of continuous treatment with antipsychotic medication, with some requiring a total of five months' medication before being restored to competency. This finding suggests that a single adequate medication trial may have to be extended to four or even five months' duration in patients with delusional disorder, which provides a plausible explanation for the conventional wisdom that these patients are refractory to treatment with antipsychotic medication. A recent article by Gunduz-Bruce and colleagues[28] describing the treatment report on a cohort of 118 individuals with first-episode schizophrenia supports this premise, since the treatment response of delusions occurred at a group mean of 150 days (median 76 days), which was much later than the treatment response of hallucinations, with a group mean of 59 days (median, 27 days). This article included a description of a theoretical framework that describes delusions as progressing through stages, which implies that delusional ideation may also recede through a series of stages. As mentioned previously, Morimoto et al.[14] described delusional symptoms in one sample of 11 patients as diminishing completely in 65 days, and 5 of 8 patients in a

different sample responding after eight weeks of treatment.

### *Analysis of Nonresponders*

Regarding the subtype of nonresponders, four were persecutory type, and one was mixed grandiose and persecutory type, which appeared similar to the distribution of the entire sample.

If an adequate medication trial for delusional disorder requires four consecutive months of treatment, then three of the five patients who did not respond to treatment had a medication trial of inadequate duration. One received a 10-week trial of quetiapine monotherapy at doses up to 350 mg twice daily. Another received only two weeks of treatment with oral fluphenazine followed by two weeks of fluphenazine decanoate 25 mg. This defendant was described as manifesting moderate improvement in psychotic symptoms at the end of four months and arguably could have been restored to competency if the court had authorized continued involuntary treatment. A third was prescribed olanzapine at a dose of 7.5 to 10 mg daily for only two months, despite the fact that he had previously been restored to competency on fluphenazine decanoate. The evaluators wrote that their opinion that the defendant was not restorable to competency was partly based on their expectation that he would stop taking antipsychotic medication again after leaving FMC Butner.

A fourth individual had been treated with quetiapine at doses between 500 and 700 mg daily for several months, which would appear to be a medication trial of adequate dose and duration.

The fifth individual had a six-month trial of haloperidol decanoate at doses gradually titrated up to 200 mg every 28 days, at which time he had a serum haloperidol level of 2.9 ng/mL, which is lower than published descriptions of a therapeutic window of 5 to 17 ng/mL for patients with schizophrenia treated with oral haloperidol. Although this medication trial appeared to be of adequate dose and duration, the dosage may have been suboptimal if the patient had a significantly increased rate of drug metabolism.

Therapeutic drug monitoring has been described as one tool physicians can use to individualize the dose of a drug to fit a specific patient more precisely, by assessing the patient's individual elimination rate for that drug.[29] Although therapeutic serum levels have not been established for all antipsychotic drugs,[30] therapeutic drug monitoring can provide an estimate of metabolic drug clearance and provide a means of measuring compliance with oral medication. A review of the record indicated that therapeutic drug monitoring was not used in any effective manner to assess for medication nonresponse in these five patients. As mentioned earlier, the only case in which a serum haloperidol level was collected had occurred too late in the treatment course to guide future dose adjustments.

### *Treatment Response after Relapse*

Six delusional defendants restored to competency with involuntary treatment later relapsed due to nonadherence to the prescribed medication. Four of these individuals were restored to competency again: two who accepted voluntary treatment with antipsychotic medication and two who required another round of involuntary treatment. Of the two remaining individuals who were not restored during a second round of involuntary treatment, one received an inadequate duration of treatment of two weeks of a single dose of haloperidol decanoate 100 mg and the other had a trial of inadequate dose and duration of olanzapine for two months at a dose between 7.5 and 10 mg daily. One defendant who was restored to competency at FMC Butner had been restored to competency two years earlier while being treated at a state forensic facility. This demonstrates the benefit of additional antipsychotic medication treatment for most treatment-responsive delusional individuals who relapse because of nonadherence.

### *Risk of Assaultive Behavior During Involuntary Treatment*

One individual attempted to enucleate the eye of a non-mental health staff member in a bizarre unprovoked assault, using a plastic knife obtained from the inmate dining hall. The rest of the individuals were housed in the open population unit of the Mental Health Department during most of the evaluation and did not manifest assaultive behavior toward staff, including those who were prescribing or administering the medication.

### *Risk of Self-Destructive Behavior During Involuntary Treatment*

Although none of the 22 defendants attempted suicide during the involuntary medication trials, two defendants who were euthymic upon arrival at FMC Butner developed new-onset depressive symptoms after their mental status had improved following in-

voluntary treatment with antipsychotic medication. This is consistent with the literature on risk of suicide in schizophrenia, which describes some patients as becoming depressed after acknowledging the clinical handicaps of their disorder.[31] Both defendants regained euthymia after treatment with antidepressant medication. Some years later, one of these two individuals developed anoxic encephalopathy following a near-lethal suicide attempt by hanging. This incident occurred while he was serving a lengthy sentence at FMC Butner and had again become depressed after his psychosis had responded to another round of involuntary treatment.

### *Treatment Outcome for Delusional Focus on Supposed Government Conspiracy*

In *U.S. v. Evans*, the defense psychiatrist testified that an elderly defendant with schizophrenia was not likely to respond to treatment, opining that the defendant's core delusions were "fixed" and "impervious to medication." One of her reasons for opining that the defendant's longstanding delusions of government conspiracies would resist involuntary medication was "precisely because the government administers the medication." However, it is possible that the detention of such delusional defendants in state or federal psychiatric forensic institutions is inadvertently therapeutic by forcing the defendant's exposure to the feared stimulus, which may facilitate cognitive reappraisal and recovery as the delusional ideation begins to recede with medication. The data from this group were used to investigate this question. Sixteen of the 22 defendants in this study had delusional ideation that included being the victim of a conspiracy that involved agents of the federal government or federal court system. All five individuals who were not restored to competency had this type of delusional ideation, although three of these individuals had a medication trial of inadequate duration. Eleven (65%) of the 17 individuals who were viewed as being restored to competency had similar delusional ideation. Therefore, the presence of delusions involving themes of persecution by the same government that is implementing involuntary medication does not appear to be a useful predictor of nonresponse to treatment.

### *Assessment of Genuine Versus Feigned Improvement*

Mental health professionals involved in competency restoration interventions of higher functioning mentally disordered defendants, such as those with delusional disorder, must be concerned about whether a patient's improvement reflects genuine reduction in psychotic symptoms, or instead is feigned recovery to avoid further periods of involuntary confinement and treatment. The examiners at FMC Butner appeared to rely on various objective changes in the defendant's speech and behavior from baseline as evidence of genuine improvement, which included the defendant's ability to: (1) disavow past delusional beliefs repeatedly; (2) demonstrate the ability to discuss the legal issues in a reality-based manner during individual interviews with the examiner and, at times, during staff-assisted telephone discussions with defense counsel; (3) cooperate with evaluation procedures previously refused, such as participating in psychological testing or resuming discussion with defense counsel; and (4) refrain from engaging in previous bizarre behavior, such as writing illogical or threatening letters or manifesting overtly paranoid interactions with staff and peers. The emergence of depressive symptoms in two defendants was viewed as enhancing the credibility of their report of diminution in their delusional ideation.

Several defendants manifested only partial improvement, as they were described as harboring residual delusional ideation at the end of the evaluation period. However, the examiners had opined that the residual delusions no longer interfered with trial-related abilities, such as conferring with defense counsel on defense strategy or having a reality-based understanding of trial proceedings and the relevant evidence in the case. The salient issue appeared to be the defendant's ability to shift perspective by acknowledging that others might not agree with his delusional beliefs and being able to discuss his legal case from this point of view. This demonstrates that treatment response and competency restoration is possible even without complete remission of delusional ideation.

### *Limitations*

The usual limitations of a retrospective inpatient chart review apply to this data set and include lack of standardized clinical assessments with rating scales and diagnostic instruments, as well as lack of inter-rater reliability studies. As a result, some patients may have been misdiagnosed and wrongly included or excluded from this study population. Standard re-

search methods to reduce bias, such as random assortment to assigned treatment groups, the use of a placebo control group, and blinded outcome measures, were not possible in this study. Without these safeguards, the opinions of the forensic examiners may have been biased in favor of finding a positive response to treatment. Another limitation is the small sample size, which was the result of the low prevalence of delusional disorder, even in a forensic mental health population. The methods did not permit comparison between the study cohort and a parallel group of incompetent, delusional defendants who voluntarily accepted treatment with antipsychotic medication. The available records did not include the judicial ruling on competency for these cases, although past research results predict a high rate of agreement between the judge and the forensic examiner. Future research on this topic should be designed to avoid some of these methodological weaknesses.

A strength of the study is the patient cohort was selected in a real-world manner by criminal prosecution, after which they were assessed and involuntarily treated in a real-world manner at a forensic mental health facility. The main contribution of this study was the observation of treatment response in patients with delusional disorder who, in contrast to the usual protocols in community research studies, were not permitted to drop out of treatment. That 10 of the 17 patients who responded to treatment required continuous antipsychotic treatment for at least three months, and some up to five months, was unexpected. This result provides a plausible explanation for the presumed refractory nature of delusional disorder symptoms. The real obstacle to a positive treatment response in delusional disorder may not be the intrinsic biological features of the illness, but may instead be the difficulties in convincing these patients to adhere to an adequate trial of medication.

## Conclusions

In summary, most of the 22 incompetent criminal defendants with delusional disorder in this study manifested a positive response to involuntary treatment with antipsychotic medication, as the forensic examiners opined that over three-fourths of defendants in this group were restored to competency status. The treatment response of this cohort would meet the standard for "substantially likely" for restoration of competency with involuntary treatment as defined in *U.S. v. Gomes.* The results of this study indicated that both first- and second-generation antipsychotic medications (haloperidol, fluphenazine, perphenazine, risperidone, and olanzapine) were effective and generally well tolerated by this population, which is fairly consistent with the Phase 1 results of the Clinical Antipsychotic Trial of Intervention Effectiveness (CATIE) for treatment of chronic schizophrenia, which found no significant differences in perphenazine compared with risperidone, ziprasidone, and quetiapine, with slightly increased effectiveness for olanzapine.[32] Although some patients with delusional disorder responded within a few weeks of initiating medication, most had a much more delayed response, which suggests the minimum duration of an adequate medication trial should last no less than four months before concluding that the medication is ineffective. Although some delusional patients responded at low doses of antipsychotic medication, others required doses in the moderate to high therapeutic range. With the possible exception of DUP greater than 13 years' duration, no useful predictors of nonresponse to treatment with antipsychotic medication were identified. Measurement of serum drug levels is a prudent component of assessing nonresponse to treatment to guide future dose adjustments. Four of the six delusional defendants who later relapsed after a positive medication response due to nonadherence had the same positive response when antipsychotic medication was resumed, with the remaining two individuals having medication trials of inadequate length. Overall, the medication interventions were typical of those used to treat individuals with schizophrenia.

The data do not address the preferred selection of a second antipsychotic medication in delusional patients if the first medication trial is unsuccessful. Since the DSM-IV notes that delusional disorder "may be particularly difficult to differentiate from the Paranoid Type of Schizophrenia," clinicians treating such delusional patients will probably rely on treatment recommendations obtained from studies of cohorts of patients with schizophrenia. Some guidance is available from the Phase 2 results of the CATIE study, which found olanzapine and risperidone to be more effective than ziprasidone and quetiapine in a group of chronically ill schizophrenic patients who had recently discontinued treatment with a second-generation antipsychotic.[33]

Despite the limitations of this study, the results provide mental health professionals some evidence that most of the incompetent male defendants with a diagnosis of delusional disorder, especially the persecution subtype, will respond favorably to involuntary treatment with standard doses of first- and second-generation antipsychotic medications. Additional research is needed to confirm and expand on these findings.

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