WORLD HEALTH ORGANIZATION

ORGANISATION MONDIALE DE LA SANTÉ

WHO Inter-Regional Workshop on
Prevention and Treatment of Drug Dependence

Alexandria, 16 - 21 October 1978

Adapting Western Drug Abuse Treatment Methods in Developing Countries

Consultant's* Background Paper 2

*Prepared by WHO Consultant, Dr Edward C. Senay, Professor of Psychiatry, University of Chicago, School of Medicine, Chicago, Illinois 60637, USA

The issue of this document does not constitute formal publication It should not be reviewed abstracted or quoted without the agreement of the World Health Organization Authors alone are responsible for views expressed in signed articles

Ce document ne constitue pas une publication Il ne doit faire l objet d aucun compte rendu ou résume ni d aucune citation sans l autorisation de l Organisation Mondiale de la Sante Les opinions exprimees dans les articles signés n engagent que leurs auteurs

Introduction

I want to begin by emphasizing a point made by Dr. Marten namely, treating individuals for drug dependence is not going to solve the public health problem of drug abuse. At least, it has not so far in any country in the world. Treatment is tertiary prevention and from the public health perspective, treatment can be, at best, only one component of an integrated effort. I also want to emphasize that drug abuse is not a problem like tuberculosis, schizophrenia or schistosomiasis; these problems remain relatively constant while the problem of drug abuse changes frequently. In the United States the drug abuse problems of ten years ago are not the drug abuse problems of today. This fact has major implications for treatment efforts. There is every reason to feel that the essential volatility of the drug abuse problem will be seen in the future in many nations. [32,33,34,35]

In comparison with 10 years ago, drug abuse in the U.S. now is:

1. seen in younger populations than ever before. Drug use and experimentation begin as early as the ninth year of life and is known in a few instances before the ninth year.
2. increasingly observed in females. In some studies in the United States eighth grade females have a higher percentage of experimental use of barbiturates and/or amphetamines and/or cannabis than males.
3. characterized by abuse of multiple substances in rotating

fashion. This is in contrast to the tendency of drug abusers in the past to use one drug.

4. characterized by a greater degree of risk taking than has ever been the case before, e.g., the identity and dangers of the drugs used may not be known to the user and the interaction between the drugs taken e.g., alcohol and barbiturates, may be vaguely known but is frequently a matter of indifference. In relationship to the past there is now an increase in willingness to risk death or serious medical consequences. Indeed the extremity of the risk may fit with the new psychology of drug abuse in which the teenager may derive status with peers from the fact of having taken a high risk and survived. This psychology has been seen recently in the United States in bold relief with the abuse of the drug phencyclidine (PCP).
5. occurring in social strata where drug abuse was never observed before. Rural communities as well as affluent communities are not free of drug abuse and some of these communities have severe problems.
6. characterized by an increase in the number of drugs abused while the doses and routes of administration of older drugs are changing e.g., hashish oil replacing relatively low dose "reefers".
7. Uncertain with respect to heroin. Heroin use trends are difficult

to identify because of the problems of obtaining data but the preponderance of evidence suggests that while drugs such as Phencyclidine and cocaine have rising popularity, levels of heroin experimentation are not dropping. I believe that heroin dependence will be seen in greater numbers than ever before when our youthful generation of polydrug abusers matures. But this is admittedly speculative.

8. demythologized. In the 60's potential recruits to the drug culture were told that they would have marvelous insights into themselves and the universe. The leaders of the drug culture in the 60's were well to do college students. But now there is little mythology attributed to drug experimentation. The experience is reduced to its immediate sensory value. The ritual controls related to the myths have been lost so the drug induced behavioral changes are now less controlled and hence are more pathologic.

9. increasingly commercialized. This creates an enormously important force in sustaining the spread of all drugs. In addition to alcohol and nicotine industries which spend millions of dollars advertising to create social pressure for intoxication we now have a cannabis industry reaching the billion dollar mark and adding to the already powerful social force promoting

intoxication.

With the above mentioned changes in the characteristics of the problem there have been corresponding changes in the needs of treatment programs. In the United States for example, the treatment programs of ten years ago, which were constructed for an older, male, heroin dependent population do not serve well the needs of an increasingly youthful, increasingly female population with multiple, often simultaneous, dependencies. The clinician now must learn about and organize programs for pregnant females dependent upon opiates and/or many different drugs. The clinician must also learn about and organize treatment for the abuser of new psychoactive drugs such as phencyclidine (PCP) or combinations of drugs such as Talwin and Pyribenzamine ("T and Blues").

Future Trends

Current data suggest that the trends in the United States described above are being seen worldwide. While the set of drugs involved may differ from the set being used in the U.S. the youthward movement of drug experimentation and the use of multiple substances increasingly characterizes the world scene. The significance of these trends in terms of productivity and public health impact is not yet clear but one cannot reasonably expect social benefit from a situation in which increasingly younger cohorts of males and females ingest a variety of biologically and psychologically potent drugs.

As stated above we should expect periodic major changes in the trends of drug problems confronting us. The number of drugs with an abuse potential increases almost daily and the number of possible interactions among different drugs is increasing geometrically. When we have increasing numbers of potent drugs sought by a broad spectrum of youth in both technologically developed and undeveloped countries in the world we will see new treatment needs and new challenges to our ability to create meaningful social policies.

The use of cannabis preparations in particular appears to be headed for increasing use by the youth of the world. Given this trend it is possible that the dose will increase as the numbers of users increase. We will then have a situation analogous to that seen with alcohol where it appears that there is a simple positive linear relationship between per capita consumption and number of people suffering

undesirable effects from the drug and from the lifestyle associated with it. The question of proper treatment is, of course, raised but the ultimately more important question of prevention is in the forefront.

The use of heroin by the intravenous route appears to be growing particularly among late adolescents of a large number of countries. For many countries in Asia the shift from oral or smoked opium to intravenous or smoked heroin has generated changes in the severity and types of problems encountered.

Drugs and crime and in particular narcotics and crime appear to have a kinship of some kind although experts disagree on whether one is caused by or causes the other. Some also dispute any relationship but certainly to many serious students of drug abuse drugs and crime appear to be associated. Of course the relationship may be dependent upon social policies which make drug use a crime.

We can look for a growing worldwide increase in crime as we see an increase in drug abuse. This means that there will be a continuing relationship between the criminal justice system and drug abuse treatment efforts.

In the future we can look for new chemotherapeutic approaches to the problem of drug abuse. Currently, use of Methadyl Acetate (LAAM) and Naltrexone promises to increase the options available to treatment

programs. The possible impact of endorphin research, of course, may alter fundamentally our understanding and treatment of many conditions including drug abuse.

In summary then we can look for a worldwide growth in the number of drug abusers and/or drug dependent persons. This will create a demand for treatment and indeed our meeting this week reflects just such an increase. Again I want to stress the importance of recognizing that treatment programs must be flexible so that they may change as the social problem of drug abuse changes.

Integrated Approach

People in the drug abuse field frequently ask "Are therapeutic communities more effective than narcotic substitution programs?" The question is partially a false one because the two treatment approaches serve different but overlapping populations. Therapeutic communities are effective with many different kinds of drug abusers but in general they are not suitable for the employed addict with a stable family. Such addicts cannot afford to give up either their family or their job to obtain treatment. The desires of addicts also cannot be disregarded as many will not accept therapeutic communities. Severely disturbed addicts are also not suitable for therapeutic communities.

One can ask "What is the best treatment for narcotic addicts who could be treated in therapeutic communities or in Methadone Maintenance?" We do not know the answer to this question because all attempts to assign such patients randomly have failed. We attempted to do this with hundreds of addicts in Illinois but found that while we could recruit them for many research studies they would not accept assignment to therapeutic communities in numbers large enough to constitute a reasonable study. Therefore, we do not have sound data which would tell us if one of these approaches is superior to the other. We are well advised then to create our treatment programs so that we may offer both options to addicts seeking treating.

One of the problems which can be avoided is rivalry between narcotic substitution programs and therapeutic community programs. The data of Dr. Sells on the effectiveness of drug abuse treatment in the United States - this was a study of the treatment outcome of over 40,000 drug abusers - confirms common clinical experience that both methods have something to offer.[1] What should be avoided is the creation of a treatment system which offers only one or the other alternative. Again our experience in Illinois is germane. Dr. Jerome Jaffe, the architect of the Illinois effort, decided to avoid the factionalism which he saw in many of the large cities of the country by creating an integrated multimodality program.[2] Under his leadership we created such a program in which classical therapeutic communities, modified therapeutic communities, Methadone Maintenance Clinics, detoxification wards, and narcotic blocking agent programs were jointly administered. Addicts were diagnosed in a central intake unit which attempted to make the best fit between clinical needs and clinical programs. Thus there was no case in which an addict was offered one modality and not made aware of the existence of others. Once staff is properly trained and the core of this training is staff rotation through the various modalities there are no administrative problems encountered which would not be encountered in administering a single modality program.

Treatment Objectives

Intuitively the goals of treatment would seem to be self evident but practically the goals of treatment need to be defined explicitly. For example, many, if not most opioid dependent persons, are not able to maintain drug free status after participation in any known form of therapy. Drug dependence for them appears to take on the form of a chronic relapsing disease. For such patients the treatment goal of abstinence may be unrealistic, wasteful of resources and destructive because of its built to fail nature. The usually implicit goal of such treatment attempts is the notion of returning the patient to a prior state of health but for many patients adaptation has never been successful so there is no state of health to return to. For such patients it is appropriate to speak of primary habilitation rather than rehabilitation.

There has been a transfer of terms from the world of physical therapy to the world of psychological therapy. Rehabilitation is one of these terms and its usefulness is limited when applied to drug dependent persons. In some sense most of these programs, in any national setting, have to be social programs with a medical core; that is, they must provide for job training, education and other types of components necessary to a successful reentry to ordinary social living. The drug abuser usually will have developed a life style which is associated with loss of job skills if he has had them in

the first place.

Many of the concepts and terms of traditional psychiatric therapy are also inappropriate. Thus it is proper to speak of affiliation therapy to describe the process whereby a drug abuser forms relationships with professionals and paraprofessionals in a drug treatment program and it is inappropriate to describe this process as psychological therapy although psychological therapy may be a component of the whole effort. I think it best to describe the relationship between the addict and the treatment program as one of institutional transference. This institutional transference is as important as any individual transference the addict may develop e.g., the drug abuser in a therapeutic community has a stronger relationship with the program as a whole than he/she has with any one individual.

The core concepts in a drug treatment program must be defined with even more care when there is a close tie with the criminal justice system. The criminal addict may in fact need psychological therapy (or he/she may not) but usually he/she will also need the kinds of components ordinarily found in social programs - job training, remedial education, etc.

Commonly, drug treatment programs in the United States have not been sufficiently cognizant of the full set of addicts needs if these addicts are to be integrated successfully into society. A common place for this

to become apparent is in the "re-entry" phases of therapeutic community programs. Many times the recovering drug abuser has done very well in a therapeutic community setting but when he confronts the many new and difficult pressures of "ordinary" life - e.g., the strong social pressure to consume alcohol - he finds that he is not, as he and the treatment program have labeled him, a next-to-well person.

It is as if the architect of these programs believed that the addict had a defect or disease which would be cured by exposure to the dynamics of the therapeutic community. In fact recovered drug abusers in the reentry phases of therapeutic community programs need more help in these phases than they needed in the so called treatment phases. But the help has to take a different form. In early phases of these programs the patient-client is immersed in a social system in which there is considerable social pressure against using drugs but in ordinary situations there may be a change in the polarity of this pressure.

The problem of sexual expression also requires counseling. The basic point in this context is that the nature of the concept underlying the form of the program must be explicit. If one elects a "Medical Model" rather than a "Social Model" program the results are goint to reflect the choice with the probability being that drop out rates will be higher in Medical Model programs. The question of leadership of these programs is discussed later in this paper.

Recent research in the U.S. suggests that the successful maintenance of a post hospital treated schizophrenic requires an active community based program which provides for multiple continuing supports. Such a program may be indicated for many addicts for while they do not have the adaptative problems of the schizophrenic they have need for much more support than they appear to need. The skills involved in "Street hustling" and "Making It" in the straight world do not overlap very much.

The goals of detoxification efforts for narcotic addicts can and should be modest. Occasionally an addict will detoxify and maintain a long period of abstinence but this is a rare outcome. Commonly most addicts do not complete out-patient detoxification programs but benefits may accrue despite the seeming failure. The addict may reduce the strength of his habit and not have to steal as much to support it. He may gain access to health resources and improve his health. He may use the detoxification period to reorganize his energies and then attempt to get a legitimate job. Many addicts are intensely ambivalent about their habit and will use relatively small increments of help in meaningful ways.

We are just beginning to study the factors involved in withdrawal from narcotic drugs. Our research indicates that detoxification regimens in the past were so rapid that they caused intolerably high degrees of autonomic arousal and drove patients back to illicit drug use.[3]

Possibly we may improve our understanding of detoxification to the point where goals can be higher but given the state of knowledge today we can expect only limited success from detoxification efforts.

The pregnant narcotic addict poses a special problem. The human adult rarely dies in narcotic withdrawal but the human fetus does. Detoxification of the pregnant narcotic addict must be accomplished slowly - if indeed it is attempted at all. Our experience with roughly 400 pregnant addicts over a span of seven years - was that high doses of narcotics given for maintenance (50 to 100 mg. of methadone daily) were associated with high perinatal morbidity and mortality. On the other hand withdrawal of narcotic dependent mothers often resulted in still birth. We arrived at the policy of low dose Methadone Maintenance - 30 mg. or less of methadone daily and found that it offered the best compromise.

Another consideration in setting treatment objectives relates to the near universality of drug use of some kind. What, for example, should be the full set of treatment objectives, if any, for the narcotic addict who is also a heavy user of nicotine? What set of drugs are you going to regard as acceptable or as unacceptable?

The substance abuse concept is being explored in the United States at present. This concept maintains that any use of psychoactive substances which leads to psychologic or biologic harm is undesirable. The social

acceptance of alcohol and nicotine in the United States is associated with major health problems. The substance abuse perspective seeks to view drugs from a health rather than a cultural or social basis and this perspective would reject the current form of drug treatment efforts in the United States because they define certain drugs e.g., heroin, barbiturates as harmful while remaining silent on alcohol and nicotine.

In contrast to the flexibility of objectives with narcotic dependent persons, treatment objectives for the non-narcotic dependent require abstinence as a goal. Since the dangers of death in withdrawal from non-narcotic substances such as alcohol, barbiturates and diazepam are much greater than is the case with narcotics, the medical component of the treatment effort must be more comprehensive and in hospital care available although a non-medical residential setting such as a modified therapeutic community is feasible for most withdrawal efforts regardless of what drug is involved. There are some cases which will require full hospital services because of the severity of the withdrawal syndrome and the basic threat to life. Once the detoxification phase is over the same kind of social programming is necessary as in the instance of treatment of narcotic addicts.

The Diagnostic Process And Its Implications For Treatment

The diagnosis of drug dependence of the morphine type depends upon 1) a history in which one finds "runs" of weeks or months in which there is daily use of an opioid, and/or 2) the presence of "tracks" which can be old or new, and/or 3) observation of signs and symptoms of narcotic withdrawal and/or 4) the presence of morphine and/or common adulterants of morphine such as quinine or anti-histamines in the urine. No one of these features is pathogomonic and even if all are present the patient in question may still have minimal physiologic dependence. The Nalline test and lately the Naloxone test were devised to improve diagnostic precision but these tests are least effective where they are most needed, i.e., in the borderline cases. Unequivocal evidence of physiologic dependence in borderline situations cannot be obtained. Pupillary responses to Methadone challenge, in one study in the U.S., indicated that as many as 25% of heroin addicts with all the usual criteria for the diagnosis of heroin dependence and all the necessary criteria for qualifying for Methadone Maintenance under U.S. Food and Drug Administration regulations - were not physiologically dependent on opioid drugs.[4]

The definition of drug dependence employed should be explicit. Can a person be drug dependent without being physiologically dependent on the drug in question? The answer to this question is of extreme importance if narcotic substitution programs are planned. An explicit policy should indicate whether or not the borderline physiologically dependent addict should be given quality narcotic drugs which will, in all likelihood,

induce the first real degree of pharmacologic tolerance and dependence on narcotics which the patient has ever had.

If detoxification programs are planned then the question becomes one of whether or not to use narcotic drugs at all. Again the early phase of withdrawal utilizing potent narcotic drugs may be of sufficient length to induce pharmacologic tolerance. Another possibility is that unusual degrees of sedation may be induced. If some patients are "nodding" from the narcotic used in a withdrawal schedule the diagnostic techniques utilized should be reviewed. The induction of vomiting may also be a clue that the "pseudo-junkies" are slipping through the diagnostic screen.[5] We have found that drug histories obtained from patients seeking treatment are for the most part true - as confirmed by thin layer chromatography of urine specimens matched against the histories.

We use, as a clinical rule-of thumb, for detecting those with minimal or absent dependence an answer from the addict that in the two weeks prior to coming into treatment he used drugs on an average of once or twice a day. If the addict also says that the narcotic was of low quality then the suspicion of a pseudo-junkie should be high.

Given the trends in drug abuse described above one also has to make agressive inquiry into the use of many substances. Psychoactive drugs are proliferating at such a rapid rate that both users and treaters frequently do not know the full range of effects, side effects and the potentials for drug - drug interactions. Diazepam

use and abuse in the United States is a case in point. It took some time before "street" people became aware that its abuse could result in physiologic dependence with seizures in the withdrawal period. One of the problems for clinicians is that patients taking 200-400 mg. of diazepam a day or other CNS depressants - may get an amnesia for how much drug they are taking. With such patients careful review of drug intake in the two weeks preceeding admission is necessary. Patients can have periods of "blacking out" when their cognitive process appear to come to a halt usually but not always for brief periods of time. Clinical phenonmenon such as this may furnish the clue that the patient is an abuser of depressants.

Policy makers need to consider the various techniques of detecting drugs in urine and how to allocate resources. Given the increasing number of possible drugs to be screened for and the increasing costs of so doing it appears that urine screening should be used to confirm clinical suspicion rather than carried out as a routine on every patient every week. Variable random subsets of drugs can be tested for on a regular basis to monitor both clinical and programatic progress. Thin layer chromatography, radio-immune assay, mass spectroscopy are some of the relevant techniques. For a full discussion please consult the manual by De Angelis and the NIDA manual cited in the bibliography of this paper.[6,7]

Management of Overdose

Opioids

The classic triad of pin-point pupil, shallow coma and depressed respiration is seen in most overdoses of opioid drugs. But pupils may be dilated in meperidine overdose, hypoxic states, ethanol, barbiturate or phenothiazine overdose. Prompt improvement in respiratory rate following I.V. administration of Naloxone seals the diagnosis but since multiple drugs are used so frequently patients must be monitored with this possibility in mind. Specifically, in opioid overdose, one should carry out the following procedures: [8,9,10]

1. Clear away, maintain respiration artificially, and administer oxygen.
2. Administer Naloxone HCL .4-1.2 mg. IV (Pediatric dose .05 mg./kg.);[36] Naloxone is the drug of choice, with a high therapeutic margin of safety, but in the U.S. 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 respiratory rate implies that factors other than opioids are responsible for respiratory depression. The following considerations should be kept in mind when administering antagonists:

   Antagonists are effective for about 2 hours and repeat doses may be necessary. Heroin may remain active for 6 hours,

methadone for 24 hours, and l-alpha-acetyl-methadol for 48-62 hours, so care must be taken not to discharge the patient prematurely. As a rule of thumb, one should observe all opioid overdose cases for at least twenty-four to forty-eight hours in the hospital. If this is not possible, after discharge, someone should be with the patient at all times for a one or two day period.

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.

Sedatives and Minor Tranquilizers

All CNS depressants if taken in sufficient quantity produce a similar comatose state. The following measures are involved:

1. Gastric lavage only if drug taken orally, recently, and patient is conscious.
2. Respiratory support - intubation and mechanical ventilation if necessary. Administer oxygen in high concentration, ideally a tidal volume of 12-15 cc/1 kg. body weight.
3. Treat shock with IV fluids and vasopressors if indicated. Monitor electolyte balance.
4. Continuous monitoring of vital functions until consciousness returns.
5. If barbiturates are implicated, dialysis may be useful. Analeptic drugs are contraindicated in barbiturate overdose.
6. Gluthethimide overdose can be associated with a cyclic pattern of somnolence and altertness as the drug is excreted into the gastro intestinal track where it is inactive and then reabsorbed into the blood stream where it is active once again.
7. Suicidal potential must be assessed.
8. Methaqualone overdose may present with an intact gag reflex. Intubation of patients with a methaqualone overdose may be difficult because of this fact.

Stimulant Overdose

Stimulants, including phenmetrazine, methylphenidate, cocaine, amphetamine and its derivatives, when taken in excessive quantities produce a similar clinical picture, including some or all of the following signs:[37]

1. Insomnia.
2. Anorexia, with possible malnutrition.
3. Dilated pupils, muscular tremor.
4. If taken as snuff, possible damage to nasal mucosa, if taken IV, extensive needle scars and associated pathology.
5. Verbosity; constant, "rambling" talk.
6. 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.
7. If taken in extreme quantities severe hypertension, hyperthermia, tachycardia and convulsions which may be lethal.

Treatment must be aggressive if severe degrees of symptoms are observed. Hyperthermia must be combatted and anti-hypertensive agents employed. Diazepam is a particularly valuable drug to sedate patients with extreme restlessness.

In milder forms the symptom of stimulant excess can be treated with sedatives and with a "talk down" in a quiet place as is described under hallucinogens.

Tricyclic Anti-depressant Overdose

Some abuse of Tricyclic Anti-depressant drugs is being seen in the United States. Overdose of these drugs is characterized by tachcardia, dry skin and mucous membranes, hypertension and pupillary dilation or constriction. Choreoathetosis, bladder distension, myoclonus and arrythmias may also be observed. Physostigmine Salicylate 2 mg. IV (pediatric dose 0.5. mg.) can be effective in overcoming symptoms. Arrythmias can occur as a late complication. If physostigmine is used anti-cholinergic agents such as glycopyrrolate and propantheline bromide should be at hand.

Hallucinogens

Serious physical reactions to drugs such as LSD, STP, phencyclidine (PCP) and belladonna alkaloids may consist of convulsions, elevated body temperature, severe vomiting, and/or cardiac dysfunction.

Milder syndromes resulting from hallucinogenic chemicals may consist of disorientation, anxiety or transient panic. There may be sensory disturbances including abnormal sensitivity to or interpretation of stimuli. Hallucinations, both auditory and visual, but usually visual, can be prominent and there may be ideas of reference and inappropriate affect.

Psychiatric syndromes attributable to hallucinogens can sometimes be discriminated 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 problem. 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 not that "they" are crazy. Their judgement and control is intact to a degree not seen in the schizophrenic. In addition the symptomatology of the "bad trip" usually is 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.

Dilated pupils, cramps, nausea, or mild tachycardia are common. Some patients who have used hallucinogens report difficulty talking or communicating

while intoxicated and some become frightened. Hallucinogens do not usually leave significant long-term pathology but chronic psychosis has been reported particularly after PCP.

Although differing somewhat from drug to drug, most hallucinogens begin taking effect 1-2 hours after an oral dose (faster in other dosage forms). Stimulation lasts for some hours and then there may be a phase of depression or a phase of unwanted excitement "I can't come down. Usually the individual is fully "normal" after 24 hours, although he may report unusual thoughts or feelings as much as a week later but he will not remain intoxicated. The most common adverse reaction is panic, usually because the psychological factors involved in the use of the drug are pathologic and because the social setting is not supportive.

Treatment must be non-threatening.[11] After checking vital signs to eliminate possibility of physiologic 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 distractability involved. In the case of PCP overdose any stimulation at all may be undersirable.

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. If possible a familiar person should also be present but the familiar person will not be helpful if the patient has a conflict ridden relationship with this person.

If agitation is not reduced by psychological approaches Chlordiazepoxide, Diazepam, or barbiturates may be helpful. Phenothiazines should not be used as they may interact with hallucinogenic drugs to cause lability 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 small number of hallucinogenic experiences. Typically these are recurrent "spells" of a few seconds or minutes of acute depersonalization or hallucinations reminiscent of the hallucinogenic experience or of some part of it. 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 usally adequate treatment. If flashbacks persist and are severe, minor tranquilizers and/or psychotherapy may be indicated.[12]

Cannabis

Cannabis products such as marijuana and hashish are associated occasionally with reactions severe enough to require medical attention. Acute panic may develop in lower dosage forms and with the high doses of THC contained in hashish, acute psychoses can be seen.[13] The general measures just described for hallucinogens should be employed. Recently severe overdoses of THC have been observed in young people trying to smuggle Hashish Oil into the U.S. in balloons which they have swallowed. The balloons have ruptured and the patients have presented with profound coma.

Volatiles

The use of volatiles is seen predominantly among young people 11-18 years of age. These young people frequently have difficulty getting access to common drugs of abuse. Volatiles 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 normally short and is characterized by stuporous, hostile, "drunk" behavior. Often a chemical odor may be noticed.

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 the cessation of use as the young person's age increases. Treatment of excess intake should follow the general measures described under hallucinogens. Occasionally a volatile user dies, probably from a cardiac arrythmia.

Opioid Withdrawal

The opioid withdrawal syndrome, while seldom fatal, can cause intense suffering, and should be treated medically. Effective treatment is simple and inexpensive. There is no evidence to support the notion that cold turkey withdrawal has any beneficial effects. On humanitarian grounds I would reject it as inconsistent with medical ethics. The treatment of choice is to stabilize the patient on methadone and then to withdraw this drug gradually. Constant monitoring is necessary, for it is now common for heroin addicts to be addicted concurrently to sedatives and/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., in a patient who is severely dependent on alcohol, barbiturates, and heroin, give diazepam for alcohol dependence, barbiturates for the barbiturate dependence and methadone for the heroin dependence. Alternatively one may use either diazepam or barbiturates alone to cover the dependency on alcohol and barbiturates. I prefer to withdraw the depressants first as they provide the most danger. Next I withdraw the opiates. But some experts prefer the reverse.

In uncomplicated opioid dependence, frequently a single oral dose of 20 mg. of methadone will suppress 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 5 mg./day until abstinence is

achieved. Recent research carried out by our group at the University of Chicago suggests that much smaller daily decrements may be superior in retaining patients in treatment and in reducing illicit heroin use during withdrawal.[3]

Clinical experience indicates that problems in achieving abstinence are substantial for many patients. Methadone maintained patients requesting to be withdrawn should have their motivations reviewed prior to any attempt to acheive abstinence. Patients who attempt to withdraw because of external pressure, e.g., from peers or governmental regulations, do not do well. The patient who has made steady progress and wants in his/her own right to become abstinent has the best prognosis. The abstinence attempt should occur at a time in which other areas of the patient's life are relatively stress free.

The opioid withdrawal syndrome in newborn infants can be delayed for many days. Various studies place the frequency of the withdrawal syndrome in neonates of opiate-dependent mothers between 40 and 85 percent. Treatment of this condition is usually straight-forward with paregoric (4-8 drops q6 to 8h), phenobarbital (8-10 mg/kg/day in 4 divided oral doses) or chlorpramazine, 2.8 mg/kg/day in 4 divided oral doses. Diazepam has also been effective but its routine use is not recommended because the parenteral form has sodium benzoate as a preservative. Sodium benzoate inhibits albumin binding of indirect bilirubin which may enhance the development of bilirubin encephalopathy in jaundiced infants.

Sedative Withdrawal

Withdrawal from CNS depressants is more medically serious than is withdrawal from opiates. It is imperative, therefore, that withdrawal be conducted under close supervision in a hospital setting. Recently, outpatient withdrawal has been successfully accomplished but in general it should be avoided if at all possible.[14]

Withdrawal from short-acting sedatives begins within 24 hours while 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 sub-sets.

Treatment

CNS depressants, including sedatives such as barbiturates, methadone, gluthethimide, minor tranquilizers, and alcohol, are cross-tolerant, and theoretically withdrawal syndromes from them may be treated identically with short-acting barbiturates. However, many practitioners in the U.S. use barbiturates for withdrawal from sedatives, and a minor tranquilizer, such as Chlorodiazepoxide or Diazepam for alcohol withdrawal. Given the demonstrated effectiveness of each of these regimes there is no compelling rationale for change.

Berle, Gamen, and Lowinson find that alcohol/sedative addicts can be detoxified safely with sodium amytal, according to the following schedule:[15]

Day 1: 4 doses of 250 mg. IM QID or 8 doses of 125 mg. IM every 3 hours,

Day 2: 4 doses of 200 mg. orally QID,

Day 3: 4 doses of 100 mg. orally QID,

Day 4: 3 doses of 100 mg. orally TID,

Day 5: 2 doses of 50 mg. orally BID,

Day 6: 2 doses of 50 mg. orally BID,

Day 7: 1 dose of 50 mg. orally, 24 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 Withdrawal

Usually the chronic abuse syndrome will be alleviated after a single sleep period (often 24-48 hours long). But sometimes difficulties persist for weeks or months and are characterized by moderate to severe depression, with suicide a possibility, sleep disturbances, suspiciousness, hostility and sometimes persisting tremor.

Initially treatment should be oriented to restoration of biologic health including sedatives at night until the 24-hour wake-sleep cycle is restored. If there is persisting psychotic symptomatology major tranquilizers are indicated. 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. After medical needs are met, there should be referral for long-term care.

Resources Required

Milder forms of the syndromes described above can be managed in non-medical surroundings. Non-medical detoxification centers such as pioneered by the Toronto group for alcohol withdrawal and modified therapeutic communities can be used with good effect. But standard medical and psychiatric facilities are, of course, required if medical aspects of overdose or withdrawal are severe. Excellent manuals have been developed by the National Institute on Drug Abuse both for physicians who work in drug programs and for physicians who do not work directly with large populations of drug abusers.[8,9,10]

Training in "talking down" patients does not have to be expensive as the principles are simple.

Narcotic Substitution Treatment Methods

Methadone maintenance, pioneered by Dole & Nyswander in the 1960's, has been an acceptable and effective treatment for many chronic opioid addicts. The consensus of workers in the field is that drug treatment programs using methadone can be useful for some 40 to 60% of addicts in aiding them to achieve, at a minimum, some reduction in illicit drug use and criminality and, at a maximum, successful reintegration with mainstream society with complete cessation of illicit drug use and crime.[16,17,18,19,38]

Methadone therapy does not have the goal of "complete cure," if by cure we mean complete and permanent abstention from all opiate drugs and full social integration. In view of the poor prognosis for many heroin addicts, goals of methadone treatment are: reduction or cessation of illicit drug use, reduction or cessation of criminal activity, increase in productivity as reflected by employment in the legitimate job market or by successful functioning in homemaker or student roles, increase in self esteem, and improvement in family and community functioning.

Methadone, used as a maintenance drug, has several common side effects: sedation, constipation, sweating, urinary retention, and changes in libido-usually a decrease but occasionally an increase. Pruritis, urticaria, nausea, or delirium also have been reported. Appetite may improve with the consequent development of a weight problem. Tolerance to most side effects usually develops quickly, except for constipation and sweating, but these problems usually disappear after a period of weeks or months.

Lowering the dose is frequently effective in relieving these problems.

When addicts receive methadone in the dose ranges approved by the FDA i.e., 1-120 mg. per day, narcotic hunger is eliminated and tolerance to street narcotics is raised to the point where they have little effect. According to some theorists, extinction of the habit of taking intravenous heroin occurs because of the loss of positive reinforcement. But other theorists point out that many addicts do not get a high from narcotics and use them solely to relieve the abstinence syndrome.

Double-blind studies indicate that treatment results are the same if average doses of 50 mg. or 100 mg. of methadone per day are employed.

While substantial progress is made by some patients, others use alcohol and a variety of other drugs in excess.

Weekly or monthly urinalysis for the detection of the use of methadone, heroin, and other drugs is a part of maintenance treatment. Frequent urinalyses serve a deterrant purpose because misrepresentation of drug use is more difficult when regular testing will reveal what the patient is doing. Tests positive for drugs indicate that the patient needs help while negative tests indicate ability by the patient to control his behavior. Some use urine test results in a punitive fashion. This may inhibit the formation of optimal relationships between patients and staff.

A typical methadone maintenance clinic provides oral methadone plus vocational, social and legal counseling. Groups, primarily of a confrontational nature with an emphasis on honesty and direct expression of feelings,

are optional. Groups are accepted by some addicts but rejected by many others.

The drawbacks of methadone maintenance are that patients must continue clinic attendance for the indefinite future and must continue to take a drug on a daily basis. Although the evidence is substantial that long term administration of methadone is safe there are nonrational fears about such long term drug taking. Patients fear that methadone will "rot" bones and sex organs. Such fears can be remedied usually with reassurance and citation of the fact that there is no scientific evidence for such fears.

Patients who require care in a hospital should be maintained on their regular maintenance dose throughout their hospital stay. Their analgesic needs are, interestingly enough, not influenced by the fact that they are taking chronic methadone. They need analgesics in ordinary doses plus their methadone. Pentazocine should not be used for analgesia in active narcotic addicts because it has narcotic antagonist properties and will precipitate abstinence.

Ex-addicts or more properly, recovering addicts, can make valuable contributions to drug treatment programs. They can mediate the sociocultural gap between physicians and addicts and serve as models for new patients. I will comment more on their use in the constraints section of this paper.

Diversion of methadone is a serious problem in some communities. Patients will take some of their methadone and sell the rest. The political

aspects of the diversion problem are particularly troublesome in trying to expand services to drug abusers.

Resources Required for Operation of Out-Patient Clinics

All the treatment methods described above can be carried out in out-patient clinics. About 5,000 to 10,000 square feet of space are required with a nursing station and security equipment if drugs are to be stored overnight. Ideally, each counselor should have a private and quiet room for individual counselling sessions. There should be group rooms large enough to accomodate 15-30 people. This space can also be used for educational efforts. The clinic should have a large space for meetings of the staff and/or large groups of patients. Ideally, the clinic should be located within easy walking distance of a hospital.

One half-time to one full-time M.D. is needed with 2-3 R.N.'s and/or L.P.N.'s for dispensing medication and/or for counselling. About 1 counselor (ex-addict, paraprofessional) or social worker or psychologist per 30 patients is ideal. One position in the clinic per 300 patients should be allocated to vocational rehabilitation, and to create and maintain an activities program.

The cost of out-patient treatment for opioid dependent persons is about $1700-$2000 per year in U.S. dollars.

Standards for drug treatment clinics have been developed by the Joint Commission for the Accreditation of Hospitals. These standards include guidelines for space, diet, etc.[20]

Heroin Maintenance

The use of heroin as a narcotic substitute in America has recevied increasing attention in the past few years.[31] But to date the research required to test this idea has not been carried out because of intense emotionalism. The short duration of action of heroin, the continued use of needles together with probable difficulties in control over diversion make it unlikely that heroin will be a useful narcotic substitute in the America context but in other contexts its use may have a place. Studies of this possibility are needed.

New Approaches

Methadyl Acetate or l-alpha-acetylmethadol (LAAM) is a congener of methadone which suppresses the opioid abstinence syndrome for 48 to 72 hours.[21] Double-blind comparisons with methadone indicate that it is identical to methadone in therapeutic efficacy but it appears to be effective with a different subset of addicts than those who benefit from methadone. Some observers feel that Methadyl Acetate is effective for addicts who do not use opioids for purposes of tranquilization. Addicts who need narcotics for tranquilization appear to prefer methadone because, they report, it has more sedating effects than Methadyl Acetate.

Clinic visits for patients on LAAM can be reduced in comparison with methadone. Methadyl Acetate is usually given on Monday, Wednesday and Friday. Its use means that no drug need ever leave the clinic thus solving the problem of drug diversion. With use of Methadyl Acetate, clinic resources necessary for dispensing, recording and monitoring the flow of drugs can be reduced and in clinical work emphasis on drug taking can be replaced with an emphasis on psychosocial issues.

Overdose of Methadyl Acetate may prove to be difficult to treat because of its long acting nature. If supplies of this drug are stolen and it gets on the street it may cause problems because it has a faster onset of action when taken orally, 20-30 minutes, than when taken intravenously, 2-6 hours. Street addicts may shoot the drug intravenously and feel that they have gotten poor quality drugs when hours go by and they notice no

effect. They may then take more methadyl acetate or perhaps some other narcotic and have a serious overdose.

Methadyl Acetate is now in the final stages of testing and may become generally available in another year or two.

DARVON-N (Propoxyphene Napyslate) has been used as an adjunct to withdrawal and as a maintenance drug. It has a relatively narrow toxic therapeutic ratio and its use currently is restricted to a few research clinics. It's possible position as an important drug for treating opioid dependence depends upon future research findings.

Narcotic Blocking Agents

Currently Naltrexone, a narcotic antagonist with a duration of action of 24 hours, is under intensive investigation in the U.S.[22] It is not yet available for general use but holds promise of being an addition to the treatment options for abstinent narcotic addicts. Once daily administration of 25-75 mg. suffices to increase sharply the amount of narcotic an addict must take to get a narcotic effect.

Nausea and gastro-intestinal cramping are side effects of Naltrexone but are easily managed in the clinic. Many patients tend to be irregular in taking the drug while some cannot be maintained on it. Naltrexone shares with its predecessors Cyclazocine and Naloxone the problem of patients failing to take the drug on a consistent basis. Apparently drugs without agonist effects are not acceptable to many if not most addicts. The position of Naltrexone as an addition to chemotherapeutic options should become clear in the next few years.

TRANSCENDENTAL MEDITATION, BIOFEEDBACK, RELAXATION TECHNIQUES ACUPUNCTURE AND BEHAVIOR MODIFICATION

Transcendental meditation, biofeedback, relaxation techniques, acupuncture and behavior modification, as treatment modalities for drug dependent persons, are being examined currently in the U.S. Transcendental meditation has been offered to heroin addicts throughout the country. But the alien aura of this technique to inner-city minority groups in conjunction with the requirement that an addict must be drug-free for three weeks before training can start, appears to have prevented meditation from winning wide acceptance with opiate addicts. Transcendental meditation appears to be most applicable in drug prevention efforts with younger populations who are experimenting with drugs and have not become dependent upon them. Benson and Wallace report success with such populations in substituting the positive behavior of meditation for the potentially destructive behavior involved in polydrug abuse.

Biofeedback has not been studied on any significant scale in drug-dependent populations. It is quite possible that it may have applications of value but at present much research remains to be carried out. Similar remarks apply to relaxation techniques. We have used such non-chemical methods of anxiety control with limited success.

Acupuncture and behavior modification have been explored but there are no publihsed reports of research carried out in controlled fashion. Thus, definitive evaluation of these techniques is not possible at this time.

Mandatory Treatment

In the United States, court ordered treatment for addicts usually requires that they have not committed an offense involving weapons.[23] The National Conference of Commissioners on Uniform State Laws created guidelines for mandatory treatment:

1. No mandatory treatment should be provided except for those who have a criminal violation.
2. Mandatory treatment should not be imposed for a longer period than the maximum sentence of the criminal violation, or 18 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.

Experience to date indicates that where treatment opportunities exist, the majority of addicts will voluntarily seek treatment. But treatment must be available and acceptable. The acceptability of treatment depends upon clinic location - the addict must be able to get to the clinic on a regular basis, and upon community acceptance - the addict will accept treatment more readily if people from his community have some control over the clinic and preferrably have staff positions.

The effectiveness of mandatory treatment remains controversial. McGlothlin recently concluded that criminal behavior and illicit drug use decrease while addicts are in court mandated treatment. Experience with committment to Lexington and Fort Worth for addicts was discouraging in

terms of maintenance of a drug free conventional life style.

If close cooperation between courts and treatment center is mandated by national policy - some political philosophers feel that there should be a complete separation between the health delivery and criminal justice system - the following comments are in order:

1. There should be clarity concerning roles and responsibilities. Judges, for example, should not make decisions concerning which treatment is appropriate only the decision that treatment is legal option. Clinical personnel only should decide which treatment is appropriate.
2. There should be no difference between the judicial decisions made with respect to drug dependent versus non-drug dependent persons in the criminal justice system. The fact of drug dependencies should not mean that a criminal drug abuser receives a more or less favored outcome than a criminal non-drug abuser
3. There should be clarity concerning the point in the judicial process at which decisions concerning referral for treatment are made.
4. The identification of drug abusers should be made by people from the treatment system not by the people from the criminal justice system.

Anyone contemplating a nationwide link between the criminal justice and drug treatment systems would do well to seek extensive consultation from experts who have had substantial experience with these programs in the United States. The Treatment Alternative to Street Crime (TASC) program in the United States has been functioning for many years. The District of Columbia Superior Court System in Washington D.C. has also pioneered programs in this interface.[39]

Sociotherapy

The term "sociotherapy" denotes many different approaches to the treatment of drug abuse. Their common element is that they put primary emphasis on social interaction. Chemotherapy, if accepted at all, is relegated to secondary status.

Therapeutic Communities

The "therapeutic community" technique of drug abuse rehabilitation (not to be confused with the milieu therapy of Maxwell Jones in psychiatric wards) was created by Mr. Charles Diederich. His basic concept was that a person who uses drugs is emotionally immature and as a consequence cannot function in "straight" society. The addict in Diederich's view needs complete social control. He structured the Synanon Program to provide this control.

"Treatment" in the typical therapeutic community lasts from 1 to 2 years, after which the person is expected to re-enter the community as a successfully functioning drug-free individual. During treatment, psychological growth, measured in phases or steps in the various programs, proceeds until a client has acquired the ability to function autonomously. In the original Synanon Program, Diederich felt that addicts never could return to the community but this view is not shared by many in the Therapeutic Community movement which is now worldwide.

Therapeutic communities or "T.C.'s" are based on the notion that an individual can report his feelings if he desires to do so. There is an emphasis on honesty and a directness of approach which is unquestionably therapeutic for many. Intake procedures are usually "high demand". During what is usually a stressful "intake interview" the candidate must vigorously committ himself to change. Such an intake structure screens out candidates of low motivation, for whom therapeutic communities are probably inappropriate.

Upon admission, social status is low. The new resident has no "privileges," i.e., there are restrictions on telephone calls, personal possessions and visitors. The new client is assigned to washing dishes or sweeping floors, and he must abstain from violations of house rules (e.g., no drugs, physical violence, or disobeying orders). He is expected to do his job, to be concerned about his fellow residents, and to participate in encounter groups.

A well functioning therapeutic community is like an authoritarian family. Indeed the word "family" is often used to describe a therapeutic community. Punishment for inappropriate behavior in the form of verbal "haircuts," assignment of demeaning tasks and other measures maintain social control.

Encounter groups, led by staff and/or advanced residents, are held frequently-typically a resident will participate in three groups each week. Such groups are useful in creating a sense of affiliation.

Re-entry into the community is usually divided into several steps. The patient progresses from living-in full time with some personal freedom, e.g., weekend passes, visitors, etc., to living outside the therapeutic community while attending occasional groups in the T.C.

The most serious problem in therapeutic community treatment is a high premature termination of treatment or "split" rate. Given the high demand characteristic of admission procedures, the dropout problem is compounded by the selectivity of these procedures. About 10-25% of those admitted complete all the phases of the program. The majority of

dropouts occur in the first few months of treatment, but "splitting" at a lower rate continues throughout. Most studies indicate that there is a positive linear relationship between length of stay and successful adaptation after returning to the community.

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 therapeutic community is the treatment of choice for the motivated drug abuser but may not be indicated for people who have trouble identifyind and reporting their feelings. A T.C. is not generally supportive with people who are unable to function well, although there are some striking exceptions in which psychotics with much previous ineffective traditional treatment have made major recoveries in therapeutic community programs.

Modified Therapeutic Communities

There have been successful efforts to modify therapeutic communities to permit subgroups of drug abusers such as young populations to benefit from the therapeutic community experience. In Illinois we demonstrated that abstinent and methadone supported patients could be successfully treated in the same therapeutic community. Such "mixed" treatment and the use of short stays in the T.C. for crisis resolution significantly improved the quality of clinical services. Most T.C.'s in the United States have elected not to try to serve populations other than drug abusers. Dr. Densen-Gerber has experimented successfully with the use of T.C.'s for special populations such as homless children, abused women, etc.[25]

Resources Required

The cost of treatment in this modaility is higher than that of methadone maintenance, being in the neighborhood of $5,000 per year resident. Staff can be wholly paraprofessional or wholly professional; usually in the United States the staff is predominantly paraprofessional. Most T.C.'s are set up in large former one family dwellings. The census is optimally from 25-90. Again community reaction to the presence of addicts can make problems.

Other Sociotherapies

Sociotherapeutic approaches also include religion-oriented drug rehabilitation programs, such as Teen Challenge, a fundamentalist Christian program, the Black Muslims, who base their work on the teachings of Elijah Mohammed, and several small sects using various Eastern philosophies. Many such organizations provide significant help to many drug abusers.[26,27] There are also programs such as "The Seed" which, while not based on religion, centers its efforts on the charisma of a single person. The success of these programs is based on the same process which enables therapeutic communities to be successful i.e., they provide a social structure, affiliation, and hope for their members.[28]

Several types of treatment have been designed specifically for young polydrug abusers. Hotlines, for example, are telephone services offering crisis intervention and referral for a variety of medical and psychological problems. These services, which appeared in large numbers in the late 1960's were originally set up to handle "bad trips." 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.

Hot lines are frequently based in "drop in centers." There are storefronts or other localities accessible to drug using populations and usually staffed by people acceptable to young drug users. Many young people are reluctant to seek formal treatment becasue they cannot consider themselves "sick", and hot lines and drop-in centers provide an acceptable alternative.

A typical drop-in center avoids all medical jargon. An attempt is made to provide recreation and friends, "rap groups" and individual conversations with staff. In any complete multi-modal treatment effort hot lines and drop-in centers are important additions.

Evaluation

Given the basic hypothesis of this paper to the effect that drug abuse is a social problem which changes every decade or so it follows that evaluation of the effectiveness of drug treatment effort is even more important than it would be if the problem were relatively stable. Evaluation should be an integral element in the monitoring process to insure a constant fit between treatment needs and treatment programs.

In the United States we have gained substantial experience with a number of evaluation methods. The National Institute on Drug Abuse (NIDA) created two large long term efforts in this regard. First was the Drug Abuse Reporting Project (DARP) started in the late 1960's at a time when the Federal government, through NIDA, was creating a large nation wide treatment system. DARP recorded patient progress on a bi-monthly basis. The DARP program also provided for follow-up studies after completing or dropping out of treatment. The work of Dr. Sells, the Director of the DARP project, has been mentioned above.[1]

A second generation effort was the Client Oriented Data Acquisition Process or CODAP.[29] The reason for this second effort was based on the difficulty in data management posed by the acquisition of bimonthly data on thousands of patients. CODAP was an attempt to streamline management. CODAP collected admission data and data at the dropping out or termination point in the treatment process.

CODAP is useful in monitoring patient flow and in achieving management objectives for a very large nation wide effort.

Both systems have problems with reliability and validity of the data obtained and of course patient progress or lack of it cannot be causally linked with the treatment effort because there is no control over many relevant variables. In large macroscopic efforts like DARP and CODAP all kinds of programs - technically sound and unsound - are lumped together. One knows that thousands of patients are enrolled in programs but one does not know the variance in patient utilization of program components as well as many other relationships of importance if one is to attribute an effect to the treatments offered.

In Illinois we gained experience with what we called the Monthly Outcome Measures or MOMS System. In this system each client is scored on four simple variables each month. This system is useful both clinically and administratively.

In addition to these macroscopic efforts there have been many focused, microscopic as it were, studies of single clinics. We have learned from both levels of analyses.

Given the time constraints it is not possible to do more than to acquaint you with the existence of these efforts. We can go into more detail during the discussion period. I would like to note that the Drug Abuse field has evaluated its efforts as thoroughly and effectively as any comparable service delivery system in the United States.

Constraints

There is a temptation to build treament systems rapidly. This temptation is created by the fact that governments usually "discover" that they have a drug problem and make great haste to do something about it. Two mistakes usually follow: treatment experts fail to inform policy makers in the government that treating drug abusers, while necessary and significant, is not going to do away with drug problems; treatment experts then join policy makers in building a large treatment system rapidly. Building a large treatment system rapidly is something of a contradiction in terms. The creation of an effective treatment system must be a long term matter and must be carried out with the understanding that clinical needs will change frequently.

After a decision is made to treat drug abusers on a national scale one of common questions encountered is whether to build a separate care delivery system for drug abusers or to add it on to existing health care delivery systems. For developing countries as well as industrialized countries my bias is to add the drug treatment effort to existing delivery systems. The one benefit derived from building a separate system is speed. Adding on capabilities to exisiting health care delivery systems is difficult because of biases against treating drug abusers on the part of both clinical and administrative personnel and because of the tendency of bureaucracies to divert funds for new projects into the repair and/or expansion of old projects.

With a separate system one does not have to struggle with these problems. But once built the separate system tends to be isolated and focused on yesterday's problem. Usually it is unable to provide minimally comprehensive care to its clients. Licensing and accreditation issues are not resolved during the rapid expansion and funding of the effort becomes problematic.

The proper aim, as noted above, of building a treatment system should be to create a flexible capacity to respond to the needs of a variety of drug abusers on a long term basis. The system should be built in phases with full training of all workers in the system before they are employed. In the U.S. we made substantial use of paraprofessionals or community workers as they prefer to be called. In our rush to build a treatment system, however, we employed them and gave them responsibilities for which they were not properly trained. In so doing we served neither the clients of the system nor the community workers. Their future at this point is in jeopardy. Third party payments may not recognize the value of their services - this is true in the alcoholism field as well although alcoholism counselors are attacking the problem of accreditation more vigorously than paraprofessional drug abuse counselors.

To return to the question of phases. Developing countries ought to build first a network of detoxification centers coupled with training of workers in whatever emergency services exist. These workers should be trained to recognize and to treat drug overdoses and crisis states associated with use of psychoactive chemicals. The core of this phase

should be medical. Detoxification, as noted above, may have long term advantages e.g., some users appear to derive benefit from several detoxification efforts while having short term disadvantages e.g., usual rapid resumption of drug use, if drug use is in fact stopped, and high rates of premature termination of treatment.

Detoxification centers can become training grounds for the next phase which is the creation of multi-modality treatment systems whose aim is, in accordance with the material presented above, more ambitious than those of detoxification centers. If properly constructed that is, with good integration into general health care delivery systems the problem of "falling through the cracks" a slang term to denote the problem of the schizophrenic drug abuser who is not treated by mental health centers because they do not treat drug abusers and who is not treated by drug abuse centers because they do not treat schizophrenics. When one adds up the number of drug abuse patients who have needs for comprehensive services versus need for sole treatment of drug problems than the balance swings heavily toward the comprehensive side.

The question of leadership of the drug abuse effort is an important one. On a national level medical leadership should be retained at all times although social programs to deal with employment and education needs of drug abusers can function quite well when there is only a medical component and non-medical administrative leadership, but the core of a good substance abuse treatment system is and should remain medical and professional.

The question of drugs versus alcohol will present itself. Alcohol is, of course, a drug and should be treated as an instance of drug abuse, or as some of us in the U.S., prefer to call it substance abuse.[30] Given the trends toward use of multiple drugs (including alcohol) and given the increasing recognition in the medical community that social and cultural definition of acceptable versus non-acceptable substances are not rational it is hard to justify the creation, in a developing country, of separate systems for "drugs" and alcohol.

The need for information is crucial to the creation of an effective treatment effort. There is a growing body of scientific information concerning drug abuse which should be available to treatment personnel - as well as policy makers. Provision for meeting this need should have a high priority.

Finally, I would like to cite the need for training of workers in the field as a major constraint. Training takes time and money and the quality of the training effort probably as much as any other factor determines the national value of any treatment system.

BIBLIOGRAPHY

1. Sells, S.B. and Simpson, D.D. "The Effectiveness of Drug Abuse Treatment," Vol. 1-5, Ballinger Publishing Co., Cambridge, Massachusetts, 1976.

2. Jaffe, J.H. "Multimodality Approaches to the Treatment and Prevention of Opiate Addiction," in S. Fisher and A.M. Freedman, ed., Opiate Addictions: Origins and Treatment, Washington, D.C.: V.H. Winston & Sons, 1973.

3. Senay, E.C., et al. "Withdrawal From Methadone Maintenance: Rate of Withdrawal and Expectation." A.M.A. Archives of General Psychiatry, March, 1977.

4. Senay, E.C., Shick, J.F.E. "Pupillary Response to Methadone Challenge: Aid to Diagnosis of Opioid Dependency," Drug and Alcohol Dependency 3, (1978).

5. Gay, G.R., E.C. Senay, J.A. Newmeyer, and D.E. Smith. "The Pseudojunkie: Evolution of the Heroin Lifestyle in the Non-Addicted Individual," Drug Forum 2, (1973).

6. "Testing and Screening For Drugs of Abuse," G.G. De Angelis, Marcel Dekker, New York, 1976.

7. "Methods For the Detection of Drugs of Abuse in Body Fluids An Overview;" NIDA Report Series 24 No. 1, July, 1974. National Institute on Drug Abuse, Rockville, Maryland 20857.

8. "Diagnosis And Evaluation of The Drug Abusing Patient for Treatment Staff Physicians," Medical Monograph Series, Vol. 1, No. 1., 1976. National Institute on Drug Abuse, Rockville, Maryland 20857.

9. "Emergency Treatment of The Drug Abusing Patient For Treatment Staff Physicians," National Drug Abuse Center Medical Monograph Series, Vol. 1, No. 4., October, 1977. National Institute on Drug Abuse, Rockville, Maryland 20857.

10. "Pharmacological and Toxicological Perspectives of Commonly Abused Drugs," Medical Monograph Series, Vol. 1., No. 5., 1978. National Institute on Drug Abuse, Rockville, Maryland 20857.

11. Taylor, R.L., Maurer, J.I., and Tinklenberg, J.R. "Management of 'Bad Trips' in an Evolving Drug Scene," Journal of the American Medical Association, 213 (1970).

12. Shick, J.F.E., and D.E. Smith. "An Analysis of the LSD Flashback," Journal of Psychedelic Drugs, 3 (1970).

13. Tennant, F.S., Jr. "Drug Abuse in the U.S. Arny, Europe," Journal of the American Medical Association 221 (1972).

14. Smith, D.E., and D.R. Wesson. "Phenobarbital Techniques in Treatment of Barbiturate Dependence," Archives of General Psychiatry, 24 (1971).

15. Berle, B.B., M. Ganem, and J. Lowinson. "Detoxification of Multiple-Drug Abusers with Sodium Amytal," New York State Journal of Medicine, 72 (1972).

16. Goldstein, A. "Heroin Addiction and the Role of Methadone in its Treatment," Archives of General Psychiatry, 26 (1972).

17. Freedman, D.X. and E.C. Senay. "Methadone Treatment of Heroin Addiction," Annual Reviews of Medicine, Palo Alto: Annual Reviews, Inc. 1973.

18. Glasscote, R.M., J.N. Sussex, J.H. Jaffe, J. Ball, and L. Brill. "The Treatment of Drug Abuse: Programs, Problems, Prospects," Washington, D.C.: Joint Information Service of the APA and the NIMH, 1972.

19. Senay, E.C., and P.F. Renault. "Treatment Methods for Heroin Addicts: A Review," Journal of Psychedelic Drugs, 3 (1971).

20. "Standards for Drug Abuse Treatment and Rehabilitation:" Joint Commission For the Accreditation of Hospitals, Chicago, Illinois (1975).

21. Treatment Three Times A Week LAAM: "Alternative To Methadone," Blaine, J.D., Renault, P.F., NIDA Research Monograph, No. 8, National Institute

22. "Narcotic Antagonists: Naltrexone," National Institute on Drug Abuse Research Monograph, National Institute on Drug Abuse, Rockville, Maryland 20857.

23. Bonnie, R.J. and M.R. Sonnereich. "Proposed Uniform Drug Dependence Treatment and Rehabilitation Act and Commentary," Drug Use in America: Problems in Perspective, Appendix IV: Treatment and Rehabilitation, Washington, D.C.: U.S. Government Printing Office, 1973.

24. McGlothlin, W. "Personal Communication."

25. Densen-Gerber, J. "We Mainline Dreams: The Odyssey House Story," Doubleday, 1973.

26. McDonnel, K. "The Pentecostals and Drug Addiction." America 118, (1968)

27. Muhammed, E. "Message to the Black Man in America." Chicago: Muhammed's Mosque of Islam #2, 1965.

28. Miller, J. "The Seed: Reforming Drug Abusers with Love," Science 182 (1973)

29. "History, Methodology and Use of the CLIENT ORIENTED DATA ACQUISITION PROCESS," (CODAP, 1977), Series A, No. 1., National Institute on Drug Abuse, Rockville, Maryland 20857.

30. "Proceedings of the 6th Annual Eagleville Conference," DHEW Publication, No. (ADM) 74-96, 1974.

31. Schulte, N., and J.V. DeLong. "Heroin Maintenance: The Issues," Washington, D.C.: The Drug Abuse Council, Inc., 1973.

32. "Drug Abuse in India: Report of The Committee of Government of India," Kapoor Art Press, New Dehli, 1977.

33. "Addictive Diseases," Vol. 3, No. 1., 1977.

34. Kahn, I. "Drug Abuse in Pakistan: Bull on Narcotics," Vol. XXIX, No. 4., 1977.

35. Evans, L.E.J., C.P. Swanson, P. Roscoe, and L.F. Prescott. "Treatment of Drug Overdose with Naloxone, a Specific Narcotic Antagonist," The Lancet, March 3, 1973.

36. Elinwood, E.H. "Emergency Treatment of Acute Reaction to CNS Stimulants," Journal of Psychedelic Drugs, 5 (1972).

37. Dole, V.P. "Methadone Maintenance Treatment for 25,000 Addicts," JAMA 205: 15 (Feb), 1977.

38. Wynstra, N. "Legal Basis For Addict Diversion: Relationships between the Treatment System and the Criminal Justice System," in Developments in the Field of Drug Abuse, Senay, E.C. and Shorty, V., eds., Schenckman, Cambridge, MA 1975.