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THE TREATMENT OF DRUG ABUSERS

EDWARD C. SENAY

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The Treatment Of Drug Abusers[1]

Introduction

The definition of drug abuse depends upon the vantage point of the person defining it. In the emergency room, drug abuse is a serious medical psychiatric problem. The proportion of cases with drug-related problems presenting in general hospitals is slowly and unquestionably growing, although it is not of the same order as that associated with alcoholism. In the classroom, drug abuse is a perplexing and unresolved problem in education and prevention. In the school, medical aspects are not prominent, but social features are, and the drug-abuse problem is closely related to the problem of delinquency. In the courtroom, drug abuse is a major legal problem; various estimates place the proportion of inmates with drug-related offenses in State and City prison systems somewhere between one and three quarters (Dole, 1972). From the vantage point of a Mayor or a Governor, drug abuse is a political problem of serious dimensions because of its relationship to street crime. The drug crisis in U.S. troops during the Viet Nam war generated direct Presidential concern and major governmental response.--The legal, educational, and political problems associated with drug abuse should be understood by the psychiatrist, if he is to achieve maximum therapeutic results.

From every vantage point drug abuse should be defined as a social problem with major medical-psychiatric and legal aspects (Senay, 1972). It is established that drug abuse begins as an affliction of adolescence, although since the late 1960s younger age groups are also becoming involved. Drug experimentation begins in adolescent groups and peer-to-peer transmission is responsible for epidemics (Freedman, 1973). Epidemics occur now in all strata of society but are most malignant when they occur in disadvantaged minority groups in the inner city (Hughes, 1972). In these groups it is particularly important to recognize the essentially social nature of this problem. For those caught in the frequent drug epidemics sweeping through inner-city neighborhoods, the prescription of a job is of greater ultimate import than the prescription of methadone or of any form of psychotherapy. It appears that although some progress has been made (DuPont, 1973), innovative social programs will be required if we are to make any real inroads into the problem of drug abuse (Millman, 1972). Treating cases does nothing to alleviate the conditions responsible for creating the cases in the first instance, and if one defines the problem solely in medical-psychiatric terms, one is forced to watch the cycle of improvement through treatment followed by repeated relapse, because the medical model can achieve only limited success with what is essentially a social problem.

Before turning to the issues of treatment, it is also important to understand that there is a subtle and very important issue involved in the

politics of drug abuse; namely, the relationship between the government and the mind and body of the citizen. Powerful politicians and professionals concerned with drug abuse call for compulsory testing of the urine of all school children with involuntary treatment for those detected. Indeed, such an approach has been the backbone of the Armed Forces strategy of drug abuse prevention and treatment (Wesson, 1972). Tennant states (1972) that the approach was so successful that civilian application is justified. Heroin addicts are compared with smallpox carriers with the merits of "quarantine" in prison or on islands (both perhaps for life) debated. Federal registration of all addicts in treatment could become a reality. The social context in which treatment occurs then is changing as the balance between individual freedom and society's need for protection appears to be shifting in ponderous, uncertain, and some would say in ominous fashion (Dumont, 1973).

Acute Treatment of Opiate and Polydrug Abuse

In this discussion we will follow the generally accepted division of clinical problems in drug abuse into those associated with opiates, e.g., heroin or Demerol dependence, and those associated with so-called polydrug abuse. Such definitions are not precise, but a generally accepted nosology of drug problems does not exist.

In the treatment (Jackson, 1973; Shick, 1975) of the drug dependent one

must be prepared to deal with acute physiological and/or psychological crises, and also with long-term treatment of chronic problems. Acute treatment per se cannot cure a chronic drug abuser; its goals are to preserve life, to alleviate pain and suffering, and to encourage the person to seek long-term treatment. It has been said that it is absurd to expend effort on the acute management of a drug abuser who may return a week later with the same problem; but surely this is a legitimate function of the physician, just as much as providing cardiac care for the patient with irreversible atherosclerosis, or chemotherapy for the terminal-cancer patient. In the past, an attitude of moral judgment by society made it difficult for a drug abuser to get the necessary medical attention but this has improved as physicians and hospital administrators have become more aware of these problems and as treatment programs have expanded. Treatment efforts principally based on the work of Dole and Nyswander (1965; 1967), and Diederich, as cited by Casriel (1971) and Yablonsky (1969), have dispelled the apathy that once characterized the field.

General Considerations of Acute Treatment

The issue of trust is a problem in all phases of treatment of the drug abuser, but it is particularly important in the acute phase. The patient, being possibly liable for criminal prosecution, and possibly suspicious due to drug effects, may be understandably reluctant to tell the truth. However, a

demonstration of understanding and helping the patient should elicit cooperation. If the patient is a juvenile, the psychiatrist may be required to notify the parents; there is much variation between States on this point. It is also necessary to understand that the current youth culture makes it difficult for its members to admit the need for help from other than its own members (Roszak, 1968). Furthermore, this culture puts a premium on "putting down" people in authority. In dealing with drug abusers, the physician will find it useful to focus on the job at hand and to avoid responding to provocations, while exhibiting a willingness to learn about the patient and his world.

After the history has been taken, it may be useful to examine the patient for old and fresh needle marks. If it appears that he has used drugs intravenously, he may have complications, such as skin abscesses or hepatitis. Less common disorders associated with the life style and mode of drug use include tuberculosis, venereal diseases, endocarditis, pulmonary granulomas, tetanus, malaria, ulceration of the nasal mucosa and emboli in lungs and eyes (Johnson, 1972; Sapira, 1968).

Opiate Overdose

Overdose of narcotics has become a frequent problem in hospital emergency rooms. The question of whether death from overdose is directly caused by ingestion of a lethal dose of narcotics, or by some synergism of

opioids and alcohol or sedatives, or by some little-known allergic phenomenon, has been the subject of controversy." In any event, treatment involves the following procedures:

1. Clear airway, maintain respiration artificially, and administer oxygen.

2. Administer narcotic antagonists, e.g., Naloxone • HCi, 0.4-1.2 mg. IV (pediatric dose 0.05 mg./kg); Levallorphan tartrate, 1-3 mg. IV (pediatric dose 0.075 mg./kg); Nalorphine • HCi, 5-10 mg IV (pediatric dose 0.1 mg./kg.). Naloxone is the drug of choice (Evans, 1973), with a high therapeutic margin of safety, but it has not yet been approved for administration to children and neonates. In uncomplicated overdose, response to administration of antagonists is dramatic and diagnostic. Failure to see prompt improvement in the respiratory rate implies that factors other than opiates are responsible for the respiratory depression which characterizes opiate overdose. The following considerations should be kept in mind when administering antagonists:

   a. Narcotic antagonists specifically antagonize opioids. They may aggravate respiratory depression if caused by other CNS (central nervous system) depressants, although Naloxone appears safe in this respect. In addition Naloxone appears to be effective in Pentazocine overdose, while other antagonists are not.

   b. Antagonists are effective for only about two hours and repeat doses may be necessary. Heroin may remain active for six hours,

methadone for twenty-four hours, and L-alpha-acetylmethadol for forty-eight to seventy-two hours, so care must be taken not to release the patient prematurely. As a rule of thumb, one should observe all opiate overdose cases for at least twenty-four to forty-eight hours in the hospital. Even after discharge someone should be with the patient at all times for another one- to two-day period.

c. In an active addict, antagonists can precipitate a very powerful withdrawal syndrome. They should be given in doses large enough to stimulate consciousness, but not so large as to cause severe withdrawal.

3. Manage pulmonary edema if present.

4. Treat for shock if indicated.

5. Treat secondary complications if present.

Opiate Withdrawal

The opiate-withdrawal syndrome, while seldom fatal, can cause great suffering, and should be treated medically (Jaffe, 1965). There is no rationale for "cold turkey" withdrawals under any circumstances, because effective treatment is simple, inexpensive, and can be accomplished in any setting. The treatment of choice is to stabilize the patient on methadone and then to withdraw this drug gradually. The general principle in withdrawal is to provide the addict with sufficient drug to eliminate withdrawal signs without

causing mental clouding or a “high,” and then to reduce dosage gradually. In all withdrawal attempts, constant clinical monitoring is necessary, for it is common for heroin addicts to be also addicted to sedatives or to alcohol. In the instance of multiple dependencies the safest technique appears to be to withdraw one drug at a time, while stabilizing the patient on whatever other drugs he may be addicted to, e.g., chlordiazepoxide for alcohol, and barbiturates for barbiturate dependence, while methadone is withdrawn in a patient who is severely dependent on alcohol, barbiturates, and heroin. Since heroin addicts are notoriously manipulative, more attention should be paid to objective withdrawal symptoms, e.g., lacrimation, rhinorrhea, pupillary dilation, and piloerection, than to subjective reports. Frequently a single oral dose of 20 mg. methadone suppresses withdrawal. If 20 mg. fails to suppress symptoms, 5- or 10-mg. increments may be given until symptoms are suppressed; then the dose may be reduced approximately 1-5 mg. per day until abstinence is achieved.

If the addict was using methadone, he may require a higher initial dosage and more gradual reduction. In uncomplicated cases, that is, without coexisting major medical or psychiatric problems, detoxification from heroin can be achieved in seven to ten days, while detoxification from methadone may require more time, particularly if high doses were used. Withdrawal of methadone in patients who have been maintained on this drug for years is an area of research at present (Cushman, 1973). Clinical experience certainly

indicates that the difficulties in achieving abstinence are substantial for many of these patients. Methadone-maintained patients requesting to be withdrawn should be counseled and their motivations reviewed prior to any attempt to achieve abstinence. As a rule of thumb, patients who attempt to withdraw because of external pressure, e.g., from peers or governmental regulations, do not appear to do well. The patient who has made steady progress and wants in his own right to become abstinent has the best prognosis (Dole, 1973). The abstinence attempt should occur at a time in which other areas of the patient's life are relatively free of stress, and continued counseling should be provided on a regular basis for at least one year following complete abstinence.

Before release from treatment for overdose or withdrawal, every effort should be made to encourage the addict to seek long-term treatment. It cannot be overstressed that the physician and the treatment team's ability to create at least minimal trust in the patient is significant in affecting the amount of drug required, the length of withdrawal, and in creating the conditions for a successful rehabilitation.

Sedatives and Minor Tranquilizers Overdose

An overdose of sedatives, as with opiates, is potentially life-threatening. Symptoms range from mild intoxication, similar to drunkenness, to deep

coma and death. All CNS depressants, if taken in sufficient quantity, appear to produce a similar comatose state, although many investigators feel that opiate overdose produces a characteristic “shallow coma” with low respiratory rates (4-6 per min.). The CNS depressants are synergistic. Treatment is essentially symptomatic and medical in the acute phase. The following measures are recommended:

1. Gastric lavage only if drug was taken orally, recently, and the patient is conscious.

2. Use respiratory support such as intubation and mechanical ventilation if necessary. Administer oxygen in high concentrations, preferably at tidal volume of 12-15 cc./1 kg. body weight.

3. Treat shock with IV fluids and vasopressor if indicated. Monitor electrolyte balance.

4. Continue monitoring of vital functions until consciousness returns. Treat cardiovascular problems symptomatically.

5. If barbiturates are implicated, diuresis and alkalinization of urine is helpful. Dialysis may be useful. Analeptic drugs are probably contraindicated.

6. Upon recovery, care must be taken with respect to possible suicidal potential (CNS depressants are commonly used in suicide attempts) and possible addiction to CNS depressants.

Sedative Withdrawal

All sedatives and minor tranquilizers are potentially addicting, particularly short-acting sedatives. Withdrawal is medically more serious than is the case with opiates; very abrupt withdrawal, for example, carries the risk of death (Wesson, 1972). It is thus imperative that such withdrawal be conducted under close supervision in a hospital setting. Recently outpatient withdrawal has been described, and there may be circumstances in which it may be the only approach possible (Smith, 1971).

Withdrawal from short-acting sedatives begins within twenty-four hours, although the withdrawal syndrome from longer-acting sedatives may not occur for several days following abstinence. Nervousness, anxiety, insomnia, abdominal cramps, nausea and vomiting, disorientation, hallucinations, coarse tremors, hyperreflexia, and convulsions may be observed in variable subsets.

Treatment

The CNS depressants, including sedatives such as the barbiturates Methaqualone and Glutethimide, minor tranquilizers, and alcohol are cross-tolerant, and theoretically withdrawal syndromes may be treated identically with short-acting barbiturates. However, it is established practice that barbiturates are used for withdrawal from sedatives, while a minor

tranquilizer, such as Chlordiazepoxide or Diazepam is used for alcohol withdrawal. Given the demonstrated effectiveness of these drugs in these conditions there is no compelling rationale for change.

Berle, Ganem, and Lowinson find that alcohol/sedative addicts can be detoxified safely with sodium amytal, according to the following schedule (1972):

Day 1: four doses of 250 mg. IM QID or eight doses of 125 mg. IXI every three hours.

Day 2: four doses of 200 mg. orally QID.

Day 3: four doses of 100 mg. orally QID.

Day 4: three doses of 100 mg. orally TID.

Day 5: two doses of 100 mg. orally BID.

Day 6: two doses of 50 mg. orally BID.

Day 7: one dose of 50 mg. orally, twenty-four hours after previous dose.

Of course, the appearance of signs of withdrawal, such as restlessness or hyperreflexia, indicates that additional sodium amytal may be needed. Others have had similar success using Secobarbital or Phenobarbital.

Stimulant Abuse

Stimulants, including many amphetamine derivatives, Phenmetrazine, methylphenidate, cocaine, and others, are more widely abused than generally recognized (Ellinwood, 1972). In view of their substantial danger of abuse, medically approved stimulants should be prescribed carefully and only when the benefits exceed the potential dangers implicit in these drugs. When grossly abused, all stimulants produce a similar clinical picture, including some or all of the following symptoms (Evans, 1973):

1. Insomnia.

2. Anorexia, with possible malnutrition.

3. Hypertension, tachycardia, elevated body temperature.

4. Dilated pupils, muscular tremor.

5. If taken as snuff, possible damage to nasal mucosa; if taken IV, extensive needle scars and associated pathology.

6. Verbosity; constant, "rambling" talk.

7. Extreme nervousness, suspiciousness, and hostility which may develop into a characteristic stimulant-induced paranoid psychosis. This psychosis is very similar to that of paranoid schizophrenia, except that thought disorders are not prominent, and the short-term prognosis is good. Upon termination of the drug, psychotic manifestations usually disappear within a few days, although occasionally they may last for several weeks or months.

Acute treatment of stimulant abuse depends on the group of symptoms observed.

Acute Overdose

This condition is rather uncommon, and is seen most commonly in cocaine abuse. It can include severe hyperthermia, convulsions, cerebrovascular accidents, and possible cardiovascular or respiratory collapse. Treatment must be rapid and appropriate to the symptomology, including respiratory or cardiac support if indicated, sedation, and aggressive treatment of hyperthermia.

Chronic-Abuse Syndrome

Treatment is primarily psychotherapeutic and in severe psychotic reactions, short-term psychiatric hospitalization may be indicated. Minor tranquilizers will control the anxiety seen in these states. Davis recommends haloperidol to alleviate psychotic symptomology;" phenothiazines are not indicated as they may retard the excretion of amphetamines.

Stimulant Withdrawal

Usually the chronic abuse syndrome is alleviated after a single sleep period (often twenty-four to forty-eight hours long). However, possibly due to

depletion of brain catecholamines or other causes (Watson, 1972), there is usually a withdrawal syndrome, which may need additional treatment. This syndrome, which may last weeks or months, is characterized by:

1. Moderate to severe depression, possible suicidal ideation.

2. Sleep disturbances.

3. Post-psychotic suspiciousness or hostility.

4. Mild tremor in extremities.

5. Possible malnutrition, liver damage, severe caries, mucosal irritation, etc.

Initially treatment should be oriented to restoration of biological health, including sedatives at night until the twenty-four-hour cycle is restored, ample diet, supplemented by vitamins, and an appropriate treatment of associated pathology, e.g., hepatitis. Major tranquilizers should be used only if psychosis persists. Antidepressants are contraindicated in the first week of treatment, as blood levels of stimulants may persist for some time, a situation which creates the possibility of undesirable interaction between the two classes of drugs (Davis, 1973). After medical needs are met, there should be referral for long-term care.

Volatiles

There is a current phenomenon of abuse of psychoactive volatile chemicals (Kupperstein, 1968), although few of these are considered drugs in the usual sense. The use of such substances is predominantly among youth between eleven and eighteen years of age, many of whom have difficulty getting access to common drugs of abuse (National Commission on Marijuana and Drug Abuse, 1973). Substances known to have been abused include gasoline, varnish, paint thinner, cleaning fluids, aerosol sprays, glue, chloroform, ether, amyl nitrite, nitrous oxide, toluene, and many others. In general, intoxication with such chemicals is short and is characterized by stuporous, hostile, "drunken" behavior. Often a chemical odor may be noticed on the breath. The most common clinical disorders involve a pneumonia like state due to irritant properties of the substances, and possible liver or kidney damage. Occasionally, there may be cardiac dysfunction, but the most common serious problem is anoxia. In general, volatiles do not appear to produce dependence or to be involved in chronic-abuse patterns although a few cases of a decade of continued use are known. The usual pattern observed is experimentation, abuse, and then cessation of use as the young person's age increases.

Hallucinogens

Hallucinogens (Shick, 1975) are widely available and subject to frequent experimentation (Louria, 1971; Schick, 1970). Whether controlled use of

these drugs over extended periods is possible for the average person is doubtful, but there is no question that a few individuals do appear to be able to control such use. For many, use cannot be controlled and sooner or later attempts to do so turn into negative and frightening experiences. Due to the variety of hallucinogens and the unpredictability of content of illicit drugs, the youthful abuser usually does not know what he is ingesting; this is particularly true of "street" drugs (Cheek, 1970).

The relatively rare serious physical reaction may consist of convulsions, elevated body temperature, severe vomiting, respiratory depression and/or cardiac dysfunction. Such disorders may be caused by phencyclidine (PCP), belladonna alkaloids and various other drugs.

Clinical Symptoms

Patients who come to medical attention after using hallucinogenic chemicals may be disoriented, anxious, or panicky (Taylor, 1970). They may have sensory disturbances including abnormal sensitivity to or interpretation of stimuli. Hallucinations of course can be prominent and there may be ideas of reference and inappropriate affect.

Psychiatric syndromes resulting from hallucinogens can, at times, be distinguished from ordinary psychotic states by the history of drug use, by the presence of disorientation and by the relative preponderance of visual

phenomena in the drug-related emergency. In addition the physician will sense that ego processes are not damaged to the degree to which they are damaged in the acute schizophrenic break. Patients on a “bad trip” are more likely to report that they see or hear “crazy” things, and their judgment and control appears to be more intact than is the case of the acute psychotic break. In addition the symptomology of the bad trip tends to be labile; delusional symptoms are transient, affect rapidly changes; often the patient can emerge suddenly from extreme confusion to complete rationality, only to return to confusion minutes later.

Physiological signs, such as dilated pupils, cramps, nausea, or mild tachycardia are common. It is not surprising that most individuals who have used hallucinogens report difficulty talking or communicating while intoxicated, or that many become frightened. Hallucinogens do not usually leave significant long-term pathology, but chronic psychosis has been reported. Although differing somewhat from drug to drug, most hallucinogens begin taking effect one to two hours after an oral dose. Intoxication is very powerful for about five hours, then declining over the next eight hours. Usually the individual is fully “normal” after twenty-four hours; although he may report unusual thoughts or feelings as much as a week later. The most common adverse reaction is panic, usually because the psychological factors involved in the use of the drug are pathological and because the social setting is not supportive.

Treatment

Typical reports of bad experiences include the following:

1. Extreme disorientation—"I must be losing my mind, I'll never come down"—and other similar feelings aggravated by disorientation in time.

2. Fearful, paranoid reaction—"Why are they looking at me that way?" This may be partially induced by the illegal nature of the experience; fear of police and other authorities is common, while anxiety and disorientation also inhibit ego function. Pathological group dynamics are also frequently associated with this syndrome.

3. Frightening hallucinations, or release of threatening unconscious material.

4. Severe ego disturbances—"I have just died," or "I am you" experiences.

5. Hypochondria, including feelings of asphyxiation or impending death.

Treatment must be performed in a nonthreatening fashion. After checking vital signs to eliminate possibility of physiological danger, the patient should be "brought down," i.e., treated in a place that is quiet and dimly lit. Low levels of sensory input are desirable because of the distractibility involved.

If a friend of the patient is available, it is usually wise to keep him or her

present, but only a small number of people should be involved. Direct contradiction of fantasies is not helpful; emphasis should be on alleviating anxiety ("Everything's going to be fine," "The drug will wear off in a few hours," "Are you feeling better now?" etc.), coupled with friendliness and assistance in orientation ("you're in a hospital," "you took a pill," "would you like some orange juice?" etc.) Quiet music, or even a TV, can be useful. At least one person should remain with the patient until the effects of the drug have worn off.

Chemotherapy should be reserved for refractory cases whose agitation is not reduced by psychological approaches. In such instances chlordiazepoxide, diazepoxide, or barbiturates can be helpful. Phenothiazines should not be used as they may interact with many hallucinogenic drugs to cause liability of blood pressure and/or worsening of the psychotic like state. In some cases, short or long-term hospitalization may be necessary. Prognosis is variable; serious and chronic adverse reactions have been noted.

Flashbacks

Flashbacks develop in a significant percentage of hallucinogenic experiences (Schick, 1975). Typically these are recurrent spells of a few seconds or minutes of acute depersonalization or hallucinosis reminiscent of the hallucinogenic experience. They are usually precipitated by fatigue or

acute stress and may persist for many weeks. They ordinarily stop permanently after a few months, and reassurance is usually adequate treatment. In more severe cases, minor tranquilizers or psychotherapy may be indicated.

Cannabis

Cannabis products such as marijuana and hashish are widely used but only rarely produce reactions severe enough to require medical attention (Lieberman, 1971). Occasionally acute panic develops and in such cases the general measures described above should be instituted. Cannabis use also can be associated with psychotic behavior. In such cases current knowledge suggests that treatment should be oriented to underlying personal problems, not to the drug per se.

Chronic Treatment of Opiate Dependence and Polydrug Abuse

Long-term treatment may be conveniently divided into chemotherapeutic approaches in which a drug plays a major, though not exclusive, role in treatment, and sociotherapeutic approaches in which drugs play only a minor role.

General Comments on Chemotherapy

All major advances to date in the chemotherapy of drug abuse have centered around the problem of heroin dependence, or more generally opioid dependence. “Opioid” denotes the class of drugs including the analgesic alkaloids of opium, such as morphine and codeine, their derivatives, such as heroin and oxycodone, and purely synthetic chemicals, such as methadone and meperidine which are pharmacologically similar to morphine. Opioids share many features. They all induce tolerance—repeated doses give less response than the first dose, and they all act as positive reinforcers in animal experiments. In addition their repeated use produces physical dependence, a state in which cessation of drug use causes an “abstinence” syndrome, and they exhibit cross-tolerance, i.e., a dose of one relieves the abstinence syndrome related to the use of another (Harris, 1970; Jaffe, 1965).

The British System

Until the Harrison Act of 1914 there were many opiate addicts in the United States, but they did not exhibit the kinds of pathology we see in heroin addicts today. After the Harrison Act, clinics opened which provided addicts with a medically supervised source of opiates. These clinics operated with reasonable success for a few years, but a scandal in 1920, in regard to some improperly managed opiate clinics, resulted in their closing (Brecher, 1972).

In 1924, a British committee headed by Sir Humphrey Rolleston

examined the opiate policies of the United States. He concluded that our approach had not appreciably reduced the incidence of opiate addiction and had forced U.S. addicts to become criminals. On the basis of this finding, the Rolleston committee recommended the implementation of what is now called the British System, namely, greatly restricting availability of opiates, but permitting addicts to obtain opiates from physicians. This system did not pretend to cure addicts, but it attempted to maintain addicts as noncriminal and to prevent the recruitment of new addicts. By 1951 there were only 301 known addicts in Britain.

In the 1960s, a significant black market in opiates developed in Britain, and substantial numbers of new addicts developed. The country tightened its opiate laws to restrict the dispensation of opiates to addicts to only a few doctors and clinics, and to require more extensive registration. In 1970, there were 1430 known British addicts, the number was again apparently stable.

The British technique appears to have been successful. It was developed on a pragmatic basis, not using medical or legal models. It has been suggested that the United States should adopt the British policy, although the pressure for this has abated somewhat as more effective treatment techniques have been found here. The British experience appears to have limited applicability to the United States, since we have perhaps a thousand times as many addicts as Britain, and a problem of quite different cultural and social significance.

The American addict, for example, is profoundly criminalized and could be expected to be far less compliant to rules and more likely to engage in black market practices. Moreover, the American addict is in much more need of rehabilitative services apart from addiction treatment per se to overcome the social gradient which distinguishes him from his British counterpart. For detailed discussion on these issues the reader should consult Brecher (1972) and other references (Musto, 1973).

Methadone Maintenance

Methadone maintenance, pioneered by Dole and Nyswander in the 1960's, is the current treatment of choice for many chronic opiate addicts (Chambers, 1973; Dole, 1965; Dole, 1967; Glasscote, 1972). The consensus of workers in the field is that drug-treatment programs using methadone in support of their efforts can be useful for some 40 to 60 percent of addicts in aiding them to achieve a socially desirable change in lifestyle (Freedman, 1973; Gearing, 1971; Jaffe, 1969).

Rationale

Methadone, a synthetic opioid, is subjectively similar to morphine in that effective analgesia follows the injection of 5 to 10 mg. In sufficiently high dosage, it has euphorigenic effects comparable to those experienced from the use of heroin. However, as it is used in treatment, the dose is adjusted so that

withdrawal does not occur while euphoria is avoided; the dosage range in which both purposes can be achieved is large. The duration of methadone-induced analgesia is similar to that of morphine (three to four hours,) but withdrawal discomfort in methadone-dependent users does not commence for eight to twenty-four hours, while morphine withdrawal occurs after four to six hours. The extended "holding" period of methadone plus the fact that methadone, unlike morphine, is orally effective, defines its usefulness in treating opiate addiction. Orally administered, one dose of methadone effectively prevents the appearance of the abstinence syndrome for twenty-four hours. Heroin, on the other hand, requires frequent parenteral and unsterile administration with its associated hazards. Heroin administration can also cause the addict to "see-saw" between euphoric stupor and incipient withdrawal.

Like other opioids, methadone is a respiratory depressant and antitussive agent. It produces mild hypothermia and hyperglycemia, and in general, has neurophysiological effects similar to morphine (Jaffe, 1965). Methadone, as it is used in maintenance programs, has several common side effects, including sedation, constipation, excessive sweating, urinary retention, and changes in libido, i.e., usually a decrease but occasionally an increase. Pruritis, urticaria, nausea, or delirium have been rarely reported. Appetite may improve with the consequent development of a weight problem.

Clinical experience in the treatment of heroin addicts suggests that the psychophysiological changes attendant upon the addict's attempt to change his lifestyle are usually more significant than those pharmacologically induced by methadone. Tolerance to most side effects usually develops quickly, except for constipation and excessive sweating. No remedy is known to counteract these troublesome side effects but they usually disappear after a period of weeks or months (Senay, 1971).

Treatment

Methadone maintenance, i.e., a treatment contract in which the patient expects to receive methadone daily for the indefinite future, is indicated for heroin addicts who are not strongly motivated to achieve abstinence. Methadone-maintenance therapy does not have the goal of "complete cure," if by this phrase we mean complete and permanent abstention from all opiate drugs and full social rehabilitation. In view of the poor prognosis of heroin addicts, goals of methadone maintenance are, at a minimum, reduction of illicit drug use, reduction of criminal activity, increase in productivity as reflected by employment in the legitimate job market and increase in self esteem (Senay, 1973). In addition, improvement in family and community functioning is sought.

In the classic work of Dole and Nyswander methadone maintenance

involved an initial period of induction, in which the patient was first given methadone sufficient to eliminate withdrawal symptoms (Dole, 1965). Over a period of several weeks this dose was gradually raised to a "blocking" oral dose of approximately 100 mg./day. Reported side effects were minimal, and opiate "hunger" was eliminated. Not only did this dose eliminate opiate hunger, but tolerance to opioids was raised to such a degree that normal doses of "street" heroin had no effect. It was believed that loss of the positive reinforcement from heroin administration would lead to extinction of the habit. (However, many chronic addicts apparently do not have a "high" following self administration of heroin and take drugs solely to forestall the painful abstinence syndrome).

Dole and Nyswander's original studies limited admissions to male patients between twenty-one and thirty-nine years old with at least a five-year history of heroin addiction and a record of previous (non methadone) treatment failures. Excluded were psychotics, alcoholics, medically ill, and mentally deficient patients.

Results of these early studies were promising (Gearing, 1971). Approximately two-thirds of the patients were still in treatment after forty-two months, and many of the others had subsequently joined other treatment programs. Arrest rates declined, while social adjustment, as measured by return to school and legitimate employment, improved. It was noted that

approximately 10 percent of the patients simply changed from drug abuse to alcohol, cocaine, barbiturates, or amphetamines, and many of these were expelled from treatment (Glasscote, 1972).

On the basis of this and similar experiences, methadone maintenance has gained growing acceptance. More recent studies have indicated lower success rates in other programs, an effect no doubt attributable to more open admissions, i.e., accepting psychotics, alcoholics, and other high-risk addicts into treatment on the theory that while they cannot be expected to show a high degree of rehabilitation, nevertheless, methadone maintenance can provide significant help to many addicts (Senay, 1973). Some of the differences, of course, may be explained by the poor quality of treatment. In addition, some of the differences in success between programs may be explained by the fact that they are treating people from different addict subcultures.

Appropriate dosage remains a controversial question. Goldstein (1972), and Jaffe et al. (1971) have demonstrated that program outcome remains equally good regardless of dose, i.e., 40-50 mg. schedules in comparison to the original 120 mg. schedule of Dole and Nyswander. Apparently the ability of high doses to block the effects of heroin is not as important as the relief of opioid craving, which may be effectively achieved at the lower dose. Patients given 50 mg. daily may initially complain of discomfort beginning sixteen to

eighteen hours after administration, but they seem to adapt readily to the twenty-four-hour schedule. In 1974 there were over 70,000 addicts in methadone programs. The remarkable growth in this modality of treatment resulted from Federal action which created the Special Action Office for Drug Abuse Prevention (Drug Abuse Office and Treatment Act, 1972).

Urinalysis for the detection of the use of methadone, heroin, and other drugs has became an integral part of maintenance treatment. Addicts are notoriously unreliable in reporting drug-related activities and this is a convenient technique for obtaining independent data. It may also serve a deterrent purpose, by increasing the likelihood that unreported drug use will be detected. When used as a technique for fostering honesty, urine monitoring can be helpful (Weinberg, 1973). Tests positive for illicit drugs are an indication that the patient needs help, while negative tests indicate increased ability of the patient to control his behavior. Unfortunately, urine-test results are used also in a punitive "legalistic" fashion and such a practice may destroy a beneficial counselor-patient or doctor-patient relationship (Gearing, 1971).

A typical methadone maintenance clinic provides daily administration of oral methadone, plus such "ancillary" services as vocational, legal, and social counseling. Group therapy is normally provided, but is usually optional. Groups tend to be confrontational in nature, with an emphasis on honesty and

direct reporting of feelings. This approach leads to intense emotional experiences, but many patients find the intensity of the groups so anxiety-provoking that they cannot derive benefit from them.

Although the provision of counseling and auxiliary social services in methadone treatment has not yet been conclusively proven to influence treatment outcome, few serious observers doubt that such services play a vital role (Chambers, 1973).

There are subgroups of addicts entering treatment; one subgroup is highly motivated and will improve regardless of treatment; another subgroup is so little motivated and so burdened with social and psychological pathology that no treatment will produce any change; outcome in a third intermediate group is probably strongly dependent on the availability and quality of "auxiliary" treatment services.

Ex-addicts are often involved as counselors in drug treatment programs. They are usually highly motivated and uniquely knowledgeable with respect to the meaning of behaviors of patients from the addict subculture. Some believe that they provide an important role in mediating the sociocultural gap between physicians and addicts. They also serve as role models for new patients. For some ex-addict workers, a job in a treatment program may be an important stabilizing force in maintaining progress in rehabilitation. The

precise role of the ex-addict worker in methadone maintenance clinics remains to be explored fully. Programs vary widely in the extent to which they employ ex-addicts and few studies have been carried out to help define the needs and potentials of this important class of workers.

It is unclear whether traditional psychotherapy is useful to most patients on methadone maintenance. Provision of chemical therapy and the general affiliation with a program seem to be more important, but psychotherapy is clearly indicated among those patients manifesting serious psychopathology.

Current FDA regulations (Federal Register, 1972) require detoxification of opiate addicts who have been addicted for less than two years; detoxification schedules for such patients are prescribed by FDA regulation and cannot extend beyond twenty-one days. Diagnosis is also complicated by the existence of "pseudo-junkies" (Gay., 1973), i.e., youthful addicts who have all the stigmata of heroin addicts including positive urines for morphine and acute withdrawal syndromes but who prove to be intolerant to low doses of methadone.

Common Clinical Problems

In general, coexisting medical/psychiatric problems may be treated concurrently in methadone-maintained patients. Caution should be exercised

in the administration of CNS depressants, e.g., phenothiazines or sedatives, because of the possibility of synergism. Clinical experience suggests that medical or surgical crises in methadone-maintained patients are best managed by continuing daily oral methadone administration at the normal dose. Should parenteral administration be necessary during such crises 10 mg. of methadone two or three times a day either IM or SC (subcutaneously) will almost always suffice regardless of previous oral dose levels. Analgesic needs do not change and are not covered by the methadone. If opiates are indicated, e.g., Demerol, they should be administered in normal doses concurrent with maintenance methadone. Pentazocine should not be used for analgesia in the methadone-maintenance patient as it may precipitate withdrawal symptoms (Lewis, 1973).

Pregnant addicts have been maintained on methadone through delivery (Blinick, 1973). Surprisingly few newborns of such patients exhibit withdrawal syndromes but such cases when they arise may be easily treated with small doses of paregoric or methadone. Possible teratogenic or abortifacient properties of methadone have not yet been conclusively ruled out, but one must bear in mind, when weighing the risks of maintaining pregnant patients on methadone, hazards to the fetus implicit in the lifestyle of the heroin addict and the fact that premature delivery is a common occurrence in the pregnant addict. Further experience is needed before guidelines can be set down with reference to these questions. Zelson's (1973)

seriously questions whether methadone has any role in the treatment of the pregnant addict.

The most serious common complication of methadone maintenance therapy is alcoholism. O'Donnell reports that two-thirds of the addicts seen at Lexington have a history of alcoholic excess (1969), so it is not surprising that when opiate addiction is controlled by methadone therapy, many cases of alcohol abuse appear. A patient showing signs of acute alcohol intoxication should not receive methadone while he is intoxicated. Alcohol and methadone are synergistic, and if other CNS depressants have been taken, a lethal outcome is possible. A methadone program should offer support for this common complication whenever possible. This may involve alcohol detoxification, disulfiram therapy, and/or referral to Alcoholics Anonymous.

Discussion

Some have attacked the basic premise of methadone maintenance (Lennard, 19672), pointing out that being an opiate, methadone does not cure opiate addiction, and that abstinence is the only meaningful criterion of cure. However, with increasing experience, it has become clear that a significant percentage of addicts will not become abstinent under the various treatment methods now known. In the light of this observation, it appears that methadone maintenance can provide help to a large number of addicts who

would otherwise be returned to full-scale criminal activity and illicit drug use. It must be borne in mind that the typical addict normally uses illegal heroin, which is both expensive and impure. He faces arrest for using heroin and maintaining his habit becomes a full-time job, into which he pours all his energies. He remains in a criminal addict milieu. On the other hand, medically sponsored methadone administration is legal and safe; it permits the addict to seek employment, choose his friends, and lead a more stable life. Psychologically, the status associated with chronic heroin addiction is destructive to self-esteem. By being "on methadone," an addict can feel that he is taking medicine instead of "drugs," and can start to feel some socially sanctioned basis for self-esteem (Goldstein, 1973). The treatment clinic can provide support and treatment for primary or secondary psychosocial problems. With community-based control of clinics the argument that methadone maintenance is used as a social control mechanism does not appear to be compelling.

It is too soon to make any definitive statements regarding the future role of methadone maintenance. At present, it appears that methadone maintenance has an important role in the development of a national treatment strategy for problems of drug dependence. It seems indisputable that a large number of people are now being helped in methadone programs. The evidence also suggests that for the average addict, treatment in a program is preferable to treatment by an individual therapist.

Methadone Substitutes

The compound L-alpha acetylmethadol (LAAM), is a congener of methadone; it differs from methadone in that it suppresses the abstinence syndrome for two to three days, while methadone's effects in this regard last only twenty-four hours. Experience to date suggests that it is therapeutically identical to methadone (Jaffe, 1972). Being active for several days, it provides a more convenient form of treatment in which it is possible to deemphasize chemical aspects of the treatment relationship.

From many perspectives, this drug would appear to be a major improvement over methadone. However, even if a very long-acting morphine substitute with minimal toxicity and side effects is perfected, there will still be problems in clinical use, namely, the irrevocable nature of ingestion of a very long-acting drug implies considerable hazard in the case of accidental drug ingestion, or in cases in which medical or clinical considerations indicate termination of opiate support therapy. Affiliation with a clinic such as is required by current methadone treatment may be of overriding importance, and this effect would be lost in the case of a substitute with a long-lasting effect. The significance of these and other reservations is unclear at this point; it appears that longer-acting opioids can make a meaningful contribution to chemotherapy, but it remains uncertain whether they will fully supplant methadone.

Other Morphine Substitutes

For many years scientists have attempted to develop an opioid with effective pain-killing properties, but minimal addiction liability, that is to find a drug which effectively alleviates opioid craving without significant addictive potential. Recent work with propoxyphene napsylate ("Darvon-N" [Tennant, 1973]), suggests that this drug (chemically similar to methadone) may provide effective relief for opioid craving while having a low addiction potential. There is room for skepticism regarding such work. Animal experiments with many hundreds of opioids suggest that if a drug is effective as a pain-killer, its effectiveness to relieve abstinence is exactly the same, and also its addiction potential (Harris, 1970). If propoxyphene napsylate or some other drug proves not to follow this rule, the implications are, of course, highly significant for treatment.

Narcotic Antagonists

There are many known chemicals which directly antagonize opioid effects in the human body, such as nalorphine, naloxone, and cyclazocine (Fink, 1973; Kleber, 1973). Recently, a good deal of research has been devoted to their possible utility in the treatment of opiate addiction (Hammond, 1971). This technique is roughly analogous to the use of disulfiram in the treatment of alcoholism, except that disulfiram creates a

situation in which the use of alcohol is associated with negative subjective effects while narcotic antagonists simply block the effects of opiates. To date, effective antagonists are either prohibitively expensive, their effectiveness short-lived, or they are producing unpleasant side effects. Work continues on a cheap, long-acting, orally effective antagonist, free of major side effects (Maugh, 1972).

The best clinical results have been with cyclazocine. It is orally effective, and a dose of 4-8 mg. appears to block the effects of heroin for roughly twenty-four hours. Unfortunately, cyclazocine has several unpleasant side effects. If a therapeutically effective dose is given to a naive subject, such symptoms as irritability, insomnia, and tension are common. Many patients report feeling "unreal," and other subjective effects which they compare to the effects of marijuana or LSD. Side effects may be usually avoided by building up to a therapeutic dose in small increments over a period of weeks. Resnik et al. however, state that rapid induction over a period of a few days successfully avoids the major unpleasant effects of this drug (1973). Side effects that persist can usually be controlled by tranquilizers.

Cyclazocine does not reduce opiate craving, but since it blocks opiate effects there is no positive reinforcement from injecting heroin. Thus one expects to see typical "extinction" behavior in a patient treated with cyclazocine. Cyclazocine is itself an addictive drug, and withdrawal may be

accompanied by muscle aches, rhinitis, and subjective discomfort.

Candidates for antagonist treatment must be completely free of drugs, since antagonists induce severe, and conceivably lethal withdrawal syndromes if administered to opiate dependent patients. Cyclazocine is probably best suited for short-term treatment subsequent to detoxification as an adjunct to other abstinence regimens. It may also prove to have a role in assisting stabilized methadone-maintained patients in achieving abstinence.

Naloxone is an essentially "pure" antagonist, having minimal side effects or addiction potential. Unfortunately it is expensive, short-acting, and variably potent when taken orally. However, it too appears to be useful for a small group of patients attempting to maintain a drug-free status.

Work continues on developing a long-acting (or permanent) antagonist devoid of unpleasant side effects. Naltrexone is one of the newest drugs in this series. Its blocking effects last for twenty-four hours and its use is not accompanied by negative subjective effects; early results are promising.

Heroin Detoxification

While it has been asserted that heroin detoxification without coordinated long-term aftercare treatment is an exercise in futility (O'Donnell, 1969), others maintain that it can provide meaningful help in

certain circumstances. Dole (1972) finds that one-half of prisoners in the Manhattan House of Detention for Men are addicts on admission. He presents evidence that detoxification of these new admissions alleviates human suffering, improves prison morale, and reduces the number of incidents of violence and suicide. Lloyd et al. find that while only 3 percent of detoxified addicts remain in treatment, 18 percent are abstinent six months after detoxification (Lloyd, 1973). While this is an appreciable success rate, he recommends that aftercare services should be provided. Others point out that in addition to the moderate percentage reporting long-term abstinence, a large percentage attain temporary abstinence, and that this reduces human suffering and heroin related crime, at least temporarily.

Coercive Treatment

Heroin addiction is uniquely tied to criminality and the criminal justice system. There is no psychopharmacological basis for this association; it occurs principally because the street cost of heroin is high and criminal activity is the only source of funds for the average addict.

As a consequence of the social concern over heroin addiction, many approaches to involuntary or semi-voluntary treatment have been proposed, ranging from offering treatment in lieu of prosecution to civil commitment for drug-related crime. Results of such approaches to date are inconclusive. The

early addiction treatment center at Lexington, Ky., which used civil commitment extensively, has been criticized, but Vaillant in a number of long-term follow up studies reports rehabilitation rates of about 40 percent (1972). Wieland and Novack report some success in the Philadelphia Criminal Justice program, in which addicts are offered treatment in lieu of prosecution; however, outcome appears to be poorer than in a comparison group of patients without active relationship to the criminal justice system (1973).

There are many unresolved questions in such treatment approaches, including questions of efficacy, medical ethics, civil liberties, and social policy. The National Conference of Commissioners on Uniform State Laws has proposed guidelines for involuntary treatment including the following main points (Bonnie, 1973):

1. No mandatory treatment should be provided except for those who have committed a criminal violation.

2. Mandatory treatment should not be imposed for a longer period than the maximum sentence of the criminal violation, or eighteen months, whichever is shorter.

3. The patient should at all times have the option to leave treatment and serve out his jail term.

4. The patient should always have the option of drug-free treatment.

Non voluntary treatment may become a major tool in drug-abuse rehabilitation, but experience to date indicates that where treatment opportunities exist, the majority of addicts will voluntarily seek treatment (Hughes, 1972).

Sociotherapy

We use the term "sociotherapy" to denote many different approaches to the treatment of drug abuse. Their underlying common element is that they put primary emphasis on social interaction. Some forbid all "chemicals" as a matter of policy, while others may use drugs quite extensively; however, chemotherapy is at most an adjunct to treatment, and does not itself constitute treatment.

Therapeutic Communities

The "therapeutic-community" technique (Brecher, 1972; Casriel, 1971; Deitch, 1973; Densen-Gerber, 1973; Glasscote, 1972; Rosenthal, 1972; Yablonsky, 1965) of drug-abuse rehabilitation (not to be confused with the milieu therapy of Maxwell Jones in psychiatric wards) was created by Charles Diederich in the late 1950s. Diederich, a "graduate" of Alcoholics Anonymous, began holding meetings for alcoholics. Several drug abusers started coming to these meetings and Diederich became interested in their problems. By the early 1960s the structure of Synanon, the archetypal therapeutic community,

was completely developed (Deitch, 1973; Tennant, 1972). Since then, therapeutic communities have flourished throughout the country (Casriel, 1971). Diederich's basic concept was that a person who uses drugs is emotionally immature and as a consequence cannot function in "straight" society.

"Treatment" in the typical therapeutic community lasts from one to two years, after which the person can reenter the community as a successfully functioning drug-free individual. During this treatment period psychological growth, measured in phases or steps in the various programs, proceeds until a client has acquired the ability to function autonomously.

In general, therapeutic communities are based on the notion that an individual knows his feelings and that he can report his feelings if he desires to do so. There is an emphasis on honesty and a directness of approach which has unquestionable therapeutic value for many addicts. Typically, intake requires considerable initiative on the part of the prospective resident. During what is usually a stressful "acceptance interview" the candidate must actively and vigorously commit himself to the program. Such a situation serves the double purpose of screening out candidates of low motivation, for whom therapeutic communities are probably inappropriate, and providing a very explicit and self-defined reason for the successful candidate to enter treatment. Upon admission, social status is low. The new resident has no

"privileges," i.e., there are restrictions on telephone calls, personal possessions, and visitors. Typically the neophyte is given rather poor living quarters. He is assigned a menial job function, e.g., washing dishes or sweeping floors, and he is expected to abstain from violating the house rules (e.g., no drugs, physical violence, or disobeying orders). He is expected to function well in his job, to manifest concern about his fellow residents, and to be active in group-therapy sessions. If these expectations are met the resident will progress through successful phases in which autonomy is given gradually.

A well-functioning therapeutic community could be compared to a very large and tightly-run family. Indeed the word "family" is often used to denote the entire membership of a therapeutic community. Punishment for inappropriate behavior in the form of verbal "haircuts," demeaning tasks, and peer contempt, can be quite severe in some therapeutic communities.

Encounter groups, led by staff and/or advanced residents, are held frequently. Typically a resident will participate in three groups each week. Honesty of expression and open verbal hostility are considered proper group behavior. Such groups are helpful in resolving personal problems in a psychotherapeutic sense and in providing an appropriate setting for "blowing off steam" for people living under conditions which are stressful.

Reentry into the community is usually divided into several steps. The patient progresses from being a regular resident with some personal freedom, e.g., weekend passes, visitors, etc., to living outside the therapeutic community while attending occasional groups. After considerable time in a basically outpatient status, the ex-addict formally graduates from the therapeutic community (assuming he has not relapsed) and is formally considered rehabilitated. Whether or not addicts can ever graduate is still an unresolved question in the Synanon system.

In visiting a therapeutic community, one is struck by the high esprit de corps of the family, the personal friendliness of the residents, and the sense of order apparent in the cleanliness of the house. Certain aspects of the community, such as the tight control over the individual and the intolerance to minor deviance, may be disquieting. A new resident is traditionally expected to detoxify from heroin "cold turkey," i.e., without any chemical support. During withdrawal, he is expected to participate fully in house activities. One finds that subjective withdrawal symptoms under such circumstances, i.e., where passivity is not permitted, are far less unpleasant than when "kicking" in a hospital or jail.

The most serious problem in the therapeutic community approach is a very high premature termination of treatment or "split" rate (Brecher, 1972). Although accurate statistics are difficult to compile, it is estimated that

slightly less than 10 percent of new members ever graduate. The majority of splits occur in the first few months of treatment, but splitting at a lower rate continues up to graduation. Observers have noted that residents who have stayed even for only a few months can derive benefit from their stay (DeLeon, 1972). Therapeutic communities probably provide the highest "quality" of rehabilitation of any major treatment modality, in that their graduates are drug free, have a low recidivism rate, and are gifted workers with the drug-dependent. A disproportionate number of graduates get jobs as ex-addicts in drug-abuse programs.

The therapeutic community may be the treatment of choice for the very highly motivated drug abuser who has been deeply involved with drugs. It may be a dangerous form of treatment for some who are unable to identify and/or to report their feelings. The milieu is not generally supportive to people who are unable to function well, although there are some striking exceptions of psychotics making major recoveries after traditional treatment has proven ineffective (DeLeon, 1973). The cost of treatment in this modality is higher than that of methadone maintenance, but there is a much greater chance to make long-term significant changes in the lifestyle of the drug abuser. Moreover, treatment can be provided for individuals for whom methadone support is inappropriate, such as polydrug abusers.

Although traditionally therapeutic communities have avoided

interaction with professionals, this has changed in recent years. At this point, professionals can make significant contributions to therapeutic communities by acting as general consultants, by training staff, and by providing treatment for residents with significant psychiatric problems. The psychiatrist who works with a therapeutic community will do well if he regards himself as a student of the therapeutic community process and identifies himself as such.

Modified Therapeutic Communities

There have been many efforts to modify therapeutic communities to permit other subgroups of drug abusers to benefit from the therapeutic community experience. Jaffe developed the multimodality treatment system (Jaffe, 1973), in which methadone support is incorporated into the therapeutic community structure. Due to early polarization between drug free and drug-supported treatment, it was first thought that such a combination would not be feasible, but the experience of Jaffe has shown that abstinent and methadone supported patients can be successfully treated in the same unit both on an outpatient and a residential basis. Such "mixed" treatment provided significant programmatic flexibility, and the ability to tailor treatment to the specific needs of the individual patient. It is too early to make conclusions regarding comparative results, but clinical impressions suggest that programs offering "mixed" treatment may reach many who would not succeed in outpatient methadone maintenance or in a traditional

therapeutic community (Jaffe, 1973).

In the modified therapeutic community one can observe considerable "loosening" of the rigid structure of the classical therapeutic community; this takes many forms, from shorter residence (in modified therapeutic communities length of stay may be in terms of weeks), to reducing the stressful aspects of treatment, and to increasing the personal freedom of residents. Early results indicate that such modifications may render therapeutic communities less suitable for the groups originally helped by them, but more suitable for other groups, particularly young polydrug users.

Other Sociotherapies

Sociotherapeutic approaches include the various religion-oriented drug rehabilitation programs, such as Teen Challenge, a fundamentalist Christian program (Glasscote, 1972; McDonnell, 1968), the Black Muslims, who base their work on the teachings of Elijah Mohammed (1965), and several small sects using various Eastern philosophies. Many such organizations provide significant help to substantial groups of drug abusers. There are also programs such as The Seed (Miller, 1973) which, while not based on religion, centers its efforts on the charisma of a single person. Probably much of their success stems from the same process which enables therapeutic communities to be successful in a drug free environment, i.e., they provide structure,

affiliation, and hope for their members.

There have been several types of treatment designed specifically for young polydrug abusers. Hotlines, for example, are telephone services offering crisis intervention and various types of other services (Delworth, 1972; Torop, 1972). These services, which appeared in large numbers in the late 1960s, were originally set up to handle "bad trips" (see p. 835). They are typically staffed by young volunteers. Professional supervision of such efforts is desirable as they have probably suffered in the past from a lack of professional interest.

Drop-in centers may also provide crisis intervention, but they are usually medium-term treatment centers. Many people, particularly youths, are reluctant to seek formal treatment, as they are reluctant to consider themselves "sick," and drop-in centers provide an acceptable alternative. The typical drop-in center avoids all medical jargon. An attempt is made to provide recreation and friends, "rap groups" and individual conversations with staff.

It is noteworthy that both drop-in centers and hotlines tend to be operated by very young people with few ties to the medical establishment. This occurs because many young people are alienated from the medical establishment, and often will not trust medical personnel to help them

(Torop, 1972).

The Role of Professionals in Drug Rehabilitation Programs

The psychiatrist working in a drug rehabilitation program faces a unique challenge. Professional training seldom provides experience with the world of criminality and violence surrounding the opiate addict or with the world of the counter-culture surrounding the young polydrug user. Both worlds place a negative value on physicians of any speciality, often on well justified grounds. Drug-dependent persons, like alcoholics, are in fact discriminated against in our medical-care system and many patients can recall vivid and moving experiences in which they have been demeaned, if not endangered, by medical discrimination. Many psychiatrists are not prepared to understand that the positive image they enjoy in ordinary practice turns to a negative one in the drug world. The situation is rendered more complex because the basic psychiatric techniques of individual or group psychotherapy have not been particularly successful with addicts.

Optimal contributions from psychiatrists appear to be associated with team functioning in which the psychiatrist works side by side with ex-addicts or paraprofessionals who serve as interpreters of the drug subculture and as primary counselors for patients in treatment. Although the psychiatrist can contribute by assuming primary care of patients in drug treatment programs,

his expertise can have maximum effect if he shares his skills with other members of the treatment team and if he assumes administrative responsibilities, not the least of which is resolution of staff conflict. Once through a basic learning experience focused on the unique aspects of drug abuse, he will find that the status he enjoys in the "straight" world will be also accorded to him in the drug world and new and challenging demands will be made on his leadership.

Bibliography

American Medical Association, Council on Mental Health. "Treatment of Morphine-Type Dependence by Withdrawal Methods," *JAMA,* 219 (1972), 1611-1615.

Berle, B. B., M. Ganem, and J. Lowinson. "Detoxification of Multiple-Drug Abusers with Sodium Amytal," *N.Y. State J. Med.,* 72 (1972), 2971-73.

Blinick, G., E. Jerez, and R. C. Wallach. "Methadone Maintenance, Pregnancy, and Progeny," *JAMA,* 225 (1973), 477-479.

Bonnie, R. J. and M. R. Sonnereich. "Proposed Uniform Drug Dependence Treatment and Rehabilitation Act and Commentary," in National Commission on Marijuana and Drug Abuse, *Drug Use in America: Problems in Perspective*, Appendix 4. Treatment and Rehabilitation, pp. 827-856. Washington: U.S. Govt. Print. Off., 1973.

Brecher, E. M. and the editors of *Consumer Reports. Licit and Illicit Drugs.* Boston: Little, Brown, 1972.

Casriel, D. and G. Omen. *Daytop.* New York: Hill and Wang, 1971.

Chambers, C. D. and L. Brill. *Methadone: Experience and Issues.* New York: Behavioral Publications, 1973.

Cheek, F. E., S. Newell, and M. Jaffe. "Deceptions in the Illegal Drug Market," *Science,* 167 (1970), 1276.

Chein, I., D. L. Lee, and E. Rosenfeld. *The Road to H: Narcotics, Delinquency and Social Policy.* New York: Basic Books, 1964.

Cushman, P. and V. P. Dole. "Detoxification of Rehabilitated Methadone Maintained Patients," *JAMA,* 226 (1973), 747-752.

Davis, J., J. Sekerke, and D. Janowski. "Drug Interactions Involving Drugs of Abuse," in National Commission on Marijuana and Drug Abuse, *Drug Use in America: Problem in Perspective,* Appendix 1. *Patterns and Consequences of Drug Use,* pp. 181-208. Washington: U.S. Govt. Print. Off., 1973.

Deitch, D. A. "Treatment of Drug Abuse in the Therapeutic Community: Historical Influences, Current Considerations and Future Outlook," in National Commission on Marijuana and Drug Abuse, *Drug Use in America: Problem in Perspective,* Appendix 4. *Treatment and Rehabilitation,* pp. 158-175. Washington: U.S. Govt. Print. Off., 1973.

DeLeon, G., S. Holland, and M. S. Rosenthal. "Phoenix House: Criminal Activity of Dropouts," *JAMA,* 222 (1972), 686-689.

DeLeon, G., A. Skodol, and M. S. Rosenthal. "Phoenix House: Changes in Psychopathological Signs of Resident Drug Addicts," *Arch. Gen. Psychiatry,* 28 (1973), 131-135.

DeLong, J. V. "Treatment and Rehabilitation," in P. M. Wald and P. B. Hutt, eds., *Dealing with Drug Abuse: A Report to the Ford Foundation,* p. 195. New York: Praeger, 1972.

Delworth, V., E. H. Rudow, and J. Taub, eds. *Crisis Center/Hotlines: A Guidebook to Beginning and Operating.* Springfield, 111.: Charles C. Thomas, 1972.

Densen-Gerber, J. *We Mainline Dreams: The Odyssey House Story.* Garden City, N.Y.: Doubleday, 1973.

Dole, V. P. "Detoxification of Sick Addicts in Prison," *JAMA,* 220 (1972), 366-369.

----. "Detoxification of Methadone Patients, and Public Policy," *JAMA,* 226 (1973), 780-781.

Dole, V. P. and M. Nyswander. "A Medical Treatment for Diacetylmorphine Addiction," *JAMA,* 193 (1965), 646-650.

----. "Heroin Addiction—A Metabolic Disease," *Arch. Intern. Medicine,* 120 (1967), 19-24.

Drug Abuse Office and Treatment Act of 1972. U.S. Code, Vol. 86 Stat. 66 (1972), 21 U.S.C. Sec. 1101 ff. Washington: U.S. Govt. Print. Off., 1972.

Dumont, M. P. "Technology and the Treatment of Addiction," in S. Fisher and A. M. Freedman, eds., *Opiate Addiction: Origins and Treatment*. Washington: Winston & Sons, 1973.

DuPont, R. L. and M. H. Greene. "The Dynamics of a Heroin Addiction Epidemic," *Science*, 181 (1973), 716-722.

Ellinwood, E. H. "Emergency Treatment of Acute Reaction to CNS Stimulants," *J. Psyched. Drugs*, 5, (1972), 147-152.

Ellinwood, E. H. and S. Cohen, eds. *Current Concepts on Amphetamine Abuse.* Rockville, Md.: National Institute of Mental Health, 1970.

Evans, L. E. J., C. P. Swanson, P. Roscoe et al. "Treatment of Drug Over dosage with Naloxone, a Specific Narcotic Antagonist," *Lancet,* 1 (1973), 452-455.

Federal Register, "Approved New Drugs . . . Listing of Methadone with Special Requirements for Use," 27, no. 242 (Dec. 15, 1972) 26790-26807.

Fink, M. "Narcotic Antagonists," in National Commission on Marijuana and Drug Abuse, *Drug Use in America: Problem in Perspective*, Appendix 4. Treatment and Rehabilitation, pp. 143-157. Washington: U.S. Govt. Print. Off., 1973.

Freedman, D. X. and E. C. Senay. "Heroin Epidemics," *JAMA*, 228 (1973), 1155-1156.

----. "Methadone Treatment of Heroin Addiction," *Annu. Rev. Med*., (1973), 153-164.

Gay, G. R., E. C. Senay, J. A. Newmeyer et al. "The Pseudo-junkie: Evolution of the Heroin Lifestyle in the Non-addicted Individual," *Drug Forum,* 2 (1973), 279-290.

Gearing, F. R. "Successes and Failures in Methadone Maintenance Treatment of Heroin Addiction in New York City," Proc. 3rd Natl. Conf. Methadone Treatment, pp. 2-16. New York: National Association for the Prevention of Addiction to Narcotics, 1971.

----. "People vs. Urines," Proc. 4th Natl. Conf. Methadone Treatment, pp. 325-326. New York: National Association for the Prevention of Addiction to Narcotics, 1972.

Glasscote, R. M., J. N. Sussex, J. H. Jaffe et al. *The Treatment of Drug Abuse: Programs, Problems, Prospects.* Washington: Joint Information Service of the Am. Psychiatr. Assoc, and the NIMH, 1972.

Goldstein, A. "Heroin Addiction and the Role of Methadone in Its Treatment," *Arch. Gen. Psychiatry,* 26 (1972), 291-297-

Goldstein, A. and B. A. Tudson. "Efficacy and Side Effects of Three Widely Different Methadone Doses," Proc. 5th Natl. Conf. on Methadone, pp. 21-44. New York: National Association for the Prevention of Addiction to Narcotics, 1973.

Hammond, A. L. "Narcotic Antagonists: New Methods to Treat Heroin Addiction," *Science,* 173 (1971), 503-506.

Harris, R. T., W. M. Me Isaac, and C. R. Schuster, eds. *Drug Dependence.* Austin: University of Texas Press, 1970.

Hughes, P. H., C. R. Saunders, and E. Schaps. "The Impact of Medical Intervention in Three Heroin Copping Areas," Proc. 4th Natl. Conf. Methadone Treatment, pp. 81-83. New York: National Association for the Prevention of Addiction to Narcotics, 1972.

Hughes, P. H., E. C. Senay, and R. Parker. "The Medical Management of a Heroin Epidemic," *Arch. Gen. Psychiatry,* 27 (1972), 585-593.

Jackson, A. H. and R. I. Shader. "Guidelines for the Withdrawal of Narcotic and General Depressant Drugs," *Dis. Nerv. Syst.,* 34 (1973), 162-166.

Jaffe, J. H. "Narcotic Analgesics," in L. S. Goodman and A. Gilman, eds., *The Pharmacological Basis of Therapeutics.* New York: Macmillan, 1965.

----. "Multimodality Approaches to the Treatment and Prevention of Opiate Addiction," in S. Fisher and A. M. Freedman, eds., *Opiate Addiction: Origins and Treatment,* pp. 127-140. Washington: Winston & Sons, 1973.

Jaffe, J. H., S. diMenza, and E. C. Senay. "Methadone Maintenance: Further Studies on the Role of Dosage," Rept. 33rd Annu. Sci. Meet., Committee on Problems of Drug Dependence, Toronto, 1971, pp. 1104-1132.

Jaffe, J. H., E. C. Senay, C. R. Schuster et al. "Methadyl Acetate vs. Methadone: A Double-Blind Study in Heroin Users," *JAMA,* 222 (1972), 437-442.

Jaffe, J. H., M. S. Zaks, and E. N. Washington. "Experience with the Use of Methadone in a Multi-Modality Program for the Treatment of Narcotics Users," *Int. J. Addict.,* 4 (1969), 481-490.

Johnson, R. B. and W. M. Lukash, eds. *Summary of Proceedings of the Washington Conference on Medical Complications of Drug Abuse.* Washington: Committee on Alcoholism and Drug Dependence of the American Medical Association, 1972.

Kleber, H. D. "Clinical Experiences with Narcotic Antagonists," in S. Fisher and A. M. Freedman, eds., *Opiate Addiction: Origins and Treatment.* Washington: Winston & Sons, 1973.

Knox, J. W. and J. R. Nelson. "Permanent Encephalopathy from Toluene," *N. Engl. J. Med.,* 275 (1966), 1494.

Kupperstein, L. R. and R. M. Susman. "A Bibliography on the Inhalation of Glue Fumes and Other Toxic Vapors—A Substance Abuse Practice among Adolescents," *Int. J. Addict.,* 3 (1968), 177-197.

Lennard, H. L., L. J. Epstein, and M. S. Rosenthal. "The Methadone Illusion," *Science,* 176 (1972), 881-884.

Lewis, J. R. "Use and Misuse of Pentazocine: A Follow-up," *JAMA,* 225 (1973), 1530-1531

Lieberman, C. M. and B. W. Lieberman. "Marijuana—a Medical Review," *N. Engl. J. Med.,* 284 (1971), 88-91.

Lloyd, R. L., R. N. Katon, R. L. DuPont et al. "Detoxification: What Makes the Difference?" Proc. 5th Natl. Conf. Methadone Treatment, pp. 275-283. New York: National Association for the Prevention of Addiction to Narcotics, 1973.

Louria, D. B. *Overcoming Drugs: A Program for Action.* New York: McGraw-Hill, 1971.

Lowinson, J. and J. Langrod. "Detoxification of Long-Term Methadone Patients," Proc. 5th Natl. Conf. Methadone Treatment, pp. 256-261. New York: National Association for the Prevention of Addiction to Narcotics, 1973.

McDonnell, K. "The Pentecostals and Drug Addiction," *America,* 118 (1968), 402-406.

Maugh, T. H. "Narcotic Antagonists: The Search Accelerates," *Science,* 177 (1972), 249-250.

Miller, J. "The Seed: Reforming Drug Abusers with Love," *Science,* 182 (1973), 40-42.

Millman, R. B., E. T. Kluiri, and M. E. Nyswander. "A Model for the Study and Treatment of Heroin Addiction in an Urban Adolescent Program," Proc., 4th Natl. Conf. Methadone Treat., pp. 47-50. New York: National Association for the Prevention of Addiction to Narcotics, 1972.

Muhammed, E. *Message to the Black Man in America,* no. 2. Chicago: Muhammed's Mosque of Islam, 1965.

Musto, D. *The American Disease: Origins of Narcotic Control.* New Haven: Yale University Press, 1973.

National Commission on Marijuana and Drug Abuse. "Inhalants," in *Drug Use In America: Problem in Perspective*, pp. 78-Washington: U.S. Govt. Print. Off., 1973.

O'Donnell, J. A. *Narcotic Addicts in Kentucky,* Public Health Serv. Pub. no. 1881, pp. 135-142. Washington: U.S. Govt. Print. Off., 1969.

O'Malley, J. E., W. H. Anderson, and A. Lazare. "Failure of Outpatient Treatment of Drug Abuse: I. Heroin," *Am. J. Psychiatry*, 128 (1972), 99-101.

Resnick, R. B., B. Kissin, H. Kleber et al. "Clinical Experiences with Narcotic Antagonists: Cyclazocine and Naloxone," Proc., 5th Natl. Conf. Methadone Treatment, pp. 447-451. New York: National Association for the Prevention of Addiction to Narcotics, 1973.

Rosenthal, M. S. and I. Mothner. Drugs, Parents, and Children: The Three-Way Connection. Boston: Houghton Mifflin Co., 1972.

Roszak, T. *The Making of a Counter-Culture.* Garden City, N.Y.: Doubleday, 1968.

Sapira, J. D. "The Narcotic Addict as a Medical Patient," *Am. J. Med*., 45 (1968), 555-588.

Schulte, N. and J. V. DeLong. *Heroin Maintenance: The Issues.* Washington: Drug Abuse Council, 1973.

Senay, E. C., J. H. Jaffe, J. N. Chappel et al. "IDAP—5 Year Results," Proc., 5th Natl. Conf. Methadone Treatment, pp. 1437-1464. New York: National Association for the Prevention of Addiction to Narcotics, 1973.

Senay, E. C. and P. F. Renault. "Treatment Methods for Heroin Addicts: A Review," *J. Psyched. Drugs*, 3 (1971), 47-54.

Senay, E. C. and M. Wright. "The Human Needs Approach to the Treatment of Drug Dependence," Paper presented at the International Council on Alcoholism and Addictions, Amsterdam, 1972.

Shick, J. F. E. and D. X. Freedman. "Research in Non-narcotic Drug Abuse," in S. Arieti, ed., *American Handbook of Psychiatry*, Vol. 6, 2nd ed., pp. 552-623. New York: Basic Books, 1975.

Shick, J. F. E. and D. E. Smith. "An Analysis of the LSD Flashback," *J. Psyched. Drugs*, 3 (1970), 13-19.

----. "The Illicit Use of the Psychotomimetic Amphetamines with Special Reference to STP (DOM) Toxicity," *J. Psyched. Drugs*, 5 (1972), 131-138.

Smith, D. E. and D. R. Wesson. "Phenobarbital Techniques for Treatment of Barbiturate Dependence," *Arch. Gen. Psychiatry*, 24 (1971), 56-60.

Taylor, R. L., J. I. Maurer, and J. R. Tinklenberg. "Management of 'Bad Trips' in an Evolving Drug Scene," *JAMA*, 213 (1970), 422-425.

Tennant, F. S., Jr. "Drug Abuse in the U.S. Army, Europe," *JAMA*, 221 (1972), 1146-1149.

Tennant, F. S., Jr., M. Tischer, B. Russell et al. "Treatment of Heroin Addicts with Propoxyphene Napsylate," Paper presented at the Committee on Drug Dependence of the National Academy of Science, Chapel Hill, N.C., May 23, 1973.

Torop, D. and K. Torop. "Hotlines and Youth Culture Values," *Am. J. Psychiatry,* 129 (1972), 106-109.

Vaillant, G. E. "A Twenty Year Follow-Up of New York Narcotic Addicts," Rept. 34th Annu. Sci. Meet. Comm. Problems of Drug Dependence of the National Academy of Sciences, Ann Arbor, Mich., May 1972, pp. 63-71.

Watson, R., E. Harmann, and J. J. Schildkraut. "Amphetamine Withdrawal: Affective State, Sleep Patterns, and MHPG Excretion," *Am. J. Psychiatry,* 129 (1972), 263-269.

Weinberg, J. A. and P. Grevert. "A Controlled Study of the Clinical Effectiveness of Urine Test Results in a Methadone Maintenance Treatment Program," Proc., 5th Natl. Conf. Methadone Treatment, pp. 1052-1059. New York: National Association for the Prevention of Addiction to Narcotics, 1973.

Wesson, D. R. and D. E. Smith. "Barbiturate Toxicity and the Treatment of Barbiturate Dependence," *J. Psyched. Drugs*, 5 (1972) 159-166.

Wieland, W. F. and J. L. Novack. "A Comparison of Criminal Justice and Non-Criminal Justice Related Patients in a Methadone Treatment Program," Proc., 5th Natl. Conf. Methadone Treatment, pp. 116-122. New York: National Association for the

Prevention of Addiction to Narcotics, 1973.

Wilbur, R. S. "How to Stamp Out a Heroin Epidemic—Army Style," *Today's Health*, 50 (July 1972), 9-10.

Yablonsky, L. *Synanon: The Tunnel Back.* New York: Macmillan, 1965.

Zelson, C. "Infant of the Addicted Mother," *N. Engl. J. Med*., 288 (1973), 1393-1395.

Notes

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