Providing Medical Care to Methadone Clinic Patients: Referral vs On-Site Care

ABSTRACT

Objectives. Intravenous drug users are at high risk for medical illness, yet many are medically underserved. Most methadone treatment programs have insufficient resources to provide medical care. The purpose of this study was to test the efficacy of providing medical care at a methadone clinic site vs referral to another site.

Methods. Patients with any of four target medical conditions were randomized into an on-site group offered medical care at the methadone treatment clinic and a referred group offered medical care at a nearby clinic. Entry to treatment and use of medical services were analyzed.

Results. Of 161 intravenous drug users evaluated, 75 (47%) had one or more of the target medical conditions. Fifty-one were randomized. In the on-site group (n = 25), 92% received medical treatment; in the referred group (n = 26), only 35% received treatment.

Conclusions. Providing medical care at a methadone treatment program site is more effective than the usual referral procedure and is a valuable public health intervention. (*Am J Public Health.* 1994;84:207–210)

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Introduction

Intravenous drug users are at high risk for medical problems.[1–7] A substantial portion of this population consults physicians only for catastrophic health crises (mostly through emergency rooms); they also tend to show poor compliance with treatment.[8] Alternative approaches to health care delivery to intravenous drug users are needed. Integrating medical services into addiction treatment clinics has the potential for improving the prevention and treatment of diseases in this population,[9] and methadone treatment is effective in decreasing high-risk behaviors such as intravenous drug use and needle sharing. The acquired immunodeficiency syndrome (AIDS) epidemic has renewed public health interest in methadone treatment and in the need for delivering effective medical care to intravenous drug users. Some studies have shown that treatment of human immunodeficiency virus (HIV) infection or tuberculosis is feasible at methadone treatment clinics[10]; however, the relative efficacy of such interventions has not been documented.

Providing comprehensive medical care at a methadone treatment clinic offers an opportunity to screen for diseases and promote health education and behavioral changes. When patients come to the clinic to receive methadone, their compliance with other treatments can be promoted and/or directly supervised.

This study assessed the prevalence of four target medical conditions in a population of intravenous drug users seeking treatment for their addiction and compared the effectiveness of two methods for addressing these conditions: direct medical treatment at the addiction treatment clinic site (on-site care) and referral to a medical clinic (referred care), which is the usual procedure.

Methods

Recruitment, Eligibility, and Randomization

The study site was a hospital-based methadone treatment research clinic in southeastern Baltimore. The patient population consisted of opioid-dependent drug users; many were also using other drugs, mainly alcohol and cocaine. Patients received a medical examination on admission to methadone treatment. Medical care was free for the duration of the study if patients agreed to participate in a randomized trial that involved receiving medical care at the drug treatment site (on-site group) or being referred to a nearby medical clinic (referred group). Participants provided written informed consent. Those who needed further medical care for any of four target conditions and who had no primary care physicians were randomized. The target conditions were hypertension, purified protein derivative conversion (tuberculosis exposure), positive HIV serology (asymptomatic), and acute sexually transmitted diseases. At randomization, all patients were seen by the on-site medical staff and informed of their medical condition, need for treatment, and need for HIV posttest counsel-

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TABLE 1—Demographic, Social, and Diagnostic Characteristics of the Two Groups

	On-Site Group (n = 25), No.	Referred Group (n = 26), No.
Men	17	20
Non-Whites	16	19
Working status		
Working	5	6
Unemployed	17	17
Disabled	1	2
Marital status		
Single	11	10
Married	3	7
Divorced or separated	8	9
Insurance status		
Medical assistance	10	10
Private	2	7
None	13	8
Source of care		
Emergency room	19	17
Continuous care[a]	4	7
Reason for initial referral[b]		
HTN	4	3
PPD	7	9
HIV positive	7	4
STD	7	10
Distribution of diagnoses[b]		
HTN	4	3
PPD	8	14
HIV positive	7	4
STD	9	13

Note. HTN = hypertension, PPD = purified protein derivative, HIV = human immunodeficiency virus, STD = sexually transmitted disease.
[a]Continuous care by private physician, hospital clinic, or health maintenance organization.
[b]Patients could have several diagnoses but only one reason for initial referral.

ing. Patients randomized to the on-site group were treated immediately, or a follow-up appointment was arranged. The medical staff was actively involved in offering care to patients. Patients randomized to the referred group were instructed to contact a medical clinic located on the same campus as the addiction clinic, received written instructions describing the clinic location, and were given the telephone number of the clinic. The referred patients were responsible for obtaining an appointment at the medical clinic, where a physician was available twice a week; there was no waiting list, and appointments could be obtained within 4 days. To facilitate interactions with personnel at the medical clinic and ensure proof of coverage, all administrative information was collected by the research assistant at randomization and communicated to the clinic. To avoid economic confounds, the study covered the cost of medical care, including medications, for 3 months after randomization.

Patients were interviewed by a research assistant at 4 and 8 weeks after randomization. If a patient had not received medical treatment by week 4, the on-site medical staff stressed the importance of such treatment. A patient remaining untreated at week 8 was considered a treatment failure. For those patients still enrolled in drug treatment, medical care was then offered on-site. This "rescue treatment," of which patients were unaware, was arranged for ethical reasons. (Rescue treatment was offered to patients with acute sexually transmitted diseases at week 4).

At the end of the study, patients were referred to medical clinics elsewhere. Patients without insurance at enrollment were assisted in applying for medical assistance or other benefits.

Medical Evaluation

Hypertension. Patients with a diastolic blood pressure of 100 mm Hg or more were randomized. Patients with a diastolic blood pressure of 95 to 100 mm Hg were randomized if their blood pressure remained elevated after the first week of drug treatment.

Tuberculosis exposure. Patients with no prior history of tuberculosis exposure were tested with five standard tuberculin units (by intradermal injection) and examined 48 hours later. A reaction was considered positive if an induration of 5 mm or more was noted. (This represents the Centers for Disease Control recommendation for individuals who are HIV positive; because HIV status was unknown, these guidelines were extended to all patients.)[11,12]

Sexually transmitted diseases. Rapid plasma reagin (RPR) was obtained. In men, a first-stream urine was tested for leukocyte esterase and pyuria (more than five white blood cells per high-power field). Patients with positive urine were randomized, and a urethral sample was then analyzed for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* by DNA probe.[13] Women were screened with a Pap smear and tested for *Candida albicans, Trichomonas vaginalis, N. gonorrhoeae,* and *C. trachomatis.* Although we strongly stressed the importance of the pelvic examination, women were allowed to refuse it.

HIV. Written informed consent was obtained after pretest counseling. If patients accepted testing, their blood sample was tested confidentially. Patients with symptomatic HIV infection (AIDS-related complex, AIDS) were referred to specialized clinics for care and were not randomized.

Addiction Treatment

Patients were enrolled in combined pharmacological and counseling treatment protocols for their drug addiction. The details of these protocols are beyond the scope of this paper.

Data Collection

Medical charts of newly admitted patients were reviewed weekly. A flow sheet was maintained to record the medical conditions and treatment assignment. The patient's counselor received a portion of the flow sheet to help coordinate addiction and medical treatment.

Enrollment in medical care was recorded, by patient interview and chart review, at 4 and 8 weeks after randomization. Primary outcome measures were number of visits per patient (visits for other medical conditions were not counted) and whether patients complied with the treatment plan (treatment rate per diagnosis).

Statistical Analysis

Comparisons between the two groups were made with *z* tests for proportions on dichotomous variables; *t* tests were used on continuous variables.

Results

Prevalence of the Target Medical Conditions

Of 161 patients evaluated, 75 had one or more of the target conditions: 12 had hypertension, 26 evidenced purified protein derivative conversion, 24 had positive HIV serology (27 [18%] refused testing), and 29 had sexually transmitted diseases (14 [25%] of 57 women refused pelvic examination).

Patient Characteristics

The characteristics of the 51 patients who were randomized are shown in Table 1. There were no significant differences between the two groups on any of the listed variables or in addiction treatment modality.

Enrollment in Medical Treatment

Of 25 patients randomized on-site, 23 (92%) enrolled in medical treatment and

complied with medical recommendations. Of 26 patients referred off-site, only 9 (32%) enrolled in medical treatment (8 enrolled at the assigned off-site clinic and 1 called a physician for a prescription). The difference between the two groups was statistically significant ($P < .001$).

Table 2 describes the medical care received by the two groups. All patients in the on-site group were seen at least once regarding their medical condition(s), 23 accepted treatment, and 19 (76%) had one or more additional follow-ups. The average number of visits per patient was 3.1 (SD = 1.8); the treatment rate per diagnosis was 88%. In the referred group, 8 patients (31%) were seen once at the off-site medical clinic and 1 obtained treatment elsewhere; of 5 patients scheduled for follow-up, 1 returned. The treatment rate per diagnosis was 28%.

The greater overall efficacy of the on-site procedure was corroborated in analyses within each of the four individual target medical conditions.

Hypertension. Four patients in the on-site group were successfully treated with normalization of their blood pressure (three with behavioral treatment, one with pharmacological treatment). Of the three patients in the referred group, two were started on antihypertensive therapy but did not return.

Tuberculosis exposure. Of 8 patients in the on-site group, 1 remembered prior tuberculosis treatment as a child. Of the 7 remaining patients, 6 obtained a chest x-ray. Chemoprophylaxis was indicated and administered at the methadone window to 1 of them. In spite of three medical visits, 1 patient did not comply with the request for chest x-ray. Of 14 patients in the referred group, 1 had a history of previous treatment. Of the remaining 13, only 3 obtained a chest x-ray. The rescue treatment allowed an additional 3 patients to be evaluated on-site, and 1 of them received chemoprophylaxis.

HIV. Of seven patients in the on-site group, five gave blood for the CD4 cell count, and two patients meeting criteria for retroviral therapy received zidovudine (AZT). Two patients refused further evaluation; one of them was seen seven times for intensive counseling, and both were referred to HIV clinics. Of the four patients in the referred group, only one came for the CD4 cell count. This patient's follow-up was interrupted involuntarily (by incarceration).

Sexually transmitted diseases. Of 9 patients randomized to the on-site group, 8 were treated successfully (1 twice, after reexposure). One patient with secondary syphilis completed appropriate therapy, and 1 patient with treated syphilis did not need further care. Of the 13 patients randomized to the referred group, 4 received treatment. Another patient with treated syphilis did not require treatment. Two other patients received rescue treatment on-site.

TABLE 2—Treatment Information for the Two Groups

	On-Site Group (n = 25)	Referred Group (n = 26)	P
No. of patients seen one or more times	25	8	<.001
No. of patients seen two or more times	19	1	<.001
No. of visits per patient, mean ± SD	3.1 ± 1.8	0.4 ± 0.6	<.001
Treatment rate, %[a]	88	28	<.001

[a]The denominator is the number of diagnoses rather than the number of patients.

Discussion

More than 45% of intravenous drug users seeking methadone treatment presented with a condition requiring medical care. When on-site medical care was available, more than 90% received treatment; when referred medical care was available, only 35% received treatment.

Prevalence of Medical Conditions

Among intravenous drug users seeking addiction treatment, we found that half had a condition, often unknown to them, that required medical care. This is a conservative assessment, because our study recorded only four target medical conditions. Three of these conditions (tuberculosis, sexually transmitted diseases, and HIV infection) currently represent serious public health threats because they reach epidemic proportions not only among intravenous drug users but also among their close contacts. Because of their asymptomatic course, it is important that they be detected and treated in a timely and effective manner.

Although not reported in this study, we found that many more patients suffered from other medical conditions such as soft-tissue infections, liver damage, respiratory diseases, and anemia. For ethical reasons, these conditions were treated by the on-site medical staff.

Efficacy of On-Site Care

In the on-site group, 92% of intravenous drug users entering addiction treatment received medical care, with a treatment rate per diagnosis of 88%. In comparison, in the referred group (with optimal referral conditions), only 35% of patients received medical care for the same conditions, with a treatment rate per diagnosis of 28%.

The difference in enrollment for medical care between the two groups may reflect, in part, a difference in providers' behavior rather than patients' behavior. In the drug treatment program, the medical team used nontraditional doctor–patient approaches: accepting unscheduled visits (initiated when "spotting the provider in the hall") and rescheduling several times for missed appointments. Coordination with the nurses dispensing methadone was of prime importance: they reminded patients of their medical appointment and, when needed, "held" the methadone temporarily until patients reported to the medical provider. Furthermore, compliance with medical treatment could be fostered by administering other medications along with the methadone. No patient was coerced into accepting medical treatment, but avoiding interaction with the medical staff was difficult.

We noted that patients used the on-site medical services extensively for other conditions or for health education. This suggests that intravenous drug users are interested in health care when it is available.

The presence of medical providers at the addiction treatment clinic site alleviated some of the burden usually carried by nurses or counselors alone. These providers assisted in the evaluation of acutely ill patients and reduced the need for referral to local emergency rooms.

Providing medical care to intravenous drug users remained a challenge, even at an addiction treatment clinic site; however, the study showed that this type of health care delivery resulted in high enrollment in medical care and an excellent treatment rate, whereas the usual referral process resulted in an unacceptable loss of patients to medical care.

While the emphasis of the present discussion is that methadone clinics can

enhance medical treatment efficacy, it should be noted that recent research[14] also suggests the converse: providing medical and psychosocial services can enhance the efficacy of addiction treatment. Given the current infectious disease epidemics, intravenous drug users should have increased access to methadone treatment providing comprehensive care.

This study is, to our knowledge, the first controlled randomized trial to test the efficacy of providing primary medical care at an addiction treatment site. The high prevalence of medical conditions in this population may be sufficient rationale, at least on a humanitarian basis, to provide medical care at addiction treatment clinics. The superior efficacy of this approach, as documented here, further strengthens this rationale. Additional study is needed (e.g., assessments of emergency room visits or hospitalizations) to evaluate the cost-effectiveness of providing medical care at addiction treatment sites.

Barriers to Referred Medical Care

For several reasons, intravenous drug users are unlikely to use traditional medical services. Many fear discriminatory or hostile behavior from the medical staff in general clinics or hospitals.[15,16] If the drug users are hospitalized, their methadone treatment may be discontinued and the resulting withdrawal symptoms not adequately treated.

Many fear the stigma of being labeled HIV infected if seen in an addiction treatment clinic.

Medical practices tend to avoid referrals from drug treatment clinics. Four medical practices were asked to serve as referral sites for this study, and, although occasional individual physicians (with some training in addiction medicine) agreed to participate, all four practices refused. This was especially notable given that the study guaranteed fee payment, including a fee for "missed appointments." This reluctance to provide care to drug users appeared related to concerns about the behavioral stereotypes of the population, as well as possible economic risks after the conclusion of the study.

For intravenous drug users entering drug abuse treatment, the active planning required to obtain health care (such as scheduling an appointment and arranging for timely transportation) involves a level of structured behavior that is a goal of, rather than a prerequisite for, addiction treatment. Medical and addiction clinics rarely coordinate opening hours, thus complicating the patient's task further.

If drug treatment clinics are to provide screening for diseases such as tuberculosis, HIV infection, and sexually transmitted diseases (as federal guidelines currently recommend), they should also be able to provide medical treatment; issues of confidentiality restrict communication between providers, and patients often misunderstand their medical conditions.

Finally, this study featured an optimal referral process; detailed oral and written information on how to contact the clinic was provided, and all monetary obstacles were removed. Still, only 35% of the referred group enrolled in medical care. In reality, compliance with the usual referral procedure is probably less successful, because patients may lack adequate health care coverage (in our program, 40% of the patients had no insurance).

Conclusions

This study demonstrated a high prevalence of concurrent medical conditions requiring further care among intravenous drug users entering addiction treatment. When medical care was available on-site at the addiction treatment clinic, nearly all received care. When medical care was available through the usual referral procedure, few received care. These data argue for the effectiveness and public health value of providing medical care resources within addiction treatment clinics. □

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