

Leaving Methadone Treatment: Lessons Learned, Lessons Forgotten, Lessons Ignored

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Abstract

Despite the demonstrated benefits of methadone maintenance, there have been concerns about the ethics, necessity and expense of maintaining addicts on methadone indefinitely. The inability of many patients to achieve normative levels of psychosocial functioning with methadone, combined with widely held attitudes favoring drug abstinence over replacement medication, has led to attempts to promote time-limited methadone treatment. This paper reviews the published research literature on post-discharge outcomes of patients exiting from extended methadone detoxification, "abstinence-oriented" methadone programs, and regular methadone maintenance programs. Virtually all of these studies document high rates of relapse to opioid use after methadone treatment is discontinued. Most of the patients studied left treatment without meeting clinical criteria for detoxification, although high relapse rates were also reported for patients who completed this program. The detrimental consequences of leaving methadone treatment are dramatically indicated by greatly increased death rates following discharge. Until more is learned about how to improve post-detoxification outcomes for methadone patients, treatment providers and regulatory/funding agencies should be very cautious about imposing disincentives and structural barriers that discourage or impede long-term opiate replacement therapy.

Key Words: Methadone maintenance, drug abstinence, post-discharge outcomes.

Introduction

PREVIOUS RESEARCH HAS SHOWN that outcomes have generally been poor after short-term heroin/opiate detoxification; large percentages of detoxified addicts rapidly relapse to heroin/opiate use (1). The availability of naltrexone, an opiate antagonist, to extend opiate abstinence after detoxification has not altered this verdict; few persons to whom naltrexone was administered continue to take it for more than a month or two (2, 3). However, methadone maintenance with adequate dosing (4, 5) has been shown to eliminate or dramatically reduce patients' heroin use and improve their psychosocial functioning (6-9).

Nevertheless, even from the outset, there have been concerns about the ethics, wisdom, necessity and expense of maintaining addicts on

an opiate replacement indefinitely, possibly for the rest of their lives (10, 11). The depiction of irreversible neurological and metabolic changes in long-term opiate addicts remains a credible hypothesis, not acceptable by all, to help explain the remarkable persistence of opiate misuse by individuals (12). If methadone-maintained patients generally achieved a normative level of psychosocial functioning, surely there would be less criticism of the modality, but this goal has not been achieved. Addicts usually improve substantially after entering methadone treatment, particularly by eliminating or reducing opiate use, drug-injection-related health risk habits and criminal activity. However, they often continue to misuse substances other than opioids (a pattern usually predating treatment) and most remain economically dependent. An excellent comprehensive review of methadone treatment issues can be found in Ward et al. (9).

The mixed outcomes of methadone maintenance, at least as it is traditionally administered and delivered, have led to a curious conclusion in some quarters. Because many patients remain economically dependent,

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some say that methadone maintenance fosters economic dependency. Because many patients misuse substances other than opiates, some say that methadone maintenance precipitates the use of other illegal substances, such as cocaine, in place of opiates (13). Comparisons of employment and polysubstance abuse before and after entry into treatment, and changes during treatment, generally belie these assertions (6, 14), but these facts have not been sufficiently reported to the public and policymakers. Thus, there have been renewed calls for restricting the length of methadone treatment.

Although the attempt by Mayor Rudolph Giuliani of New York City to limit methadone treatment may be the latest and most public (15), other less visible, more subtle and perhaps more effective policies and actions with the identical objective have been in place nationally and internationally for some time. These include: actual limitations on the length of treatment; reduction or elimination of public subsidies for methadone maintenance; “low dose” methadone policies and practices, due to either state regulations or individual program practices; rules prohibiting or discouraging the expansion of medical maintenance; poor physical clinic facilities; marginally trained or demoralized staff; and a variety of disincentives for methadone patients to improve themselves, such as overly stringent requirements for admission to vocational rehabilitation programs (4, 11, 16–19). All these factors contribute to patients leaving methadone treatment, so that the number of “long-term” stabilized patients, historically never very large in any event (20), seems to be decreasing. Thus, nationally one-half of admissions to methadone treatment leave within one year (21), and in Texas three-quarters leave within a year (22).

Consequently this paper will revisit the question, “What are the observed consequences of patients leaving methadone maintenance?” Is it ever wise to encourage this move, and if so, for which patients, or under what circumstances, might it be acceptable to do so? In particular, how numerous and successful are “planned” or “therapeutic” long-term detoxifications from methadone treatment? Can we learn anything from the history of research concerning this important issue?

Methods

The published literature since 1966 was screened using major automated bibliographic

databases (MEDLINE, PsychInfo) to identify relevant published articles. Relevant research published as books was identified by citations in articles and the authors’ knowledge of the methadone field; very little such research is initially or solely published in book form.

Three types of follow-up studies are reviewed:

1. Studies of patients exiting from time-limited methadone programs (i.e., “methadone to abstinence” programs or “abstinence-oriented” methadone programs).

2. Studies of discharged patients who began a planned (clinically approved or “therapeutic”) detoxification from a methadone maintenance program. We rely on Milby’s comprehensive review for such studies through 1985, only adding some details and commentaries on certain major studies included in that review (23).

3. Studies of patients leaving methadone maintenance programs for diverse or unspecified reasons. These studies generally do not indicate how many patients, if any, underwent detoxification before discharge. They involve either the discharged patients only or they compare discharged patients with those who remained in treatment.

The primary outcome measure examined is whether relapse to regular or periodic opiate use occurs within a one-year post-treatment period. However, because one-year outcomes are not always explicitly presented in the short-term studies, those with somewhat shorter (e.g., six months), longer (e.g., two years) or variable post-treatment follow-up periods are included. The presence of opiate use at exit from treatment or a return to methadone treatment is assumed to indicate post-treatment use as well. Lastly, outcomes known to be closely related to opiate use, especially mortality and crime, are presented as plausible consequences of extensive opiate use after treatment discharge.

Long-term patient outcomes (usually five years or longer) generally are not analyzed, because these outcomes may be affected by many factors which might not be evident during the index methadone treatment episode. Most such studies have not been designed to examine the different contributions to outcomes. Also, short-term outcomes should generally be superior to long-term, in the absence of additional intervention or factors such as maturation. If abstinence cannot even be achieved before leaving the program, or if immediate relapse to opiate use occurs after

leaving, then there would seem to be little prospect for more positive long-term outcomes.

Results

1. Outcomes of Time-Limited Methadone Programs

Only four studies, all published in the 1990s, assessing outcomes of discharge from methadone to abstinence or other time-limited methadone programs, were identified (Table 1).

Banys et al. (24) established and evaluated a long-term methadone detoxification program providing intensive therapeutic support to help the addict achieve abstinence. Patients volunteered for the program; they reportedly were attracted because the program was easy to enter and focused on gradually tapering off methadone, thereby countering their fear of long-term dependence on methadone. Nevertheless, a majority of those who remained until the final month did not succeed in ceasing opiate use. Overall, only 27% of patients who entered the detoxification program successfully completed it. The 80-mg group did very well during the stabilization phase — the percent of opiate-positive patients declined steadily to 31% by weeks 11–14 — but then increased to 62% during the mandatory taper by weeks 23–26.

Strain et al. (25) reported difficulty in retaining patients in their low-dose, methadone-to-abstinence trial. Methadone dose level during maintenance was not predictive of outcome; the largest reductions in drug use at follow-up occurred for subjects who had reentered methadone treatment.

Two evaluations of time-limited methadone were conducted in Australia. Capelhorn (26) found that patients discharged from an abstinence-oriented clinic were not less likely to relapse and return to treatment than those discharged from a maintenance-oriented clinic. Bell et al. (27) reported a significantly higher rate of opiate-positive urinalysis (25%) at a methadone clinic oriented to time-limited treatment and abstinence from all drugs, as compared with a methadone clinic oriented to long-term maintenance (18%); this seemed to be due to the lower average doses in the abstinence-oriented clinic.

2. Outcomes of Planned Detoxification from Methadone Treatment

Milby (23) examined 14 methadone maintenance detoxification studies that had

been conducted from 1970 through 1985. Eleven of these studies included patients who met criteria for rehabilitation before detoxification. Patients qualifying for rehabilitation were those who met the study clinic's "rehabilitation criteria" or who were identified by staff as "most likely to succeed." Patients qualifying for abstinence after detoxification were those who were not using heroin and were not returning to methadone treatment. All patients had been in methadone maintenance for at least six months before undergoing detoxification. Successful detoxification was defined as achieving a zero methadone dose. Uncontacted patients were coded as not abstinent, although inspection of certain studies reveals some ambiguity about the interpretation of "uncontacted."

Based on Milby's tables, we calculated the 6–12 month abstinence rates for rehabilitated Methadone Maintenance Treatment Program (MMTP) patients who successfully completed detoxification. Among the 768 rehabilitated patients who entered a detoxification protocol, 33% were not using heroin 6–12 months later.

Many of the studies reviewed by Milby lack complete and consistent data. A closer inspection of studies reporting putatively better outcomes suggests that the 33% post-discharge abstinence rate may, in fact, be an overestimate and that patients who completed detoxification represented less than half the "rehabilitated" patients who began a planned detoxification protocol.

For example, Milby's review indicates a 6–12 month abstinence rate of 63% (59/94) for those who completed detoxification in Kaufman's evaluation of a long-term, residential methadone detoxification program based on therapeutic community principles (28). Actually, no estimate of post-discharge abstinence is possible for this study, since no follow-up interviews were done and "staying off methadone" is not equivalent to abstinence. Kaufman does state that 37% (20/54) of those detoxified patients who had left the program (40 others who were detoxified apparently remained in residence) had re-entered methadone treatment, indicating relapse; drug use for the remaining 34 patients was unknown.

One of the highest abstinence results for planned detoxification in Milby's review was that reported by Cushman (10), who indicated that 46% of such successfully detoxified patients remained narcotic-free for an average of 2.4 years after discharge (partly verified by

TABLE 1

Outcomes for Patients Leaving Time-Limited Methadone Programs and/or Receiving Planned Detoxification from Methadone

Study	Locale/Clinic	Method	Results	Comments
Banys et al. ^a (24)	San Francisco Veterans Admin. "Methadone Transition Treatment" (MTT)	38 subjects randomly assigned to either 80 mg or 40 mg methadone dose for 3 months followed by 3-month straight line taper to abstinence. Program included intensive psychological services to support detoxification.	Two-thirds of patients were retained until the final 2 weeks. Among those remaining in the final month, approx. 59% had opiate-positive urines. Among the 80-mg group, the percent of opioid-positive patients declined during the stabilization phase and increased during the taper phase.	The post-discharge follow-up mentioned in the paper has not appeared in the literature.
Bell et al. ^a (27)	MMTs in Australia	191 patients in an abstinence-oriented clinic and 61 patients in long-term maintenance-oriented clinic. Outcomes measured by urinalysis during first 18 months.	The abstinence-oriented clinic had a higher rate of opiate-positive urinalysis (24.2%) than the maintenance-oriented clinic (18.7), which was shown to be due to lower average medication dosage in the former, i.e., positive urines increased when methadone tapering began.	Penalties for drug use in abstinence-oriented clinic might have increased urine specimen falsification there.
Capelhorn ^a (26)	MMTPs, Sydney, Australia	152 patients admitted to an abstinence-oriented clinic (#1) and 75 admitted to maintenance-oriented clinic (#2), determined by site closest to home, were followed up a mean of 5 years after admission.	By the time of follow-up, 68% of those discharged from clinic #1 vs. 56% discharged from clinic #2 had returned to treatment (n.s.). The longer patients had stayed in abstinence-oriented treatment (#1), the more likely they were to relapse after discharge and return to maintenance (sig.).	Length of stay finding is unusual.
Sorensen et al. ^b (30)	MMTPs in San Francisco	58 patients in 3 clinics received up to 6 months of enriched support for withdrawal from methadone vs. 56 patients in 3 clinics as a comparison group. All patients wanted to withdraw and met criteria predictive of success. Follow-up 3 months after study termination.	Withdrawn from methadone at study termination — 29% of experimental vs. 20% of controls (n.s.). No sig. difference between groups in severity of drug problems, from study entry to 3-month follow-up.	Percentage relapsing to opiate use at follow-up is not reported.
Strain et al. ^a (25)	Baltimore short-term MMTP	Double-blind, random assignment of 171 newly admitted addicts to one of the 3 doses of methadone — 50 mg, 20 mg, 0 mg — for the stable dosing phase of weeks 6–20. Uniform detoxification and discharge by week 26 and post-discharge follow-up at week 36.	Fifty-four percent dropped out of treatment during stable dosing. All groups reported significant reductions in heroin and cocaine use between admission and follow-up. Those who re-entered treatment at follow-up (35% of sample) reported significantly greater reductions in drug use than those not re-entering treatment. Drug use outcomes at follow-up identical for all three dosing groups.	No biological validation of drug use. Numbers dropping out during detoxification phase not stated. Taking self-reports at face value, apparently active dosing did not improve post-discharge outcomes.

^a Time-limited methadone programs, ^b Planned detoxifications from methadone

urinalysis at follow-up). However, only 63% of patients beginning planned detoxification completed the program successfully, resulting in 29% of the original group remaining narcotic-free. Finally, only 27% of 513 patients treated in the program during an 11-year period (excluding transfers and deaths) met program criteria for planned detoxification.

A similar study by Stimmel et al. (29) reported that, of 335 patients detoxified, only 17% were considered to have "completed treatment" by the program staff. This small group did well, with 83% showing no evidence of narcotics use, as compared with 16% of those detoxified for other reasons (including voluntarily discontinuing treatment), by the time of an average 26-month post-discharge follow-up. One limitation of this study is that the assessment of treatment completion was made retrospectively by staff, who may have been influenced by subsequent contacts with previously detoxified patients, i.e., "a person was considered abstinent only if he had been seen at periodic intervals by treatment staff with neither positive signs of opiate abuse nor positive urinalysis for narcotics being found."

Lowinson et al. (20) identified about 10% (228/2814) of patients in a large methadone program as meeting criteria for planned detoxification. These patients were: in treatment for at least one year; drug or alcohol-free for at least six months; and employed, in school, or functioning as homemakers for at least six months. Of 63 patients who accepted and completed detoxification (others were still in the program) and were followed for at least three months, 22% had verified drug abstinence from illicit drugs. Although the program offered flexible, continuing counseling support, 64% did not return after detoxification, giving poor reasons, or were lost to contact. The remaining 14% had returned to methadone maintenance. Thus, even in this small group especially selected for their good prognosis and motivation to detoxify, outcomes seemed disappointing.

The only published study of planned detoxification from methadone appearing since Milby's review, that of Sorensen et al. (30), reported difficulty in detoxifying even motivated patients (see Table 1). Patients who expressed interest in withdrawing from methadone and who met predictive criteria for success (i.e., recommended by counselor, in treatment for at least six months, no opiate-positive urine for the past three months) were

assigned either to an array of supportive psychosocial services or to a comparison group (apparently the clinic's usual detoxification protocol). Only 27% of the sample tapered to zero milligrams, and there was no significant difference in completion rates between the two study groups.

3. Outcomes for Patients Leaving Methadone Maintenance for Diverse or Unspecified Reasons

Table 2 presents the findings of short-term follow-up studies (about 1–2 years) which meet the inclusion criteria for the review. [Several additional studies (31, 32) are cited in Milby's review]. The studies are very diverse and cover about 35 years of experience with methadone maintenance. Nevertheless, the results are very similar — in every study reporting the pertinent data, a majority (usually a large majority) of discharged patients returned to treatment shortly after leaving treatment or, if they did not return to treatment, were using opiates, were in trouble with the law and/or had high death rates. In studies which compared discharged patients with patients who stayed in treatment, patients who had left methadone treatment had poorer outcomes.

Few of the short-term follow-up studies of methadone patients reviewed [Ball and Ross (7) and Zanis et al. (33) are the exceptions] provide information on reasons for exit or discharge, although this information might help explain differences in outcomes (9). Several of the long-term outcome studies, however, do provide such data. ("Completing treatment" is generally defined as planned discharge or discharge with staff assent.) Stimmel et al. (31) reported better outcomes among patients who completed treatment than among patients who exited for other reasons, and concluded that length of treatment per se did not explain the better outcomes.

Dole and Joseph (32) reported on 848 methadone patients who were discharged from treatment. Only 72 (8%) were "doing well" at post-treatment follow-up, while this held true for only 2% of 217 dropouts and 1% of the 356 who were administratively discharged for behavior problems, alcoholism and intractable drug use. In this study, "doing well" meant that subjects were abstaining from heroin, were not abusing alcohol or non-opiate drugs, and had not been rearrested. Duration of street addiction, length of time in treatment, problems in treatment, type of discharge (favorable or

TABLE 2
Outcomes for Patients Leaving Methadone Maintenance Programs

Study	Locale/Clinic	Method	Results	Comments
Anglin et al. (65)	San Diego, CA	2-year follow-up of 331 MMTP patients after their treatment in a publicly financed program was terminated.	52% transferred to private methadone and other programs. 59% used heroin during follow-up period. Patients who did not transfer reported more narcotic use, property crime, drug dealing and incarceration.	Urinalysis used to help measure drug use.
Ball & Ross (7)	Six MMTPs in New York City, Philadelphia, Baltimore	Among a sample of 607 MMTP patients, 38% left treatment within 1 year (Chapter implies that funding limitations restricted follow-up of discharged patients to 107).	Within 1 year, 82% of the 107 discharged patients reported they had relapsed to IV drug use. 22% of discharged patients were "treatment completers" (they completed their detoxification and were identified by staff as "ready to become drug free"). Within 1 year after discharge 30% had returned to drug abuse treatment, 39% had relapsed to IV drug use and were not in treatment, and 30% were identified as "cured" (not in treatment and reported no IV drug use).	Since drug use is restricted to IV use, the percent reported as "cured" likely underestimates dropouts who returned to drug use. Self-reported drug use only.
Gossop et al. (66)	National Treatment Outcome Research Study (NTORS) in the United Kingdom	Included 458 patients in methadone maintenance clinics and 209 in methadone reduction programs who were followed up 6 months after treatment admission during 1995.	Approx. 50–60% of methadone patients who left the index treatment had re-entered some form of treatment within the 6-month period.	No comparison of drug use between subjects in vs. out of methadone treatment at 6 months.
Gossop et al. (67)	MMTP in United Kingdom	80 patients were followed up 6 months after discharge from methadone treatment.	71% reported using opiates within the first 6 weeks after discharge; 55% were using opiates at 6 months.	Self-reported drug use only.
Hubbard et al. (68)	National Study of Drug Abuse Treatment Outcomes (DATOS)	727 MMTP patients who were admitted during 1991–1993 and were followed up either (a) one year after discharge from the index treatment, or (b) about 2 years after admission if they remained in the index treatment. The outcome measures were self-reported occurrence of regular (weekly or greater) substance use during past year.	Those still in the index treatment 2 years after admission used heroin at one-third the rate of those who stayed six months or more, but were not in the index treatment during the past year (Table 5). (The corresponding comparison for cocaine use was unclear.)	No explicit statistical significance test was available for the result cited, but it is likely to be significant. Some patients not remaining in the index treatment entered subsequent treatment, but this was not included in the multivariate analysis. Self-reported drug use only.
Hubbard et al. (6)	National Treatment Outcomes Prospective Study (TOPS)	835 patients who were admitted to methadone in 1979–1981 and were followed up (a) one year after discharge from the index treatment, or (b) about 3–5 years after	Those still in the index treatment at follow-up (n=183) used heroin at one-half the rate of those who had stayed one year or more and were discharged (n=137) (the corresponding comparison for cocaine use was unclear). 58% of patients discharged from the index	No explicit statistical significance test was available for the result cited, but it is likely to be significant. Some patients not remaining in the index treatment entered subsequent

TABLE 2
Continued

Study	Locale/Clinic	Method	Results	Comments
		admission if they remained in the index treatment. The outcome measures were the self-reported occurrence of regular (weekly or greater) substance use during the past year.	treatment returned to treatment in the first year after discharge; presumably all had returned to heroin use, although only 17% of discharged patients reported regular heroin use during the post-discharge year.	treatment, but this was not included in the multivariate analysis. Self-reported drug use only.
Joseph et al. (41); Joseph & Appel (42)	All MMTPs in New York City	Samples of patients admitted during 1966–1967 (n=648) and 1972 (n=897), followed-up in 1976.	Death rate during treatment: 15.2/1000 person-years Death rate, first month after discharge: 90.0 Death rate, first year after discharge: 37.4 Death rate, entire post-discharge period: 35.2 Drug-related death rate during treatment: 6.0 Drug-related death rate, entire post-discharge period: 24.0 Leaving treatment is associated with greatly increased death rates, even in short-term.	Pre-AIDS era.
Kosten et al. (69)	MMTP, New Haven, CT	79 methadone patients admitted in 1977–1978, who completed at least 6 months of treatment and then left treatment for at least 6 months during a 30-month post-admission follow-up period.	Use of opioids significantly decreased after entering treatment and significantly increased in the 6 months after leaving treatment. For those re-entering treatment and remaining at least 6 months (n=44), opioid use again significantly decreased. Employment also significantly decreased after leaving treatment. There were no significant changes in cocaine use.	Self-reports of drug use only. Reasons for leaving treatment and number undergoing detoxification not stated.
Maddux & Desmond (70)	Texas MMTP	610 enrollees were followed up for 1 year. Pre-post 30-day comparisons were made between out-of-treatment subjects and in-treatment subjects.	At 1-year follow-up, 47% had continuously remained in MMT, 5% had been discharged and returned to MMT and 48% were no longer in MMT. 35% of the out-of-treatment sample was incarcerated during the 1-year follow-up anniversary month. Compared with the out-of-treatment subjects who were not incarcerated (183), in-treatment subjects reported fewer days of IV drug use in last 30; (3.7 vs. 19.9) and crime (1.5 vs. 15.2).	Drug use is based on self-report and non-injecting drug use was not reported. Although percent of subjects using drugs was not reported, the high frequency of days using drugs suggests that most out-of-treatment subjects were injecting.
Maddux & McDonald (71)	San Francisco MMTP	One-year follow-up from date of 100 patients enrollment.	26 Subjects left MMT during the 1-year follow-up. 11.5% (3/26) of the MMT discharges were identified as abstinent; the remaining 23 subjects had returned to MMT (4), were institutionalized (10), using heroin (4), dead (1) or had an unknown status (4).	Self-reported drug use only. Heroin use at 1 year for subjects still in MMT was not reported.

TABLE 2
Continued

Study	Locale/Clinic	Method	Results	Comments
			Employment at 1-year follow-up was 81% for MMT subjects and 11% for subjects not in MMT.	
McGlothlin & Anglin (72)	California MMTPs	99 patients who were discharged from methadone treatment when their Bakersfield clinic closed and 88 patients who were in treatment in nearby Tulare. Both groups followed up for 2 years after the date of the Bakersfield closure. During those years, the Bakersfield group spent 8% of non-incarcerated time in treatment vs. 73% for Tulare group.	Bakersfield group: 55% reported periods of daily heroin using during follow-up period and 30% of those not incarcerated tested opiate-positive at 2-year interview. Tulare group: Respective figures were 32% and 16%.	Consequences of involuntary termination of treatment might be less severe with more counseling preparation or access to alternatives
Perkins and Bloch (35)	MMTP in New York City	60 patients were followed up and located a mean of 2 ¹ / ₂ years after discharge. Their mean length of stay was about 8 months.	10% had died and 57% had been or were currently hospitalized for physical/mental conditions or detoxification. Of the 38 non-institutionalized or non-incarcerated respondents, 76% admitted current heroin use and 95% admitted some current drug or abusive alcohol use. Subsequent attempts at detoxification had been made by 52% (31/60) of these dropouts.	
Rosenbaum, Murphy & Beck (73)	California MMTP	25 patients who were detoxified from treatment because they would not or could not pay for treatment when their program switched from no-cost to pay-for-service.	83% reported using heroin after detoxifying.	Self-reported drug use only.
Zanis et al. (33)	Philadelphia VA MMTP	Status of 94/110 discharged methadone patients determined 1 year after discharge. 13/110 (12%) were identified as treatment completers.	10% died, 39% re-enrolled in treatment, 44% eligible for treatment (presumably using opiates) and 7% did not require treatment (presumably abstinent).	Urine specimens taken to help establish abstinence.
Zanis & Woody (43)	Philadelphia VA MMTP	507 patients: 1-year follow-up of mortality rates.	8.2% (9/110) of discharged patients died vs. 1% (4/397) of non-discharged patients. Six of the discharged sample and none of the non-discharged sample died of heroin overdose.	Discharged patients represented treatment failures since most had voluntarily dropped out or were administratively discharged for violating clinic rules. Results suggest that

TABLE 2
Continued

Study	Locale/Clinic	Method	Results	Comments
				greater efforts should be placed on retaining the most problematic patients.

MMTPs, MMT – Methadone Maintenance Treatment Programs; VA – Veterans Administration

unfavorable) and employment status were associated with post-treatment outcomes. Patients who relapsed to daily heroin use, when compared with patients who were not using heroin, had longer addiction histories (89 vs. 66 months), had shorter periods of treatment (17 vs. 47 months), were more likely to have problems while in treatment — behavior, drug abuse and arrests (76% vs. 37%), were less likely to have a favorable treatment discharge (11% vs. 81%) and were less likely to be employed at time of discharge (33% vs. 58%). Gender, ethnicity and education were not predictors of post-treatment outcomes.

A long-term outcome study found that relapse to opiate use occurred for 56% of the treatment completers, 76% of the dropouts, and 84% of those expelled (34). In a short-term outcome study, Ball and Ross (7) found that 30% of discharged treatment completers had not returned to treatment and reported no injecting drug use at one-year follow-up. Thus, even among small groups of treatment completers, only a minority appears to be opiate-free at follow-up.

Discussion

Outcome data reported for more than 30 methadone discharge studies reviewed in this paper lead to three main conclusions: (a) most patients who left methadone treatment were not identified by their clinic as therapeutically ready for discharge; (b) among patients who began a therapeutically planned discharge, most left methadone treatment before completing their detoxification; and (c) among patients who completed a therapeutically planned discharge, most relapsed to heroin use.

Difficulties in identifying patients suitable for detoxification and the likelihood of poor post-discharge outcomes were recognized soon after methadone treatment was established. One of the earliest concerns was raised by authors of

a 1971 study (35) (see Table 2): “The post-discharge course of the 60 located heroin addicts who failed to continue in the methadone program appears to be in striking contrast to those who are reported as successfully maintained. Death, criminal-legal involvement, incarcerations and hospitalizations, and continued drug abuse patterns appear to be great risks for this group. . . . We believe this evidence suggests that intensified efforts to retain addicts may be needed in methadone programs. . . . We believe that measures that would make current programs more stringently regulated might have the effect of extruding [sic] more patients from the present system of care, and hence might consign more addicts to the street with a very poor prognosis for rehabilitation.”

Cushman (10), who reported a relatively high post-discharge abstinence rate (46%) for patients who completed a planned detoxification, soberly concluded that “detoxification should not be a realistic goal for all patients who enter treatment,” apparently countering the critics of methadone who were asserting that it should be. Further, “the number of patients who achieved an enduring narcotic-free state was low in relation to the number of patients treated and the duration of treatment . . . although there are some who achieve this laudable goal (enduring abstinence), there are many who fail even the process of detoxification and many who have a relapse to opioid use at various times during the completion of the detoxification process.”

Another early investigator (10), whose study generated comparatively positive outcomes, wrote: “Even those persons who were highly motivated to be detoxified [voluntary detoxification] . . . [had] an impressive return to narcotic use. . . . Abstinence . . . does not appear to be a realistic goal for all, and . . . premature detoxification . . . with subsequent relapse to illicit heroin use, is prevalent. . . . It is

important not to establish any specific criteria or regulations concerning the length of time that one should receive methadone therapy. Therapeutic plans must be individualized and detoxification, if considered appropriate, should be accomplished in a careful and well-planned manner that does not result in abrupt termination of program services.”

Most of the reviewed studies are based on self-reports of drug use at follow-up. Research comparing biological indicators of drug use (urinalysis, hair analysis) with self-reports indicates that one-half or more of discharged drug-dependency-treatment clients who test positive for opiates or cocaine at follow-up fail to report use of these substances (36–40). Nevertheless, virtually all studies which address the issue document high rates of opiate use at follow-up, despite reliance on self-reporting!

The greatly increased death rate that occurs after patients leave treatment, which is primarily drug-related, is particularly noteworthy (41–43). This is supported by an earlier long-term mortality study in New York City (44), which reported a death rate of 7.6/1000 for patients while in treatment during 1964–1972 vs. 28.2/1000 while they were not in treatment. Considerable evidence was presented, showing that patients who leave methadone treatment have a high rate of relapse to opiate use during the year after treatment, that they use opiates at much higher rates than patients who remain in treatment, and that very few discharged patients have a planned discharge and gradual detoxification from methadone.

It could be argued that we ought to target more patients for therapeutically supported detoxification. However, as we have seen, early attempts within methadone maintenance programs (23) and more recent attempts in extended methadone detoxification programs (24–27, 30) have not been successful. In fact, given the finding cited in Table 1, that patients who were doing well on adequate methadone doses were likely to increase their heroin use when undergoing detoxification (24), programs should be very conservative when implementing a methadone-to-abstinence protocol.

In addition, relatively few patients today are able to meet accepted clinical criteria for planned methadone withdrawal (74); e.g., they do not have the requisite periods of abstinence from all drugs of abuse, they are not employed or otherwise financially stable, and they may

have physical and mental health problems that render them highly vulnerable to relapse (7, 14, 45). The presence of treatment challenges faced by methadone programs is consistent with the finding that treatment completion as a reason for discharge from methadone maintenance treatment is becoming relatively infrequent. For example (46), in a multi-clinic sample in New York City, only 2% of discharges (13/634) during 1989–1993 were classified as having “completed goals.” It has been observed that the crack and AIDS epidemics among drug users beginning in the mid-1980s have greatly increased the challenge of rehabilitating heroin addicts (47–49).

The persistence of problems while in treatment and the increase in problems after leaving treatment does not imply the absence of greatly improved or rehabilitated patients who remain in methadone maintenance. In the same multi-site study cited above (14), about 80% of new admissions to methadone programs started in or transitioned to a low heroin use group, and 50% started in or transitioned to a low cocaine/crack use group within three years of treatment.

In addition, there are important public health reasons, which this paper has not reviewed, to avoid early departures from methadone treatment. There is substantial evidence that participation in methadone treatment reduces the risk of HIV infection. Intravenous drug use, a prime vector of HIV transmission which historically has been strongly associated with heroin use, declines dramatically after entry to methadone maintenance (7, 49). Correspondingly, patients in treatment less than one year have a far greater HIV seroprevalence rate than those participating for longer periods (50, 51). Retention in methadone maintenance also has a protective effect against infection with hepatitis C (52). A complete current review of the public health benefits of methadone maintenance may be found in Ward et al. (9).

The paucity of planned discharges from methadone treatment does not seem attributable to the program itself. First, patients in maintenance-oriented programs have always had the right and opportunity to request planned, extended detoxification; there is no evidence that programs have placed barriers in the way of such requests. Second, research has documented widespread “abstinence-oriented” attitudes among methadone program staff, particularly the line staff who usually are a program’s most salient contacts for patients.

For example, in a typical group of New York City clinics, one-quarter of the counselors were unfavorable to the concept of long-term methadone maintenance and another one-half displayed ambivalent attitudes (53). Other studies have documented the prevalence of similar abstinence-oriented attitudes among methadone staff (54–56). Thus, methadone staff appear to be generally favorable to facilitating patients' withdrawal from methadone.

One factor implicated in the reluctance of patients to request discharge is "detoxification phobia," attributed to a fear of opiate withdrawal symptoms (57), and the concomitant belief that withdrawal from methadone is more severe/protracted than from heroin (58, 59). This belief about methadone withdrawal may find some basis in self-detoxification experiences, since addicts typically leave methadone treatment without tapering off. If they cannot subsequently procure adequate (or use inadequate) amounts of heroin or other opiates, they will have unpleasant withdrawal symptoms. It generally has been believed that under medical supervision, an extended taper to withdraw from methadone will prevent discomfort. This "conventional wisdom" must be tempered by a recent finding (60) that "the development of an organic mood syndrome is a common occurrence in patients undergoing slow detoxification from methadone maintenance and is associated with a poor outcome." Whether this effect is specific to methadone withdrawal or applies generally to opiate withdrawal could not be answered by the study.

In addition, the apparent long-term opiate abstinence syndrome is still poorly understood. The prevalence of continuing or recurring opiate "craving" or "hunger," even after successful physiological withdrawal from opiates, is a compelling rationale for being conservative about planned withdrawal from methadone treatment, certainly for long-term addicts.

The hard fact is that we do not yet know how to improve post-detoxification outcomes for methadone patients. Certainly, addressing the relationship between patients' affective states and the protracted withdrawal syndrome (61) is a line of investigation worth pursuing. Research should also be conducted on methods to reduce the stigma and regulatory demands associated with methadone maintenance therapy. Consideration should be given to expanding methadone medical maintenance

(MMM) (62, 63). Until we learn more through careful research, it is unwise to structure methadone programs and their financing so as to discourage or impede long-term maintenance, and at the same time to pressure patients overtly to accept abstinence by heralding its supposed desirability or superiority (64).

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