Selected In-Treatment Outcomes of Long-Term Methadone Maintenance Treatment Patients in New York State

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Abstract

The New York State Office of Alcoholism and Substance Abuse Services (OASAS) licenses the largest system of methadone maintenance clinics nationwide. In 1996, a survey was undertaken to evaluate the functioning of patients continuously active in treatment for ten or more years. Information was obtained on a 10% random sample from the OASAS client data system and the records of the clinics. Data were collected concerning methadone dose, illicit drug and problematic alcohol use, employment, criminal activity, health, living situations, and the primary type of payment for treatment. A contrast group was constructed of discharged patients who had no more than 5 years of continuous treatment. The long-term active patients in the study sample showed superior outcomes on all variables, although some of the differences were small. However, the arrest rate for the discharged contrast group was 20 times as large as the arrest rate for the active study sample. These results are consistent with nationwide evaluations of methadone maintenance treatment. Factors that negatively impacted on the adjustments of the active patients were heavy use of crack/cocaine and disabilities. The long-term active patients in this sample belong to distinct subgroups with different levels of functioning, achievement, and ongoing health and social needs that must be investigated and addressed.
Key Words: Heroin addiction, methadone maintenance, outcomes, long term treatment.

Background

IN 1996, A NEW YORK STATE LEGISLATOR introduced a bill to limit the length of methadone maintenance treatment (MMT) to 18 months. The advocacy and political activity which thwarted the bill led to an interest in whether the effectiveness of MMT shown in nationwide studies applied to New York State's own MMT system (1). Furthermore, concern with the cost-effectiveness of state-supported alcohol and other drug (AOD) treatment services, fueled by the pressures of welfare reform and managed care, also contributed to an interest in the effectiveness of MMT, since the New York State Office of Alcoholism and Substance Abuse Services licenses the largest system of methadone clinics in the United States (2).

As a result, the single state agency which funds and certifies AOD treatment in New York, the Office of Alcoholism and Substance Abuse Services (OASAS), initiated an assessment of treatment effectiveness of programs that treat substance abuse in New York State, including MMT. The study focused on an important but rarely addressed issue in MMT evaluation research, namely, the current functioning of MMT patients in treatment continuously for very long periods.

As the site of initiation of MMT and with a large AOD treatment population, New York presents a unique opportunity to explore the adjustments of very long term patients. For this study, "long-term" was defined as 10 or more years of continuous treatment with no more than one 90-day interruption. An interruption was included to accommodate clinical and reporting contingencies that would have inappropriately excluded patients actually enrolled continuously. Methadone Medical Maintenance patients, a small subgroup of well-rehabilitated patients treated in private medical practices, were excluded. Only patients treated in standard congregate care clinics were assessed. New data were collected for the 10-year patients for the six-month period before the study began in August 1996. In addition, data were collected from a contrast group drawn from the patient cohort discharged in 1996; this group had had three months to five years of continuous MMT experience, i.e., a meaningful but shorter treatment experience.

Design

Treatment durations for methadone maintenance patients are intended to be indefinite and, perhaps, lifelong for most

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patients. Despite the importance of treatment longevity in MMT, however, there have been few studies of the in-treatment outcomes of long-term MMT patients. This study was conducted to obtain data on patients in treatment continuously for at least 10 years (which could include one interruption of up to 90 days). Our objectives were to determine (a) the size of the patient population in treatment at least 10 years and (b) their drug abuse, criminal justice, medical, employment, and related outcomes as compared to those of patients discharged after a shorter treatment experience.

Method

The data collection strategy involved a one-page form for MMT program counselors to complete on those patients in their caseload who, according to OASAS' Client Data System (CDS), met the treatment tenure criterion. Treatment and outcome data requested included current methadone dose, measures reflecting illicit drug and problematic alcohol use, employment, criminal activity, health, living situation, educational status, and primary method of payment for MMT services. Where relevant, data were requested for the six-month period preceding the request.

Procedure

This study was part of a three-pronged effort funded by the federal Center for Substance Abuse Treatment (CSAT) and subcontracted to Research Triangle Institute (RTI), to assess MMT program functioning and outcomes in New York State. A letter from OASAS' commissioner went to all MMT providers in New York State (NYS). It discussed the need to develop information on MMT outcomes and their cost-effectiveness for patients in NYS, to determine whether they agreed with the results of nationwide studies (1, 3).

Provider cooperation was requested in filling out a data collection form for each active patient in their clinic(s) who met the "10-year plus" continuous treatment criterion. Shortly afterwards, all providers were sent instructions for completing data collection forms, and a copy of the printout for their 10-year patients who OASAS' Client Data System (CDS) determined to be active as of August 1996.

The patient survey form requested: MMT provider name and number, Program Reporting Unit (PRU) number (note: this number is a code number assigned to a specific treatment site), patient identification number, years in treatment (rounded to the nearest whole year: less than six months versus six months or more), patient Medicaid eligibility, employment status, years and months continuously employed full-time if patient was employed full-time, highest school grade completed, type of residence, alcohol as a current problem, current dose (in mg), the primary method of payment for MMT services, weekly contribution in whole dollars if the patient was self-paying, and, in the past 6 months: the number of urinalyses which were positive for illicit drugs, the number of emergency room admissions, the number of arrests, and the number of days hospitalized for non-detoxification services.

In addition to the patients meeting the 10-year, continuous treatment criterion, we were also interested in other patients to whom these patients might be compared. In other words, how might treatment outcomes differ for patients who stay 10 or more years and those who leave after a meaningful but shorter period of treatment? Those in the group (referred to subsequently as the "contrast group") who had the most complete outcome data were patients who had three months to five years of continuous treatment and who had been discharged during the first half of 1996. (The wide span of treatment intervals included in the contrast group is based on Treatment Outcome Prospective Study (TOPS) findings (1) that the bulk of clinical gains after admission to MMT occur after about three months, with real but much smaller gains occurring with additional time in treatment. That is, patients enrolled for several months are, in the aggregate, "roughly" comparable clinically to those enrolled for several years.)

Two limited forms of data entry verification were done. One involved visually checking a 10% random sample of data-entered cases selected for analysis (n = 560, see below), with their associated data collection sheets, by a person not involved in the original data entry. Errors of commission and omission were both less than 1 percent. Corrections were made to the appropriate records. The second type of verification involved asking providers to recompile and submit data on the number of positive urine toxicologies for selected patients who, it seemed, had very high values. In *every* instance, the newly compiled results yielded a value for positives in agreement with that on the original data collection sheet.

Because of uncertainty regarding the completeness of printouts of discharged patients, and the data on eligible patients not on the original list, we decided to develop a 10% stratified random sample of patients from the available data. Every PRU (n = 116) in New York State's MMT system contributed at least one patient. Ten percent of patients within every PRU were selected. This resulted in a sample size of 560 individuals. The contrast group numbered 7,250.

RESULTS

The Ten-Year Patient Population

The CDS computer run in August 1996 yielded an n of 6,244 active patients who met the criterion of 10 years or more in treatment, with an interruption of no more than 90 days. The total MMT population in New York State as of the end of August 1996 was 35,006 (this excluded MMT correctional patients enrolled in the Key Extended Entry Program (KEEP) and patients in methadone-to-abstinence or MTA programs). Thus, the ten-year patients comprised about 18% of the MMT population.

Descriptive statistics on selected outcome measures for the 10-year patients and the contrast group, where available, are presented below.

1. Arrests

The data collection form asked for information on the number of arrests in the past six months for each individual in the 10-year group (i.e., from February 1996 through July 1996). Tables 1 and 2 present the findings on average number of arrests for the 10-year patients and for contrast group patients, and the number in each group who were arrested or not.

The results in both tables show a very large advantage in favor of the 10YR patients, i.e., the average number of arrests and the percentage who were arrested, were both very much lower for the 10-year than for the contrast patients.

TABLE 1
Number of Arrests in the Last Six Months

	n	Average
10-year patients (total number = 356)	13	0.036
Contrast patients (total number = 6,842)	3,868	0.565

$p < 0.0001$

TABLE 2
Number of Patients Arrested or Not Arrested in the Last Six Months

	Arrested		Not Arrested	
	n	%	n	%
10-year patients (total number = 353)	5	1.4	348	98.6
Contrast patients (total number = 4,887)	1,380	28.2	3,507	71.8

$p < 0.00001$

These results are consistent with previous studies showing low arrest and incarceration rates among active MMT patients (1).

2. Hospitalization for Non-detoxification Services

Tables 3 and 4 present findings on hospitalization in the past six months for the 10YR and contrast patients. The contrast group had a higher rate of hospitalization than the patients in the 10YR group, and more than twice as many hospitalized days. A previous OASAS report (1997) showed a decline in days hospitalized from a year before admission to a year after discharge, for all non-MMT programs.

The expectation for MMT patients, as for other AOD treatment clients, is that enrollment in treatment brings attention to previously

TABLE 3
Number of Days Hospitalized for Non-detoxification Services in the Past Six Months

	n	Mean
10-year patients (total number = 378)	547	1.45 days
Contrast patients (total number = 6,842)	20,222	2.96 days

$p < 0.05$

TABLE 4
Hospitalized or Not for Non-detoxification Services in the Past Six Months

	Hospitalized		Not Hospitalized	
	n	%	n	%
10-year patients (total number = 446)	48	10.8	398	89.2
Contrast patients (total number = 7,250)	1,079	14.9	6,171	85.1

$p < 0.0001$

neglected medical problems and so may result in increased hospitalization, in the short run. Continued enrollment should result in fewer medical problems requiring hospitalization, though the HIV/AIDS and hepatitis C epidemics are affecting older patients who may require periodic hospitalization independent of the length of their treatment tenure.

The findings for the 10-year patients are consistent with this scenario. The difference between the 10-year and contrast group patients in the rate of hospitalization was statistically significant; however, it was not large in absolute terms and reinforces the suggestions above as well as anecdotal observations about the serious medical problems affecting some long-term patients.

3. **Emergency Room Episodes**

Inappropriate use of the emergency room is a significant contributor to health care cost increases, and a decline in ER episodes would be desirable from a cost control standpoint. At the same time, some MMT patients have serious medical problems (e.g., AIDS, hepatitis C) which may become acute and require emergency room attention (Table 5). The findings here show that the rate of emergency room episodes is lower for the 10-year patients but not significantly so. Further, while the mean number of ER episodes is also lower among the 10-year group than among the contrast group of patients, the 0.2 episode per 10-year patient is not significantly lower than the 0.3 episode per contrast group patient (Table 6).

4. **Employment**

Employment has been a traditional measure of an AOD treatment outcome, and maintaining or improving patients' level of vocational involvement reflects treatment effectiveness. The findings here only show status at a point in time, i.e., employment status for the 10-year patients in August 1996, and for the contrast group, at the time of discharge, for discharges during the first six months of 1996 (Table 7).

TABLE 6
Number of Emergency Room Episodes in the Past Six Months

	n	Mean
10-year patients (total number = 375)	75	0.20
Contrast patients (total number = 6,842)	2,060	0.30

p = 0.26

The employment status categories for the contrast group were derived from the OASAS discharge form (the PAS 45), and include any employment; being unemployed; and a variety of not-in-the-labor-force statuses, including being disabled. About 90% of the employed patients were employed full time, while about 10% where employed part time.

A Chi-Square test was done to determine whether the percentages in the various employment status categories for the 10-year and contrast patients were significantly different. The result shows that twice the percentage of 10-year patients were working, compared to contrast group patients, and almost twice as many contrast group patients were unemployed. Consistent with the employment findings, data on principal source of payment for treatment showed more than twice as many 10-year patients as contrast patients who were self-paying, 34.0% versus 16.5% (Chi-square = 717.8, $p < 0.00001$). Further, while the treatment of significantly fewer 10-year than contrast patients was paid by Medicaid, 56.2% versus 63.9% ($p < .001$), a majority of 10-year patients were nevertheless supported by Medicaid and/or other benefits.

Illustrative of the diversity among the 10-year patients, nearly twice as many of them were classified as disabled than were contrast

TABLE 5
Any Emergency Room Episodes in the Last Six Months

	Emergency Room Episodes		No Emergency Room Episodes	
	n	%	n	%
10-year patients	48	9.7	446	90.3
Contrast patients	921	12.7	6,329	87.3

p = 0.20

TABLE 7
Employment Status for 10YR and Contemporary Contrast Group Patients

Group	Status	n	%
10-year patients	Employed	182	38.7
	Unemployed	126	26.8
	Not in labor force **	22	1.0
	Not in labor force — "other"	47	4.7
	Not in labor force — Disabled	93	19.8
Total number		470	
Contrast patient	Employed	1,289	18.8
	Unemployed	3,378	49.4
	Not in labor force **	481	7.0
	Not in labor force — "other"	940	13.7
	Not in labor force — Disabled	755	11.0
Total number		6,843	

$p < 0.00001$

** Employment status at discharge categories 7, 8, 9, 11 and 12 include "student," "retired." "Disabled" is also a not-in-the-labor force category; it was presented separately because of its treatment and policy implications.

Employment status categories
7 = not in labor force — student
8 = not in labor force — retired
9 = not in labor force — inmate
10 = not in labor force — disabled
11 = not in labor force — child-caring issues
12 = not in labor force — in training

group patients. These findings support clinical observations of serious medical problems and handicap conditions among some long-term patients.

Finally, these data do not address the origin(s) of the difference in employment status between the 10-year and contrast group patients. One possible source is that the two groups differed in employment prospects before admission; another, that treatment contributed to a favorable vocational outcome.

5. Drug and Alcohol Use

The primary goal of MMT is to reduce or eliminate the use of illicit opiates; nonopiate drug and alcohol use are addressed in the course of treatment, but MMT has a specific pharmacological efficacy that does not extend to the latter substance categories. Previous studies show major reductions in illicit opiate use, but also, smaller reductions in non-opiate use (1).

The main measure available for assessing illicit drug use is the finding of positive urine sample, indicative of use of illicit drugs. For this project, these data were compiled from urinalysis reports for the six months prior to the data collection request. The results show that more than 60% of the 10-year patients had no positive toxicologies for illicit drugs in the past six months and 18% of the patients had up to three positive toxicologies. On the other hand, 14% of the patients had seven or more positive urinalyses (Table 8).

Usual urine testing frequency in MMT programs is once per month, although it can be more frequent to determine if a patient is adhering to a contract or agreement to stop using an illicit drug(s). More frequent testing may also be done occasionally at a patient's request, to provide external confirmation of abstinence. In fact, 5.4% of the patients had at least 16 positive toxicologies and we were concerned about the validity of these findings. As a result, requests were made to recompile the urinalysis findings. In every instance, the number of positive urinalyses was confirmed, and in every case it involved a positive for cocaine; in two instances, there was also a positive for illicit opiates.

Thus, the great majority of long-term patients showed no-to-minimal illicit drug use, while a noticeable minority showed persistent, and some, a seemingly intractable use of cocaine. As for problematic use of alcohol, its frequency as a current problem was reported for only 5.5 percent of the sample (see Table 9).

6. Methadone Dose

Dosage data were reported for most of the 10-year patients (525 of 560). In line with best practice recommendations and research (4, 5), more than half the patients received doses greater than 70 mg. The average dose was 64.2 mg (standard deviation ± 27.7 mg). However, about a quarter of the patients received doses of 40 mg or less. While such doses are too low for

TABLE 8
Number of Positive Urinalyses for Illicit Drugs in the Last Six Months for 10YR Patients

Number of Positive Samples	n	%
0	276	61.9
1–3	80	17.9
4–6	29	6.5
7–15	37	8.3
≥ 16	24	5.4
Total number	446	

114 patients had missing data (The data collection form did not indicate the number of urine samples which tested positive.)

TABLE 9
Percentage of 10-year Patients Considered to Have an Alcohol Problem in the Past Six Months

Had an Alcohol Problem	n	%
Yes	31	5.9
No	497	64.1
Total number	528	

32 patients had missing data (The data on a patient's alcohol problem status was not indicated on the data collection form submitted by the patient's counselor.)

optimum results (3), more information will be needed to determine whether clinically deficient practices were involved. Some patients may function satisfactorily at such doses; further, some patients may have been in clinically supervised withdrawal.

Summary and Conclusions

This study was conducted to determine the size of the MMT population in New York State with 10 or more years of continuous treatment (which could include one interruption up to 90 days) and their treatment status and selected outcomes. Some of the outcome data for the 10-year patients was compared to results for the population of methadone patients who had three months to five years of treatment and who were discharged during the first half of 1996. These patients provided a contemporary contrast group.

MMT is designed for indefinitely long periods of enrollment, to enable opiate addicts to function normally. Discharges from MMT are often under unfavorable conditions, e.g., relapse, arrest, compliance violations, negatively biasing comparisons between discharged and active patients (6). Thus, active patients, especially those with extended tenures such as the 10-year patients in this study, should exhibit superior outcomes.

In fact, the results support this expectation overall, though some of the differences between the 10-year and contrast group patients were small. One of the largest differences was for arrests. For example, the arrest rate for the 10-year patients was a negligible 1.4%, while the rate for the contrast group patients was twenty times as large. The 10-year patients had lower rates of hospitalization and fewer days hospitalized, and fewer of them used emergency room services. More than double the number of 10-year than contrast group patients were employed, and a similar relationship was observed regarding primary source of payment for treatment, i.e., over twice as many 10-year patients paid toward their own treatment as did contrast group patients.

While the findings were consistent with expectation, namely, that long-tenured MMT patients would exhibit better outcomes than discharged patients, it is the case that many 10-year patients showed dependency on benefits, and a noteworthy minority were classified as disabled. The low rate of self-sufficiency among long-term patients observed here indicates that there is significant room for improvement in the MMT system. OASAS's very recent efforts to increase vocational-educational resources is an attempt to address this problem; external pressures exerted by welfare reform are also fostering a greater focus on patient self-sufficiency and employment. Further, anecdotal reports of medical problems which limit patient functioning need to be systematically explored.

The results for the 10-year group are of special interest because of the paucity of data on patients with such extended treatment tenures. The findings on hospitalization, emergency room use, and disability among the 10-year and contrast group patients suggest that long-term patients are very distinct populations, with different levels of rehabilitative accomplishment and ongoing needs. These remain to be characterized in further research. The 10-year MMT population is a heterogeneous group demonstrating worthy outcomes. A major component includes patients with serious medical and social problems, for whom MMT may be an essential anchor. Additional rehabilitative efforts are required to address the issues of low productivity and various remaining medical and social obstacles.

The results have important implications for policy concerning those 10-year patients whose status is clinically tolerable-to-marginal, but who evidence no movement toward self-sufficiency. Many such patients persist in using crack/cocaine and may engage in illicit activity to purchase it.. However, a growing concern among MMT clinic staff with the transmission of such infectious diseases as HIV/AIDS has led staff to retain such patients. In effect, the MMT treatment policy and provider communities have tacitly decided in favor of patient and public health with some sacrifice of more traditional concerns.

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