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WHO EXPERT COMMITTEE ON DRUG DEPENDENCE

Eighteenth Report

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WHO EXPERT COMMITTEE ON DRUG DEPENDENCE

Geneva, 25-31 August 1970

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WHO EXPERT COMMITTEE ON DRUG DEPENDENCE

Eighteenth Report

1. INTRODUCTION

The WHO Expert Committee on Drug Dependence met in Geneva from 25 to 31 August 1970.

Dr L. Bernard, Assistant Director-General, opened the meeting on behalf of the Director-General and welcomed the members of the Committee and the representatives of the Secretary-General of the United Nations, the International Narcotics Control Board, and the International Council on Alcohol and Addictions. He noted that governments and international organizations have given considerable attention to the identification of dependence-producing drugs and to the control of their production and distribution. However, despite such controls, continuing substantial demand by " experimenters ", casual users, and drug-dependent persons has supported the illicit market. Until the demand for dependence-producing drugs is markedly reduced, it cannot be reasonably expected that measures to control their availability will have the desired result. A reduction in demand can be achieved only by preventive measures designed to limit interest in drugs on the part of potential users and through effective treatment and rehabilitation of drug-dependent persons. The urgent need for improved programmes in these fields has been stressed by the Twenty-third World Health Assembly.[1] It was therefore very fitting that the Committee should be invited to assess current approaches to treatment, rehabilitation, and prevention, and to make recommendations relative to improved and new approaches in these areas.

2. WORK OF INTERNATIONAL BODIES CONCERNED WITH DRUG DEPENDENCE

2.1 World Health Organization

The Committee, having been informed of the resolution adopted by the Twenty-third World Health Assembly[1] recommending, among other

[1] *Off. Rec. Wld Hlth Org.*, 1970, **184**, 22 (Resolution WHA23.42).

things, " the development of improved preventive, treatment and rehabilitation programmes and the pursuit of needed knowledge in the field of drug dependence " and requesting that the Director-General " develop means for the international collection and exchange of data on the prevalence and incidence of drug dependence, and on the human and environmental factors associated therewith ", was pleased to learn that an Interregional Training Course for National Programmes on Problems of Alcohol and Drug Dependence is to be held in 1971. The Outline for National Inquiry, already developed for use in connexion with that Course, will be a valuable tool in assisting countries to develop improved preventive, treatment and rehabilitation programmes.

2.2 United Nations

The Committee noted with gratification that the United Nations Economic and Social Council, acting on recommendations [1] of its Commission on Narcotic Drugs, has (*a*) authorized the convening of a plenipotentiary conference early in 1971 for the adoption of a Protocol on psychotropic substances and (*b*) recommended that governments give special consideration to the early adoption of additional measures for the national as well as the international control of psychotropic substances, and the prevention of their abuse.[2]

Recalling previous observations and recommendations of WHO Expert Committees,[3] of the World Health Assembly [4] and of other international organizations [5] concerning the abuse and control of certain dependence-producing drugs not under appropriate national and international controls, the Committee expressed the hope that effective international controls will be adopted and become operative as soon as possible.

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[1] United Nations Commission on Narcotic Drugs (1970) Document E/4785 (*Economic and Social Council : Official Records*, pp. 38-39, resolutions B and C).

[2] United Nations, Economic and Social Council (1970) *Official Records, Forty-Eighth Session, Resolutions, Supplement No. 1*, Document E/4832, pp. 7-8 (Resolutions 1474 and 1475).

[3] *Wld Hlth Org. techn. Rep. Ser.*, 1952, No. 57, p. 11 (section 8) ; 1954, No. 76, p. 11 (section 8) ; 1957, No. 116, p. 10 (section 10) ; 1964, No. 273, p. 11 (section 7) ; 1965, No. 312, p. 9 (section 7) ; 1966, No. 343, p. 11 (section 8) ; 1969, No. 407, p. 17 (section 3) ; 1970, No. 437, pp. 10 and 22 (sections 4 and 5.2).

[4] *Off. Rec. Wld Hlth Org.*, 1965, **143**, 31 (Resolution WHA18.47) ; 1967, **160**, 26 (Resolutions WHA20.42 and WHA20.43) ; 1968, **168**, 20 (Resolution WHA21.42) ; 1970, **184**, 22 (Resolution WHA23.42).

[5] United Nations, Commission on Narcotic Drugs (1956) Document 2891, p. 38 (para. 328) ; (1957) Document E/3010/Rev. 1, p. 40 (para. 388) ; (1962) Document E/3648, p. 31 (para. 205) ; (1966) Document E/4294, p. 38 (para. 305) ; (1968) Document E/4455, p. 34 (para. 325) ; p. 36 (para. 355) ; (1969) Document E/4606/Rev. 1, p. 62 (chapter VI) ; p. 95 (resolution D) ; (1970) Document E/4785, pp. 38-39 (resolutions B and C) (*Economic and Social Council : Official Records*).

The Committee reviewed in broad outline the provisions of Articles 1–19 of the Revised Draft Protocol on Psychotropic Substances contained in the report of the first special session of the Commission on Narcotic Drugs.[1] The Committee reiterated the suggestions contained in the seventeenth report of the WHO Expert Committee on Drug Dependence [2] that (*a*) " consideration be given to the addition of a qualifying term, such as ' dependence-producing ', when speaking of psychotropic substances to be controlled under the Draft Protocol " and (*b*) that Article 6, paragraph 3 be worded " in such a way as to make it quite clear that the approval of research projects would be concerned only with their objectives, the safety of persons involved and protection against diversion of dependence-producing substances and that it in no way would have reference to the details of the research protocol ". The reasons for these suggestions, as given in the seventeenth report, remain valid. The Committee noted that, unlike the Single Convention on Narcotic Drugs 1961, Article 2, paragraphs 4 and 5 of the Revised Draft Protocol on Psychotropic Substances will enable the Commission to adopt levels of control that have not been recommended by WHO. The Committee expressed the view that (*a*) the degree of risk to public health presented by a dependence-producing drug and (*b*) its usefulness in medical practice are primarily matters of medical assessment and judgement and that this is also true of decisions on the need for and level of control. The Committee was pleased to note the inclusion of alternative arrangements for treatment and rehabilitation in paragraph 1 of Article 18 on " Penal Provisions ". This was considered to be an advance on the comparable provision to be found in Article 36, paragraph 1 of the Single Convention.

2.3 International Narcotics Control Board

The Committee learned with satisfaction that the International Narcotics Control Board, beyond its statutory obligations relative to the international control of certain drugs, continues to manifest a keen interest in the prevention of the deviant use of drugs and in the treatment and rehabilitation of drug-dependent persons.

2.4 Economic Commission for Europe

The Committee was advised of the continuing activities of the Working Party on Road Traffic Safety of the Economic Commission for Europe on " fitness of drivers " and noted with approval a recommended provision

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[1] United Nations, Commission on Narcotic Drugs (1970) Document E/4785 (*Economic and Social Council : Official Records*).

[2] *Wld Hlth Org. techn. Rep. Ser.*, 1970, No. 437, p. 9 (section 3).

that would enable *former* alcoholics, who had lost their driving privileges, to obtain a renewed driving permit when the request was supported by competent medical opinion. This is an important recognition of the successful rehabilitation of many alcoholics.

2.5 Council of Europe

The Committee was interested to learn that four committees of the Council of Europe are now actively engaged in studying various aspects of the problems associated with the deviant use of dependence-producing drugs. These activities are directed to the development of means for (*a*) acquiring much needed additional knowledge about patterns of drug-use, (*b*) improving preventive, treatment and rehabilitation services, and (*c*) for developing reasonably co-ordinated social and other policies relative to drug dependence within a major region of the world.

2.6 International Council on Alcohol and Addictions

The Committee learned that the principle of the combined approach to problems of dependence on alcohol and other drugs recommended in the fourteenth report of the WHO Expert Committee on Mental Health [1] has been accepted, or is under consideration, by a majority of voluntary national bodies concerned with alcoholism. However, comparatively few bodies dealing with problems associated with drug dependence of other types have concerned themselves with alcohol-related problems. The International Council on Alcohol and Addictions, in co-operation with its affiliates, has organized three international conferences this year, to foster understanding of the combined approach and to facilitate communication and co-ordination among the professional and other groups concerned.

2.7 Need for co-ordinated regional as well as global approach

The Committee re-affirmed the view expressed in the seventeenth report [2] of the WHO Expert Committee on Drug Dependence that the " trend toward ever closer co-operation " between the three international organs traditionally concerned with problems of drug dependence " be fostered in every way possible ". It nevertheless noted with gratification the increasingly important roles being played by international bodies of regional scope and stressed the need for continuing close liaison and co-ordination with them.

The Committee recognized the desirability of implementing a common policy at national and international levels with regard to controlling the

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1967, No. 363, p. 8 (section 1.1).

[2] *Wld Hlth Org. techn. Rep. Ser.*, 1970, No. 437, p. 8 (section 2.8).

production, manufacture, and distribution of certain dependence-producing drugs. However, it stressed that in establishing policies designed both to minimize the chances of potential users becoming interested in drugs and to foster the development of effective treatment, including rehabilitation programmes, it is neither feasible nor appropriate to aim at such a common or uniform global approach. In establishing policies designed to improve the effectiveness of programmes in these latter fields, it is important that, among other things, full account be taken of the socio-economic factors and cultural mores that influence local drug-taking behaviour. Such influences differ greatly in various regions of the world. However, when countries in a given region share quite similar socio-economic situations and cultural patterns and values, it is important that they exchange information and endeavour to co-ordinate their policies relative to prevention and treatment, so that these have as much in common as possible. Such an approach will also help to avoid unnecessary duplication of effort.

3. PRINCIPLES OF MANAGEMENT OF DRUG DEPENDENCE PROBLEMS

3.1 General considerations

Drug dependence has been defined as " A state, psychic and sometimes also physical, resulting from the interaction between a living organism and a drug, characterized by behavioural and other responses that always include a compulsion to take the drug on a continuous or periodic basis in order to experience its psychic effects, and sometimes to avoid the discomfort of its absence. Tolerance may or may not be present. A person may be dependent on more than one drug." [1]

The WHO Constitution defines health as " a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity ". Persons dependent on drugs of the type specified below [2] can not be considered as possessing such a state of health and will require health and social services if they are to have a reasonable opportunity to achieve an improved status.

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1969, No. 407, p. 6 (section 1.1).

[2] The principal types of dependence-producing drugs are: morphine type (e.g., opium, morphine, heroin and other morphine derivatives; synthetic substances with morphine-like effects, such as pethidine, methadone, dextromoramide); barbiturate type (e.g., pentobarbital, secobarbital, meprobamate, chlordiazepoxide, glutethimide); alcohol type (there is substantial cross tolerance with the barbiturate type); cocaine type; cannabis (marihuana) type; amphetamine type (e.g., amphetamine, methamphetamine, phenmetrazine, methylphenidate); khat type; hallucinogen type (e.g., lysergide, psilocybin, mescaline); *Wld Hlth Org. techn. Rep. Ser.*, 1964, No. 273, p. 13 (Annex 1): Eddy, N., Halbach, H., Isbell, H. & Seevers, M., Drug dependence: its Significance and Characteristics, *Bull. Wld Hlth Org.*, 1965, **32**, 721.

The problems of drug dependence present numerous interacting facets involving the taking of different types of dependence-producing substances in a wide variety of ways and patterns by persons with varied personal and sociocultural backgrounds throughout the world. The problems in different localities have some common characteristics, but in no two countries are they identical; it is unlikely that the set of problems in any one locality remains constant.

In the past, the predominant pattern of abuse has been the consumption by the individual of a single drug—opium or morphine or heroin in some areas; cannabis or alcohol in others; and less frequently other drugs. In some very large areas, opium is still the drug of choice, but there is an increasing trend for it to be supplanted by heroin. However, in most places the pattern has become one of multiple drug use, either simultaneously or successively. As a consequence, drug dependence of a specific type is less readily identified. Even if dependence of one type predominates, the use of other drugs may present therapeutic problems and, of course, the person may be dependent on more than one drug.

The problems associated with drug dependence evoke a wide variety of responses at national and other levels. These responses often appear to be the result of quite contradictory objectives. In many countries, the situation with respect to alcohol is illustrative. Taxes from its sale help finance the State and a significant proportion of the population may earn their living by the production of alcoholic beverages. Taxation may be used to produce revenue, or to discourage sales, or both, but because diminished sales result in a loss of revenue there may be reluctance to impose very heavy taxation. The avoidance of politically unpopular actions may also influence decisions on this matter. Commercial advertising may extol the attractions of alcohol while health posters may warn of its dangers. A given behaviour resulting from dependence on alcohol may at one time or place result in an alcoholic being sent to prison, at another to the hospital, depending on whether the behaviour is seen as sick or bad.

The constellation of responses at national and other levels constitutes an inter-reacting dynamic system. Changes in one type of response will have an influence on others; new conditions will also affect the entire system. The various responses can be seen as primarily, though not exclusively, oriented toward one or another of the following areas: treatment, including rehabilitation; prevention, including both the control of interest in drugs as well as their production and distribution; and profit—official and private, licit and illicit.

Because a nation's or locality's responses in this field constitute a dynamic system subject to rapid change, it is important that provision be made for continuing review of the system.

This inevitably poses certain questions:

1. With whom does the responsibility for such continuous review lie ?

2. What are the explicit or implicit goals (undoubtedly multiple) of the responses ?

3. Whose responsibility is it to determine the responses ?

4. How much of the current response is merely traditional—what should be added and what subtracted ?

5. Are data available upon which to make assessments of the efficacy of the response ?

The responses of society to problems of drug dependence cannot be regarded solely in terms of technological capacities and economic resources. A society's general value systems and aspirations as well as its particular beliefs and feelings—whether founded or unfounded—about the self-administration of dependence-producing drugs are potent determinants of its responses to situations involving such substances.

The capacity of a nation to mount a rational, integrated, and effective system of responses to its problems of dependence on alcohol and other drugs must, therefore, depend heavily on the environment of ideas as well as on technological and economic resources. The correctness and appropriateness of these ideas are consequently questions of fundamental importance. It is therefore necessary to examine the principal current hypotheses and assumptions relative to the causes of drug dependence, the goals of treatment, including rehabilitation, the major methods of treatment, the major goals and methods of prevention, and the relative effectiveness of different methods in achieving the stated goals.

The following presentation outlines the main issues and trends and is in no sense to be construed as a detailed consideration of all possible approaches to treatment, including rehabilitation.

3.1.1 *Etiological factors in drug dependence*

Many factors have been proposed as playing a part in the initiation, perpetuation, and discontinuation of drug-using behaviour. No single "cause" has been demonstrated. A knowledge of the pharmacological interaction between the drug and the organism and of the interaction between the organism and the environment is essential to an understanding of the nature of drug dependence. Given that pharmacological, human, and environmental factors are present, some of the many hypotheses to explain the causation of drug dependence of designated types [1] include the following :

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1964, No. 273, p. 13 (Annex 1) ; Eddy, N., Halbach, H., Isbell, H. & Seevers, M., Drug dependence : its significance and characteristics, *Bull. Wld Hlth Org.*, 1965, **32**, 721.

(1) that such drug dependence may be a manifestation of an underlying character disorder in which immediate gratification is sought in spite of the possibility of long-term adverse consequences and at the price of immediate surrender of adult responsibilities ;

(2) that it may be a manifestation of delinquent-deviant behaviour in which there is pursuit of personal pleasure in disregard of social convention, so that to some this is primarily a moral problem ;

(3) that it may be an attempt at self-treatment by persons suffering from (*a*) psychic distress either of the normal variety seen, for instance, in adolescence or as a reaction to social and/or economic stress, frustration or blocked opportunity ; or the more persistent problem of depressive illness, chronic anxiety, or other psychiatric disorders ; (*b*) physical distress —hunger, chronic fatigue, or disease ; (*c*) a belief that the drug has special powers to prevent disease or to increase sexual capacity ;

(4) that it may provide a means of achieving social acceptance in a social subculture, particularly for the socially inadequate ;

(5) that it may be a manifestation of a permanent or reversible metabolic lesion brought about by the repeated use of high doses of drugs ;

(6) that it may be part of a rebellion against conventional social values relating to pleasure, tradition, success, and status ;

(7) that even in the absence of pre-existing psychopathology, it may result from the acquisition of a complex set of instrumental and classically conditioned responses and may therefore be a form of learned behaviour ;

(8) that even in the absence of underlying psychopathology, it may result from sociocultural pressures leading to heavy use of a drug, for example, alcohol ;

(9) that any or all of these factors may play a role in the causation of drug dependence in a given individual.

The onset of drug dependence in individual cases may be associated with a disturbing life event or precipitating factor. Because this precipitant is merely the final stress added to many other etiological factors, it does not require paramount consideration. However, insofar as it realizes the destructive potential of the individual " at risk " because of serious background psychopathology, the precipitant has practical implications for management, treatment, and prevention. The types of precipitant may be classified as : (*a*) rejection by, or separation from, a person upon whom the individual was emotionally dependent ; (*b*) transition to a more demanding adult role, such as those involving occupational responsibilities, sexual relationships, marriage, and parenthood ; and (*c*) serious adverse circum-

stances or physical illness. Such stressful life events also serve as precipitants in the case of various psychiatric and psychosomatic disorders; clearly they could not result in drug dependence if the person did not have access to the drug at the time of the event. Such precipitants may well be denied by the patient who may blame those who introduced him to the drugs, including his physician. Many of the approaches that appear to have had some success in the management of drug-dependent persons may be interpreted as being directed at the precipitants by providing a supportive person or group and by assisting or even avoiding the transition to a more demanding adult role.

3.1.2 *Goals of prevention and treatment*

In relation to drug dependence, the major goals of both prevention and treatment, including rehabilitation, are, for the most part, the same and largely overlap. However, such goals are often stated in rather different terms, for example :

	Goal	*Possible way of stating*
1	Preventive :	to prevent the availability of illicit dependence-producing drugs, including their diversion from licit to illicit channels
	Therapeutic :	to avoid over-prescribing (this is a more limited but yet desirable goal, apart from any bearing it has on the question of diversion)
2	Preventive :	to reduce interest in and demand for dependence-producing drugs
	Therapeutic :	to achieve total abstinence ; to reduce the amount or frequency of drug-taking, even though any continued use of the drug in question is not socially acceptable ; to reduce drug-taking to socially acceptable levels
3	Preventive :	to minimize human discomfort, antisocial activity and economic loss stemming from or related to drug-taking behaviour
	Therapeutic :	to eliminate completely such psychopathology or other medical disorder as may contribute to drug-taking behaviour—e.g., to achieve full recovery from disease ; to halt or retard the progress of a possible causal disease ; to assist a patient to function as effectively and comfortably as possible despite any residual handicaps ; to prevent medical complications ; to provide comfort when nothing more is possible, as in the case of intractable pain

	Goal	*Possible way of stating*
4	Preventive :	to minimize the possibility that a person may begin taking certain dependence-producing drugs while uninformed about their broad effects and possible complications
	Therapeutic :	to prescribe dependence-producing drugs only in such a manner as to minimize the possibility of inducing dependence.

The Committee considered that it was advisable for those who plan and operate therapeutic and preventive activities to state explicitly the immediate, intermediate, and long-term goals and the etiological assumptions on which each major facet of their programmes is based. It was also considered essential that intermediate and especially immediate goals and approaches should be within the technical and economic capabilities of those responsible for the programmes. To do otherwise is to court disappointment and frustration, and to risk loss of confidence in and retardation of the programme.

3.1.3 *Evaluation*

The desirability of arranging for long-term, objective, and systematic evaluation of programmes for the prevention and treatment of drug dependence is generally accepted. The methods include epidemiological techniques, laboratory methods, and clinical procedures. In the past, such evaluation has not been performed on an adequate scale, in part because of the urgency with which programmes have been instituted and in part because of the difficulties inherent in an evaluation that must deal with a wide variety of social and psychic variables and the practical problems of maintaining long-term contact with drug-dependent persons.

The lack of adequate measurement of therapeutic outcome has seriously hampered advances in this field, where the results of a wide range of procedures still require adequate comparison, both with each other and with the natural history of the various forms of drugs dependence. An equally important task is the determination of the specific indications and contraindications for each procedure.

Adequate evaluation requires an explicit identification of goals, a classification of cases that will permit the establishment of valid comparison groups, and the use of standardized methods of data collection. Evaluation of therapeutic outcome will require the collection of data on the psychic state, on the frequency of criminal activity and recourse to drugs, and on other factors relating to social and economic adjustment.

Such evaluation cannot be as precise as many laboratory procedures since *full* control of the social and psychic variables that may influence the

overall outcome may be impossible. Nevertheless, such work as has been done indicates that valuable data can be secured in spite of these limitations. It is possible that future evaluation studies may resolve some of the controversies about the management of drug dependence. Data of this type are particularly required to guide the further development of services.

The Committee therefore strongly recommends that support be given to the setting up of evaluation procedures wherever possible.

3.2 Approaches to treatment

3.2.1 *General*

Means for the treatment and rehabilitation of patients with psychiatric illness have developed apace over the last several decades. Current treatment concepts that are applicable in all countries, whatever the degree of development of specialist services, include not only those relating to the care of patients with specific mental disorders, such as depression, neurosis or schizophrenia, but also those having to do with the frequent need to modify the patient's environment. In many cases, activities designed to influence the family of the patient, his home and social situation, and/or his occupational or educational skills, are required. As a consequence of this approach, certain facilities, such as hostels and half-way houses, have been utilized in some countries and the disciplines of psychiatry, general medicine, psychology, social work, education, industrial rehabilitation, vocational guidance, sociology and others have been brought together in a holistic concept of treatment.

Institutional care has developed in terms not only of individual therapy, for example the use of psychotropic drugs and individual psychotherapy, but also of group therapy and therapeutic communities. In the case of hospital treatment, the therapeutic community may be the ward unit or the whole hospital.

Interactions between patients and staff are part of a treatment modality in which there may be direct patient participation, not only in the practical running of the community, but also in decision-making.

These general developments are relevant to the treatment of drug-dependent persons, but are not specific to them. The Committee stressed that these techniques were often required in the general treatment and care of the drug-dependent person, whether on an ambulatory basis or in residential settings.

More recently, both in the field of general psychiatry and particularly in the field of drug dependence, it has been realized that it is often difficult or even impossible to separate concepts of treatment from concepts of rehabilitation and thus the word treatment, as used in this report, includes rehabilitation. This is not to say that all rehabilitation procedures are

necessarily to be carried out by health personnel. Many other disciplines and agencies must be involved.

General treatment goals are discussed in an earlier section of this report (section 3.1.2), and in that dealing with special methods of treatment of the drug-dependent individual (section 3.3). The definition of goals is necessary for a sound evaluation of the efficacy of treatment. The ideal goal, with total abstinence, independence, gainful employment, satisfactory social and personal adjustment, and emotional stability, is seldom achieved, though much effort and money has been expended in many countries in the quest for this ideal goal. Recently, intermediate goals have been formulated which do not insist on abstinence, but aim for improvement in the areas of economic stability and employment, social adjustment, and decreased criminality.

The treatment strategy that is followed in any given case of dependence is related to four distinct sets of factors:

(1) comprehensive evaluation of the individual;

(2) the theories or hypotheses about the nature of the disorder held by the treating agency;

(3) the short- and long-term goals established by the treating agency;

(4) the range of treatment options available to those making the decisions about treatment.

In view of the multiple causality of drug dependence, it is clear that the four factors mentioned above will be closely interdependent and that treatment, whether ambulatory or residential, will involve a wide range of governmental and other services, including health, education, law enforcement, social welfare, and vocational training, and that all these services have responsibilities for the provision of resources for the treatment of the drug-dependent patient.

3.2.2 *Assessment of needs (diagnosis)*

The term " diagnosis " is used here in the broad sense of a summary statement describing an individual's state at the time of examination and the various internal and external factors, past and present, that have led to this situation. Such a diagnostic appraisal is essential if adequate and relevant treatment is to be instituted.

It is important to determine which specific drugs the individual is using, in what amounts, over what period, and in which patterns. Since, in some circumstances, the patient may be unable or unwilling to provide such information, an account obtained from family, friends, and various agencies is also desirable. In some cases diagnosis may be facilitated by chemical analyses of breath, blood, or urine.

In no cases, however, does the presence or absence of a drug revealed by laboratory techniques alone indicate the presence of a degree of dependence requiring a medical response. The determination of the presence of dependence on drugs of all types and the estimation of its severity remain clinical procedures based on history, physical examination, and observation.

Attention must be given to the possible presence of complications and disease entities (such as malnutrition, infections, cirrhosis, injuries, etc.) commonly associated with various forms of drug dependence and described elsewhere in this report.

Persons with previously stable personalities occasionally become drug-dependent, for example, as a result of social situations or in response to stresses acting at vulnerable periods in their lives when drugs are made readily available. However, in most countries, it is common to find that drug-dependent individuals exhibit a wide range of psychopathology that antedates drug-use. The assessment of such psychopathology is an important part of the overall diagnostic effort. Failure to attend to such syndromes usually limits the possibility of successful treatment of the drug-dependent state.

A complete evaluation should also include an assessment of the role of the environment in the initiation and perpetuation of the drug dependence and the possibility of utilizing the family and secondary social institutions in the treatment process. The degree to which drugs are available outside licit channels has a bearing on choice of treatment methods. Thus, a wide range of skills is required to determine the treatment needs of any individual.

3.2.3 *Medical complications*

The deviant use of drugs, including drug dependence, creates not only individual and social problems, but very often major medical complications that are quite distinct from the problems of dependence *per se*. The summary presented here is not intended to be exhaustive but merely illustrative of the range of problems with which treatment agencies may be obliged to concern themselves. It is not intended to discuss the techniques of treatment, which are well described in the professional literature.

1. *Acute intoxications and related complications*

Under conditions of self-administration, especially where intravenous use is involved, acute intoxications and serious overdose are common. In drug-dependent persons acute overdose with narcotics or with drugs of the alcohol-barbiturate type may be characterized by coma and marked respiratory depression. Respiratory depression caused by narcotics is often effectively reversed by the use of narcotic antagonists alone, but not uncommonly it is necessary to use the more conventional resuscitative techniques that are

often required for use in connexion with overdoses of drugs in the barbiturate-alcohol group. Lesser degrees of intoxication with drugs of the barbiturate-alcohol type may cause a loss of behavioural control and facilities for preventing self-injury or injury to others during the period of intoxication (sobering-up stations) may be required. Appropriate treatment, therefore, may range from emergency neurosurgical procedures and the specialized handling of extensive burns, to the management of stasis or aspiration pneumonia accompanying coma.

Stimulants such as cocaine, amphetamine, and related substances may produce states of anxiety, hyperactivity, and occasionally hyperpyrexia. More commonly the complications seen are due to repeated use of such drugs over a period of days or weeks and consist of varying degrees of psychotoxicity ranging from mild paranoid reactions to full-blown toxic psychoses with paranoid delusions, hallucinations, and lack of insight. This syndrome is similar to paranoid schizophrenia and requires comparable treatment facilities.

Acute overdose of drugs of the cannabis-type may also produce a syndrome characterized by feeling of panic, paranoid ideas, delusions, and occasionally hallucinations.

Reactions to drugs of the LSD-mescaline-psilocybin type range from acute episodes of anxiety, confusion, panic, paranoia, and megalomania immediately following drug ingestion, to psychotic episodes or depressive syndromes that persist for weeks after the ingestion of the drug. Such acute reactions sometimes recur without further drug-taking. Adverse effects may be seen with very small doses. These various reactions require the same facilities that are used to manage other psychiatric emergencies.

2. *Other complications*

Included here are complications such as malnutrition due to (*a*) drug-induced anorexia (as seen sometimes in amphetamine users), (*b*) replacement by the drug of normal calorie intake (as in certain forms of alcoholism), and (*c*) the use of available funds to purchase drugs rather than food.

Included also are cirrhosis, neurological disorders, myopathy and myocardiopathy, and those complications that arise as a result of self-destructive or antisocial behaviour that occurs during the period of drug effect. Examples of the latter include automobile accidents or injuries sustained when engaged in aggressive or confused behaviour under the influence of amphetamines, alcohol, and other drugs of dependence.

Irrespective of the pharmacological nature of a substance, drug-users who fail to observe hygienic principles for hypodermic self-administration are likely to exhibit bacterial infections, both locally, at the sites of injection, and systemically (e.g., septicaemia, endocarditis and lung abscesses).

Because of the widespread practice of sharing syringes and needles, viral hepatitis is common and occasionally needle-transmitted malaria is observed.

Parenteral use of substances intended solely for oral administration may cause yet other problems. Repeated parenteral administration of substances intended solely for oral administration may cause complications due to tissue reactions, i.e., reactions to the presence of the irritating substances contained in the oral preparation. Thus, sterile abscesses, sclerosis of veins, gangrene of the extremities, and inflammatory reactions of the lungs, kidneys, and other capillary beds occur.

The variety of these complications highlights the need for comprehensive services to deal with a wide range of mental and physical reactions and the need to consider their treatment within the total context of the long-term treatment of the drug-dependent individual. It also emphasizes the need for co-operation and co-ordination between the various special agencies concerned with treatment, as well as adequate liaison between general medical, surgical, and psychiatric facilities.

3.3 Special considerations

3.3.1 *Withdrawal*

In the past, early withdrawal of heroin and other drugs of the morphine type was considered vital in order to obtain the best chance of cure, although it was recognized that the presence of complicating illness, such as infections, hepatitis and malnutrition, required that withdrawal be undertaken slowly. Unfortunately, some even regarded withdrawal as the whole treatment, a view that has also been held in relation to dependence on alcohol, barbiturates, and other drugs. More recently, the concept of early withdrawal, particularly of drugs of the morphine type, has been challenged and it has been proposed instead that withdrawal should be undertaken only after attention has been given to other factors, such as the individual's social and occupational circumstances and his motivation. The Committee considered that, where this course is followed, steps should be taken to stabilize and, if indicated, gradually reduce the dosage taken by the patient.

The Committee expressed the conviction that withdrawal is only one aspect of the total treatment programme and that it might be delayed in clinically justifiable circumstances.

The sudden withdrawal of drugs producing dependence of the barbiturate and alcohol types may be followed by serious effects, such as psychosis, status epilepticus, and cardiovascular failure. Because these complications may be fatal, withdrawal of these drugs must be undertaken with caution and with regard to the availability of emergency medical services. In general, however, there is no reason to delay withdrawal of

these drugs, especially where heavy usage has resulted in complete incapacity to function.

The withdrawal of stimulants is achieved with few and unimportant physical symptoms. Psychological symptoms include depression, which can be serious enough to result in suicide. A particular form of depression is manifested by apathetic, anergic behaviour and requires treatment. Similar syndromes may be seen after withdrawal of other drugs.

Hospitalization for the withdrawal of drugs of dependence of many types is therefore advisable.

The Committee wished to emphasize that the drug-dependent person does not return to normal immediately after the drug has been withdrawn. Rather, at this stage, further long-term treatment (often intensive) and counselling should be undertaken.

3.3.2 *Maintenance*

As earlier noted (section 3.1.2), medicine has traditionally endeavoured to establish various treatment goals, ranging from full recovery to minimization of the progress of the disorder, alleviation of symptoms, prevention of complications, and the provision of comfort for the afflicted when nothing more is possible. There is thus nothing new in the concept of providing medical aid for an ill person when a fully effective treatment is not available.

The syndrome of drug dependence of morphine, barbiturate, and other types exhibits some of the characteristics of a chronic relapsing disease. With respect to dependence of the morphine type, the ideal goal of complete recovery is achieved in only a very small proportion of persons, and then usually only after prolonged and heroic therapeutic efforts. As a consequence intermediate goals have been considered.

The concept [1] of maintenance on a drug of dependence, such as heroin, or on a substitute drug of the same type, such as methadone, has been explored in order to determine if some of the pathological effects of drug dependence could be alleviated without necessarily achieving full recovery.

A fundamental concept common to all narcotic maintenance approaches is that the reduction of adverse consequences of the syndrome is an important responsibility of health agencies. This responsibility has been approached from different theoretical viewpoints and using different methods.

(*a*) *The " British approach "*

Until recent years the problem of dependence on drugs of the morphine and cocaine types was small in the United Kingdom, less than 300 cases being known to the Home Office up to the end of 1962. The system of

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1970, No. 437, p. 25 (section 8) ; 1969, No. 407, p. 20 (section 6) ; 1966, No. 343, p. 9 (section 6).

controls formerly applied to these drugs, often erroneously called the " British system " and reputedly designed to prevent dependence on them, had been adequate in the absence of a widespread demand for drugs of dependence. However, when—as in other countries—the younger age groups began to seek drugs, the system of controls was shown to be inadequate. Between 1964 and 1967, the number of known heroin and cocaine users increased from less than 500 to about 1 500. It was obvious that a new approach to the problem was required.

Inquiry by the Interdepartmental Committee of the Home Office and the Department of Health revealed that heroin was being prescribed in excessive amounts by a small number of physicians, and that this factor was central in leading to the availability of the drug to those dependent on it.[1]

Based in part on recently enacted legislation, the new " British approach" recognizes the need of the individual for treatment and the need for society to maintain its own health. The principal provisions and goals of this new approach are as follows :

(1) the provision of special treatment facilities within the health service, both outpatient and inpatient, to treat drug-dependent persons ;

(2) the requirement that the patient who desires these drugs attend a clinic fortnightly, weekly, or more frequently if the physician so desires, for treatment and for evaluation of drug dose, thus decreasing the risk of overprescribing and providing a regular physician-patient relationship that might result in motivation to abstinence ;

(3) the provision of other services by the central social services and the local authorities ;

(4) an attempt to minimize illicit drug-seeking behaviour by supplying the drug legally ;

(5) the control of physicians by prohibiting them from prescribing heroin or cocaine to dependent persons unless necessary for the treatment of organic illness ;

(6) permission to prescribe heroin or cocaine to dependent persons to be granted only to those physicians who are in receipt of a special licence from the Home Office ;

(7) the requirement that individuals diagnosed by any physician as dependent on heroin, cocaine, and certain other drugs be notified to the Principal Medical Officer of the Home Office, in order to keep the size of the problem under constant review and to prevent patients attending at more than one clinic ; and

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[1] Interdepartmental Committee on Drug Addiction (1965) *Drug addiction : the second report...*, London, HMSO.

(8) to prevent the development of a criminal organization that supplies drugs, measures aimed at reducing the need to seek illegal sources.

It is not possible to understand the rationale of this approach without appreciating the facts that (*a*) heroin is used in medical therapeutics in the United Kingdom, and (*b*) the inquiry revealed no evidence to suggest the presence of a criminal organization involved in the distribution of these drugs, since they were being manufactured and distributed legally and were diverted to drug-dependent persons by patients attending physicians.

Since the introduction of this approach, new cases of heroin dependence have been appearing much less frequently. However, only a small proportion of continuing heroin users have become entirely self-supporting ; many seek heroin (which is now scarce) outside the clinics ; arrests for both drug-related and other crimes are common ; complications arising from the use of unsterile syringes are numerous ; and mortality is high. In addition, increasing numbers of persons dependent on methadone are appearing, some of whom have never used heroin. Methadone has not yet been controlled in the same way as heroin. These developments and the substantial amount of multi-drug use have led to the presentation of a new Misuse of Drugs Bill, which would provide additional powers for the control of drugs and physicians. This bill is now before Parliament.

This approach to an acute problem has taken place in a social, medical and national setting that is unlikely to exist in any other country at the present time.

(*b*) *Methadone maintenance*

The methadone maintenance regimen for the management of drug dependence of morphine type has been employed for a number of years with selected populations, and with substantial attainment of the stated goals of decreased criminal activity, decreased use of illicit drugs, and improved social and vocational adjustment. There have been, however, a variety of approaches loosely identified as methadone maintenance and a precise statement of the concept is desirable. Some aspects of the programme have been clearly established ; many others are still on a research basis.

Methadone maintenance is the continuing daily oral administration of methadone under adequate medical supervision, the dose being adjusted (*a*) to prevent the occurrence of abstinence phenomena, (*b*) to suppress partially or completely any continuous preoccupation with the taking of drugs of the morphine type, and (*c*) to establish a sufficient degree of tolerance and cross tolerance to blunt or suppress the acute effects of such agents.

Among the points established are :

(1) The degree of tolerance and cross tolerance specified under (*c*) can be established and maintained without overt evidence of adverse effects.

(2) Some, but not all, persons with drug dependence of morphine type will accept the regimen of methadone maintenance and will apparently desist from much or all criminal activity and attain a more acceptable degree of social and vocational adjustment.

Among the points on which there is not sufficient evidence and on which further research is urgently needed are :

(1) The characteristics of persons with drug dependence of morphine type who will accept and continue in various types of programme utilizing different forms of methadone maintenance. The extent to which such factors as age, current social status, duration of dependence, and multiple drug-use are significant factors.

(2) The basic criteria for admission to the programme.

(3) The tendency to continue with the drug of dependence or turn to other drugs, the effects of which are not interfered with by methadone.

(4) The extent of antisocial behaviour and/or criminal activity while on methadone maintenance.

(5) Optimal methadone dosage for various patients in different programmes.

(6) Alternative agents that might be used.

(7) Reliability of data collected.

(8) The degree to which various elements in methadone maintenance programmes (for example, methadone itself, counselling, professional and peer-group support, social services, group therapy) contribute to the treatment outcome.

(9) Whether rehabilitation can be attained to a degree that will permit cessation of methadone administration. If so, in what circumstances ? Alternatively, is methadone maintenance, once established, a permanent way of life for social adaptation ?

Since methadone maintenance is a continuance of drug dependence of morphine type, it has been held that admission to such a programme should not be entertained unless there is clear evidence that the person is at that time drug dependent. If he is not, because of incarceration in an institution or for other reason, it has usually been accepted that he should be given every opportunity to continue without drugs, even though he has a history of dependence, with cycles of treatment and relapse, and in spite

of a high probability that he will relapse and resume drug taking. Recently, however, it has been suggested that selected prisoners and persons on parole who have such a history of drug dependence of morphine type and a high probability of relapse, might be admitted into a methadone maintenance programme on a research basis in order to determine to what extent such treatment would forestall recourse to illegal drugs and the associated anti-social behaviour patterns. Other use of such a procedure is to be discouraged and must await the results of more extensive studies.

A methadone maintenance programme, because it needs the collaboration of a wide range of disciplines, should be under institutional auspices which can provide the required services. Thus, this method is inappropriate for use by the individual private physician who is unable to supply the complete range of services and controls.

Comment

It is not possible to make valid comparisons between the " British approach " to heroin maintenance and the methadone maintenance system used in North America, because of the many differences in the populations treated and in, for example, the sociocultural factors, the practice of medicine, and the legal framework. Clearly, there are deficiencies in both approaches and neither pretends to provide effective therapy for all patients. One advantage of the methadone programme is that no drugs are prescribed for intravenous self-administration, so that complications resulting from unsterile intravenous injections are minimized. Another advantage of this programme lies in the fact that methadone, as properly used in this system, does not produce acute subjective effects. The two systems share the common goal of preventing or limiting the obtaining of illicit supplies of the drug by the patient : (*a*) in the methadone system the patient is not allowed to take the drug when he is outside the clinic until it is considered that he exhibits a positive attitude to socially acceptable behaviour and his urine specimens reveal no use of non-prescribed drugs for several weeks ; (*b*) the British system requires that the patient go daily (except at weekends) to a chemist and receive a supply of heroin for only that day.

There has been no development of a maintenance programme for patients dependent on drugs of other types, although some physicians maintain selected patients on stable doses of barbiturates or on small oral doses of amphetamines, provided that they are otherwise functioning adequately. There is no evidence to support the general use of this technique with these groups of drugs at the present time.

The Committee noted, however, that in several countries the free and permissive prescribing of drugs of dependence has led to the development of an increase in the incidence of drug dependence. No method of main-

tenance on dependence-producing drugs should be undertaken without strict controls and strict supervision by trained medical personnel.

The Committee was of the opinion that great caution is advisable in connexion with the possible use of a maintenance method for sporadic users of drugs or for young persons who have only been using drugs for a short time.

It was noted that, in a very few countries, opium is provided through governmental channels to selected, long-term opium users. The Committee hoped that information could be obtained to indicate the impact of this programme on the total pattern of use of morphine-type and other dependence-producing drugs in those countries. The goals of this approach were " problem containment " and " minimization of illicit drug traffic ", as in the case of the two maintenance programmes just discussed.

3.3.3 *Antagonists*

The use of specific antagonists to drugs of the morphine type is a relatively recent development in the treatment of persons dependent on such drugs.[1] These antagonists will precipitate abstinence phenomena when given to such dependent persons. On the other hand, when given to patients who have no physical dependence on morphine-like drugs, they tend to block the acute effects that otherwise would result from the administration of drugs of this type. If antagonists are administered regularly, they help to prevent the development of dependence and reduce the chance of a fatal overdose, should the patient attempt to use such drugs.

Cyclazocine, a specific opiate antagonist, has been subjected to clinical trials with individuals dependent on heroin. It is effective orally but may produce some unpleasant subjective side-effects and its antagonistic action lasts only about 24 hours. Consequently, if a patient omits only one dose he may experience major effects from drugs of the morphine type.

Naloxone, another specific opiate antagonist, is free of subjective side-effects, but financially prohibitive amounts are necessary to produce effective antagonistic effects by the oral route and its duration of action is rather less than 24 hours.

Work is at present proceeding on the development of a form of these drugs suitable for implantation so that a single administration will be effective for several weeks.

The number of subjects treated by these drugs is small and none of the published studies has included adequate assessment of control groups. They are much more difficult to use than methadone and less appealing to patients. As noted, narcotics must first be withdrawn from the patient,

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1970, No. 437, p. 26 (section 9) ; 1969, No. 407, p. 21.

a process which many persons dependent on heroin are not eager to undergo, and the associated desire for narcotics may not be completely suppressed.

Nevertheless, the use of antagonists has a number of potential advantages. Since they do not produce dependence of the morphine type, they can be given to persons who are experimenting with such drugs, but who have not yet become dependent. This may help to prevent the further development of such experimentation. Further, the antagonists can readily be withdrawn without causing drug-seeking behaviour. Such withdrawal may be undertaken when it is determined that there is little probability that the patient (whether a former casual or regular user) will resume his pattern of drug use. The patient would thus be freed of the necessity to take any drug.

It is the opinion of some clinicians working with these drugs that the antagonists may eventually play an important role in the treatment of some individuals, particularly those who are using drugs of the morphine type but who are not yet physically dependent, or those who, for various reasons, are not suitable for other forms of treatment. It is not likely, however, that there will be an increasing use of the available antagonists or that interest in their use will be revived until longer-acting preparations are available.

Research has recently been carried out on the characteristics of substances that interfere with the effects of amphetamines. This work is in its early stages and there is no evidence so far that such substances will be of practical use in the treatment of dependence of the amphetamine type.

3.3.4 *Self-regulating communities*

The use of the " therapeutic community " in psychiatric treatment has been noted (section 3.2.1). Modifications of this technique have been used in many different contexts, including schools and universities and penal and other settings where attempts are made to alter unacceptable behaviour patterns.

These techniques have been adapted to the purposes of self-regulating communities for drug-dependent persons. Synanon, the pioneer organization, was founded in 1958 in California. Since then, Daytop Village, the Phoenix Houses, and many others have been founded.

These programmes seem to be based upon the hypothesis that the use of drugs is a symptom of an underlying character disorder or emotional immaturity and the programmes have as their main goal the restructuring of character.

Incoming members commence with the most menial of tasks and are given the opportunity to graduate to positions of status, responsibility, and privilege. No drug-taking or physical violence are allowed.

This organizational structure permits the community to reinforce conforming behaviour almost as soon as it occurs. Most communities have also evolved techniques, including expulsion from the community, for

punishing deviant behaviour. A special form of group interaction is also obligatory, in which there must be a willingness to be direct and to expose everyone's attitudes and unacceptable behaviour to probing, harsh, and verbally aggressive attack ; at the same time, there is a tenderness and concern for the participants that would be difficult to duplicate outside a residential situation.

There are many variations in the applications of these techniques and in the size and physical surroundings of each community. The staff—administrative, maintenance, and clinical—includes former drug-users who have themselves passed through such a community. Some programmes co-operate with professional personnel, such as psychiatrists and other physicians, psychologists, and social workers ; in others the staff is firmly anti-professional, denying the possibility that anyone who has not used drugs can have insight into the problem or play any role in helping drug-users.

As more data accumulate, it has become clear that most such communities in the USA have only a limited appeal. It is estimated that about two-thirds of those who make contact (in themselves a small self-selected group) with the communities become residents and of these probably only one-half to one-third remain residents for more than a few months, the rest leaving without the approval of the community. Whether or not those who leave revert to drug use is unknown, but it is generally assumed that they do. If long-term improvement does occur, it is probably limited to less than one-third of those who make an initial contact with such communities.

Whether character-change is produced in such communities is not known. In any case, other methods of treatment of character disorders do not claim high rates of change. Most of the former drug-dependent " graduates " have become staff members of their parent organizations or some other organization utilizing similar procedures. Although pharmacological approaches to morphine-type dependence may offer useful alternatives to these programmes, the same cannot be said for drug dependence of the barbiturate and amphetamine types. Furthermore, even if the sole benefit of such communities is the provision of an environment in which the participants can function, the benefit to society is great in that most of these persons are apparently no longer involved in illegal drug use or in criminal and other untoward behaviour. These programmes also demonstrate that some former drug-users can live together in an orderly and structured society.

Whether or not this approach is applicable to many countries other than the USA and Canada is problematical. Socio-cultural patterns in some localities may preclude discussion about members of the family or the use of the group techniques, while in others they may not provide the motivational pressures to seek help.

Nevertheless, the Committee considered that further experiments on these lines should be encouraged, but stressed that scientific evaluation of their outcome, an area that has been seriously neglected, should be undertaken.

3.3.5 *The role of compulsion in treatment*

The concept of compulsion in the area of public health is not new. Throughout the world compulsory treatment or quarantine for those suffering from, or exposed to, contagious disease is a well-established principle.

Compulsory treatment in the field of mental health is also a generally accepted procedure, although it is still subject to debate, particularly with respect to the extent of and real need for its use. Detention for treatment may be justified by the presence of an illness that renders the patient dangerous to himself or others. Compulsory treatment (with or without detention) may also be justified when the illness for which treatment is indicated renders the patient incompetent to make a sound judgement about his need for treatment.

In principle, compulsion could be used in connexion with problems of drug dependence in three distinct ways :

(1) to provide care or treatment that the individual does not desire or a form of treatment other than that which he prefers ;

(2) to invoke the principle of quarantine by regarding the individual as a carrier of a communicable disorder that seriously threatens the health of the community (quarantining a person because he has a dangerous communicable disorder is an acceptable public health practice only if he is afforded such treatment as is reasonably available) ; and

(3) to require notification to medical authorities of the disorder of drug dependence in the same way as notification of other communicable diseases (this, of course, is not compulsory treatment, but rather an obligatory epidemiological procedure).

The Committee reviewed evidence relating to civil commitment for dependence on alcohol and other drugs and reviewed the arguments in favour of and against the use of compulsion in connexion with treatment.

The Committee considered that the clinical evidence was not sufficient either to support or to refute the case for various forms of compulsory treatment, but noted that, in spite of considerable experience, compulsory detention alone had not been shown to be beneficial.

Recognizing that in numerous countries drug-dependent persons are incarcerated because of unlawful activity, the Committee was concerned that concepts of drug dependence as a form of ill health be taken into account in the penal setting, so that treatment for such persons could be encouraged.

In particular, the Committee recommended the setting up of well-staffed pilot units with built-in evaluation programmes that could contribute to knowledge in this field.

The Committee was of the opinion that in countries where compulsory treatment is used it is important that transfer be possible from penal to health or other services in order that appropriate treatment could be provided.

The Committee believed there is a strong case for the introduction of compulsory notification of drug-dependent persons to a health authority, provided that the personal identity of the individual is not available to law enforcement agencies. Such a breach of medical confidentiality could vitiate attempts at treatment.

The Committee also noted that there is some evidence to indicate that some compulsion involving parole, after-care, and supervision might be of value, but that conclusive evidence is lacking. Further studies in this area were strongly encouraged.

3.3.6 *Other special considerations*

Apart from dependence of the alcohol and morphine types,[1] there are no currently available treatment methods that could be considered as being specific in their action against particular forms of drug dependence. This is true of all the currently common types, including dependence involving cannabis, the potent hallucinogens, the stimulants and sedatives, and certain inhalants. Withdrawal and acute intoxication and other complications do, of course, require special management, as described in section 3.2.3.

There are, however, some factors other than the nature of the drug(s) and complications involved that merit special consideration. These factors are the age and behaviour characteristics of the patient, the nature of his immediate socio-cultural and family environment, and the availability of health, social, and other services.

The goals of treatment are to deal with existing symptoms, including the taking of single or multiple drugs, and to deal also with underlying and associated problems. The techniques used are derived from such related fields as the management of conduct disorder and delinquency, adolescent and adult psychiatry, and learning theory (including classical and operant conditioning), and the patterns of treatment reflect these origins. Depending on circumstances, patients may be treated in self-regulating communities or residential centres (see section 3.3.4), in standard psychiatric or other medical facilities, or in programmes for delinquent youth, but most of these patients may be treated in less formal surroundings. If drug involvement is minimal, individual and family counselling and rearrangement of

[1] Disulfiram interferes specifically with the ingestion of alcohol. For drugs used in morphine-type dependence, see sections 3.3.2 and 3.3.3.

patterns of living may be feasible ; if active treatment is needed, it may sometimes be carried out in outpatient installations, which may or may not be associated with formal or informal neighbourhood youth centres. These are usually strategically located, and may be operated by official agencies or may be " self-regulating " and under varying degrees of professional guidance and control. Such activities are most effective when they form part of a comprehensive system of services, including a residential facility, a general or psychiatric hospital for treatment of intercurrent episodes, a laboratory to monitor body fluids for drug use, hostels, and long-term follow-up services. Under these conditions the local facilities may serve to channel new cases to more definitive treatment and may also provide supportive after-care and facilitate successful return to the community.

Counselling, supportive, and other follow-up services to help avoid relapse to drug use are important parts of the total treatment programme. The duration of these services for a given patient is to be measured in months and years, not days and weeks. It is also important that measures be taken to help a patient's family develop a reasonable understanding of the patient's problems and needs and ways in which the family may assist through modification of its attitudes and behaviour. Measures to foster the development of comparable understanding on the part of community leaders, employers, and others significant in the rehabilitation of drug-dependent persons are also an important part of follow-up services.

It is apparent that the treatment of drug-dependent persons necessitates special knowledge and skills and that special facilities for their treatment may often be required.

It is also clear that many different " specialists "—e.g., psychiatrists, psychologists, social workers, general physicians, policemen, and correctional and parole officers—may be important in planning and executing soundly based treatment.

The Committee emphasized, therefore, the paramount need to establish sound and harmonious training and operational links between the various professions and social agencies concerned in order to provide effective treatment at a time when it is indicated.

3.4 Approaches to prevention

Approaches to the prevention of drug dependence should have realistic aims. As previously noted, over-ambitious hopes of " eradicating " a drug problem in a short time are likely to lead to policies that are unrealistic and self-discrediting. Changes in cultural attitudes and alteration in relevant aspects of the environment can be brought about only slowly. Small and local gains are eminently worth striving for.

Prevention, particularly the use of legal controls on the distribution of drugs, when effectively applied, has been and remains an important approach in the management of drug dependence. Many other methods of prevention are being suggested and tried, and rationalization and co-ordination of these will be necessary in the future. The planning of these approaches could profitably be guided by detailed data about the manner of spread of drug dependence in a given community; unfortunately, however, very little of the necessary organized body of knowledge exists as yet. The most pressing need is to understand the various mechanisms of spread—for example, the parts played by the confirmed users of various types of drug and by the proselyte, and the influence of the profit motive.

Methods of prevention were considered under three headings: (1) legal controls restricting the distribution of drugs; (2) educational measures providing information about drugs and influencing attitudes to drug use; and (3) positive social measures providing alternatives to drug use for groups particularly " at risk " and follow-up of those who are no longer taking drugs.

3.4.1 *Legal controls*

Although legal controls on the distribution of drugs are sometimes considered to be the sole province of the legislator, the judiciary and the courts, and the customs and police authorities, they are necessarily also the concern of the health professional. The Committee indicated its agreement with the conclusion expressed in the 16th report of the WHO Expert Committee on Drug Dependence that the " need [for], type and degree of ... control must be based on two considerations: (*a*) the degree of risk to public health and (*b*) the usefulness of the drug in medical therapy ".[1] In section 2.2 of the present report the Committee expressed the view that these are primarily matters of medical assessment and judgement.

From the point of view of preventive public health measures, certain general questions should be raised whenever new legislative controls are contemplated:

(1) *The goals of legislation.* Controls may be designed to impose partial restrictions or to make a drug completely unavailable. The pressures for enactment of new legislation are complex; unnecessarily permissive or severe steps may be taken in response to public anxiety. The health expert may have to suggest the rational basis for action and to anticipate possible untoward effects—e.g., the possibility that the rapid suppression of the use of opium might lead to the introduction of other drugs, such as heroin or drugs of the amphetamine, barbiturate, or other types.

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1969, No. 407, p. 18.

(2) *Assessment of the effects of legislation.* Change in legislation should be seen as a welcome opportunity to introduce experimental method into public health. If it is believed that an alteration in legal controls will result in an altered prevalence of a particular problem, data should be gathered to confirm or refute this expectation. Any suggestion that the legislator must always act in accord with scientific dictates would, of course, be naive. Because of the many unpredictable variables that act on society after a particular piece of legislation is introduced, a cause-and-effect relationship can seldom be inferred confidently.

Legislation may be directed at controlling the manufacture, distribution, prescription, price, time of sale, or consumption of a substance. It may also be aimed at the user, curtailing his liberty or imposing other restraints upon him if he illegally possesses or uses the substance. The types of control and their value and limitations will not be discussed systematically here.

In general, when a drug is legally and readily available in a community, variations in the prevalence of dependence on the drug correspond directly to the extent of its use. The management of drug dependence may require that the factors that encourage drug use be brought under control. The excessive use of certain drugs and the related high prevalence of dependence on them in particular communities appear to have been associated with promotion by advertising. Furthermore, the advertising of pharmaceutical preparations in some countries may have had the result of encouraging the free and uncritical use of drugs in general.

The injudicious prescribing of dependence-producing drugs may also encourage increased drug use and dependence. The contribution of this factor to the drug dependence in a community may be established by monitoring the prescribing practices of physicians. Given this facility, the public health authority can seek an explanation for apparently excessive prescribing and if necessary deprive the small minority of irresponsible physicians of the right to prescribe particular dependence-producing drugs.

The control of prescribing habits can have only a limited effect. Controls directed at one particular drug may have very little effect on over-all drug dependence, since alternative drugs not subject to control are sought and used by the drug-dependent person. Furthermore, controls may be by-passed by the illegal diversion or manufacture of drugs.

Legal controls prohibiting the use of specific drugs have been used effectively in many situations. However, in countries affected by the widespread uncontrolled use of illicit drugs, prohibition may be seen in large measure as a failure. Such a situation raised the question as to what factors may be responsible for the difficulty. If major changes in the response system appear to be indicated, they should be preceded by a pilot study if at all feasible. Prohibition has been abandoned in certain com-

munities because of the force of circumstances, but regrettably the opportunities for scientific observation and data collection have, for the most part, been missed.

The isolation of drug-dependent persons in closed communities may be used to prevent the spread of drug dependence, but as a measure applied on its own it has not been successful. As a policy, isolation carries with it the danger that, by putting the problem relatively out of sight, society may lose some of its sense of responsibility with respect to the care of the affected individuals and to the underlying problems in the community.

3.4.2 *Education*

The hope that simple, information-giving educational programmes will be sufficient to prevent drug dependence is frequently expressed ; however, there is no evidence to support it and there are many reasons to doubt it. Knowledge in itself is not necessarily protective if the drug is readily available ; the fact that the incidence of dependence on restricted drugs is in many communities higher among members of the health professions than in the general population throws doubt upon the preventive value of knowledge about the dangers of drugs and emphasizes the importance of drug availability as a factor in the deviant use of drugs.

Nevertheless, the dissemination of factual information about the effects and circumstances of use of drugs of dependence is necessary to satisfy the considerable demand for such data and to avoid the dissemination of inaccurate and even false information by the uninformed. In the first place, information is needed by professional personnel—particularly, for example, by educators, social workers, jurists, law enforcement officers, and health personnel.[1] The general public should be well-informed so as to allow the promotion of the necessary legislative, preventive, and management programmes. Educational programmes, which could be available on demand, should avoid the danger of promoting an unnecessary and excessive interest in dependence-producing and other drugs.

Educational measures may be directed towards changing the attitudes of the community not only towards the use of dependence-producing drugs in particular, but also towards the use of drugs in general. Emphasis on the therapeutic value of drugs seems to have promoted the belief that for every illness and problem there is a "pill" that will bring relief. The didactic approach has so far failed to correct this naïve belief. Education of the young may be planned to promote a sound and rational approach to the use of drugs in general. A pilot study to be conducted in a local community in the USA has been devised in which children will be instructed about the proper use of drugs throughout their school careers.

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1967, No. 363, p. 35.

Advanced techniques will be needed to influence the groups of the population particularly " at risk " of becoming drug-dependent—that is, adolescents, individuals in occupational groups having ready access to drugs, and those subject to identifiable stress that may precipitate drug dependence, for example during major role transition or bereavement. The " at risk " groups include persons with delinquent and sociopathic tendencies who have already resisted the formal educational forces of their social and cultural environment and who do not alter their behaviour even in the face of bitter experience. In some communities this group includes persons who are more knowledgeable about certain aspects of drug-taking than many educators. Unfounded scare or fear tactics tend only to discredit and therefore are not likely to be helpful and may be harmful. Even when factual material about the dangers associated with the use of dependence-producing drugs is made available, persons particularly attracted by risk-taking may be stimulated to try them, although many other persons might be deterred from their use.

The prevention of drug dependence in the young could be part of a wider programme of providing services for the disturbed child early in his school career. Attention should be directed to studying the ways in which the school experience could be used as a corrective influence ; the school class may even be developed as a special form of the " therapeutic community ". Special attention to this and other " at risk " groups may be misinterpreted and resented. This problem could be anticipated by emphasizing that these educational efforts are a privilege and provide the child with special opportunities. The teachers faced with these tasks will need special training and may also need continued assistance from or consultation with skilled professionals.

The need for preventive education in the field of drug dependence has been greatly increased by the emergence in recent years of pro-drug propaganda, which has been actively disseminated by a variety of media. This propaganda portrays drug-taking as having either positive values (e.g., " mind expanding " and " transcendental ") or minimal risk. Such material can be highly misleading and requires that definite, counteracting information be made equally available.

3.4.3 *Community approaches*

As stated before, deviant use of drugs—individually as well as in its mass appearance—involves a complex interaction of drug(s), man, and his environment, including social, economic, cultural, political, and other elements of varying character and strength. The rapid changes taking place at the present time in relations between individuals, groups, and nations are also reflected in a rapidly changing pattern of drug abuse in many parts of the world. Several trends are apparent, as noted below.

(1) Certain dependence-producing drugs that have for hundreds of years been familiar to, and often more or less socially accepted in, a given cultural setting are now being introduced to nations with no or little previous experience with that particular type of drug (e.g., the introduction of cannabis to western countries and increased alcohol consumption in certain countries in Africa and Asia).

(2) The rapid development of the synthetic chemotherapeutic agents has resulted in the availability of numerous new drugs with dependence-producing properties. Some of these are widely used because of their therapeutic value ; drug dependence may sometimes occur during the course of appropriate medical practice ; such events may be regarded as adverse reactions to the drug. Special problems are created by certain psychotropic substances, particularly the amphetamine-type and barbiturate-type drugs, which are widely available as therapeutic agents, and the synthetic hallucinogens, which have essentially no current use in medical practice.

(3) An apparently widespread and increasing demand for a variety of dependence-producing drugs supports an illicit and/or unethical supply of these substances. Sometimes that demand is associated with social and cultural factors with which it was not associated only a few decades ago. For example, there is a broad demand for a variety of dependence-producing drugs among numerous groups of young, and sometimes older, persons who reject the values and beliefs of the societies in which they live, or otherwise find themselves in general opposition to " the Establishment ". Philosophical as well as profit motives affect the spread of deviant drug use.

The world situation as far as drug dependence is concerned is sometimes described in epidemiological terms : such dependence may spread from " endemic " areas at irregular intervals and with varying strength in " epidemic " forms to other groups, countries, or even continents. " Episodes ", " contagious individuals ", and " carriers " (not suffering from the disease themselves) are other terms that are used from time to time.

The Committee believes that the epidemiological model is useful in understanding many aspects of the present dynamic situation. For example, if a person is identified who must be characterized as a " contagious case ", one may be primarily interested not in isolating him from the community but rather in rendering him " non-contagious " or in placing him in a situation where he presents the lowest possible risk to himself and others without invoking full quarantine measures.

It is not within the scope of this Committee to undertake a complete analysis or even a description of the numerous social, cultural, economic, political, and other factors currently at work in the field of drug dependence. Nevertheless, it is apparent that studies of these matters should be greatly

expanded and increased emphasis placed on community approaches in this field. This is of special importance in regard to youth (and even children) demonstrating aberrant behaviour, including the use of drugs. It is, for example, widely held that children coming from disrupted, disharmonious, super-authoritarian or permissive families, " drop-outs ", and " losers " in schools and universities, represent high-risk groups as far as drug abuse is concerned. In the same group one may find children who, for one reason or another, may be termed " emotionally undernourished " and others whose unusual intelligence, sensitivity, or special talents have not been recognized, leading to deviant behaviour.

The psychological and social mechanisms will vary, but the clinician often believes it highly probable that the vicious circle could have been broken if the local community had had at its disposal resources for meeting the needs of the youth for activity, outlet, and participation or at least understanding and appreciation.

A great variety of experiments have been carried out in this field over the last few decades. In urban settings with growing problems " contact teams ", working especially at night but in principle on a 24-hour day basis, have actively sought contact with youngsters at high risk who frequent particular " danger zone " areas of the city.

Various types of special facility for youth activity have been established and may serve to help prevent drug use—e.g., " teen centres " providing activities attractive to the adolescent who might otherwise drift into a drug-taking subculture. Such activities include the establishment of groups or organizations interested in athletics, sports, music, public policy, religion, artistic activities of various kinds, and improvement of the environment through the prevention of pollution.

Special contact might well also be sought with migrant or recently migrated workers and the unemployed, who often constitute high-risk groups.

It should be regarded as a responsibility of the local health, social, and education authorities—in co-operation, if necessary, with the police and with voluntary health, religious, and other groups (for example, parent-teacher associations)—to undertake planning and to promote community action in these fields regardless of whether an articulate demand or claim has been forthcoming. A local co-ordinating body may serve a useful purpose in this connexion and also may help to foster follow-up services and the collection of data on the incidence and prevalence of drug abuse, and to identify changes in patterns and types of drug use.

Direct, open dialogue with the younger generations should be practised as far as possible to counteract the tendency of many older as well as younger persons to oversimplify—e.g., the categorizations " Establishment " and " Anti-Establishment ".

As noted, the rehabilitation of former drug users, regardless of age, is in most cases a long and difficult process. Relapses must be expected

and planned for. Success necessitates the adoption by the local community of mature and realistic attitudes and the avoidance of panic, moral condemnation, and discrimination. Facilities for vocational training, and sometimes the provision of sheltered work opportunities and hostels are useful in rehabilitation and help to prevent relapse. Generally speaking, facilities for the registration, diagnosis, treatment, after-care, etc. of drug-dependent individuals and groups should be regarded as indispensable integrated parts of the health and social service structure of any community in which drug abuse exists.

Finally, it is suggested that when there is evidence of significant " alienation " among a group, especially of younger persons, it should be regarded as indicating the possible presence of actual or potential drug-takers and should lead to an analysis of the situation and to such preventive or remedial action as may be indicated.

4. INTERNATIONAL CONTROL OF INDIVIDUAL DRUGS

Propiram [1]

The Committee considered the notification from the Government of the Federal Republic of Germany concerning propiram. The evidence accompanying this notification clearly indicates the morphine-like properties of this agent even though under some circumstances it acts as a specific opiate antagonist. The Committee was of the opinion that propiram (1) produces morphine-like effects, (2) will suppress abstinence phenomena associated with morphine dependence of moderate degree, and (3) will produce phenomena of drug dependence of the morphine type.

Propiram must be considered a dependence-producing drug comparable with codeine. Therefore, propiram and its salts should, if it were technically possible, fall under the regime of control applicable to codeine as laid down in the 1931 Convention for the drugs specified in Article 1, paragraph 2, Group II of that Convention. Since however, propiram is not convertible into a dependence-producing drug with effects comparable to those of morphine—such convertibility being the criterion for inclusion in Group II as set out in Article 1, paragraph 2 of the 1931 Convention—it cannot be included in that group. Nevertheless, the Committee was of the opinion that, in the interest of public health, it would be desirable that propiram be controlled as though it were included among the drugs specified in Article 1, paragraph 2, Group II of the 1931 Convention.

[1] Proposed INN for *N*-(1-methyl-2-piperidinoethyl)-*N*-2-pyridylpropionamide.

The WHO Expert Committee on Drug Dependence

RECOMMENDS

1. that pursuant to Article 1 of the 1948 Protocol, its opinions with respect to propiram and its salts be communicated to the Secretary-General of the United Nations ;

2. that pursuant to Article 3, paragraph 1, of the Single Convention on Narcotic Drugs, 1961, the Secretary-General of the United Nations be notified that, in the opinion of WHO, Schedule II of the Single Convention requires an amendment, namely, the addition of propiram ; and

3. that WHO recommend to the United Nations Commission on Narcotic Drugs the placing of propiram in Schedule II of the Single Convention, unless WHO has received by 4 January 1971 information that affects, in its judgement, the Expert Committee's opinion as formulated above.

Diphenoxylic acid [1]

The Committee was informed that diphenoxylic acid was under consideration for production for use in medical practice. This substance is the active metabolite of diphenoxylate,[2] a drug already included in Schedule I of the Single Convention on Narcotic Drugs, 1961, and Group I of the 1931 Convention. The Committee was of the opinion that diphenoxylic acid, because it (1) produces morphine-like effects, (2) will suppress abstinence phenomena of a known dependence of the morphine type, and (3) will sustain dependence of the morphine type essentially as does the parent substance diphenoxylate, must be considered a dependence-producing substance comparable with morphine and that, if the drug is placed in production, it should fall under the regime laid down in the 1931 Convention for drugs specified in Article 1, paragraph 2, Group I and Schedule I of the Single Convention on Narcotic Drugs, 1961.

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[1] 1-(3-cyano-3,3-diphenylpropyl)-4-phenylisonipecotic acid.

[2] Proposed INN for 1-(3-cyano-3,3-diphenylpropyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester.

Annex 1

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Annex 2

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Annex 3

LIST OF DRUGS UNDER INTERNATIONAL NARCOTICS CONTROL[1]

Common name or INN *	*Chemical designation*	*WHO Expert Committee on Drug Dependence*[2]		*Control regime*	
		Report number	*Reference*	*1931 Convention Group*	*1961 Convention Schedule*[3]
acetorphine *	6,7,8,14-tetrahydro-7α-(1-hydroxy-1-methylbutyl)-6,14-*endo*-ethenooripavine 3-acetate	15	1966, **343**, 3	I	I/IV
acetyldihydrocodeine	acetyldihydrocodeine	1	1949, **19**, 30	II	II
acetylmethadol *	3-acetoxy-6-dimethylamino-4,4-diphenyl-3-heptane	1	1949, **19**, 31	I	I
allylprodine *	3-allyl-1-methyl-4-phenyl-4-propionoxypiperidine	10	1960, **188**, 3	I	I
alphacetylmethadol *	α-3-acetoxy-6-dimethylamino-4,4-diphenylheptane	4	1954, **76**, 7	I	I
alphameprodine *	α-3-ethyl-1-methyl-4-phenyl-4-propionoxypiperidine	7	1957, **116**, 8	I	I
alphamethadol *	α-6-dimethylamino-4,4-diphenyl-3-heptanol	4	1954, **76**, 7	I	I
alphaprodine *	α-1,3-dimethyl-4-phenyl-4-propionoxypiperidine	1	1949, **19**, 30	I	I
anileridine *	1-(*p*-aminophenethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	7	1957, **116**, 7	I	I
benzethidine *	1-(2-benzyloxyethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	10	1960, **188**, 4	I	I

* Proposed international non-proprietary name (INN).

[1] For details such as synonyms and the date of coming into force of international control, see *Multilingual List of Narcotic Drugs under International Control* (UN document E/CN.7/513) and also *Annex to the statistical forms "Yellow List"* published annually by the International Narcotics Control Board.

[2] The references given in this column are to *World Health Organization Technical Report Series*, with the exception of the report published in 1949 which appeared in *Official Records of the World Health Organization, No. 19*.

[3] In Schedule I of the 1961 Convention are included :

The isomers, unless specifically excepted, of the drugs in this Schedule whenever the existence of such isomers is possible within the specific chemical designation ;

The esters and ethers, unless appearing in another Schedule, of the drugs in this Schedule whenever the existence of such esters and ethers is possible ;

The salts of the drugs listed in this Schedule, including the salts of esters, ethers, and isomers as provided above whenever the existence of such salts is possible.

In Schedule II of the 1961 Convention are included :

The isomers, unless specifically excepted, of the drugs in this Schedule whenever the existence of such isomers is possible within the specific chemical designation ;

The salts of the drugs listed in this Schedule, including the salts of the isomers as provided above whenever the existence of such salts is possible.

In Schedule IV of the 1961 Convention are included the salts of the drugs listed in this Schedule whenever the formation of such salts is possible.

Common name or INN *	*Chemical designation*	*WHO Expert Committee on Drug Dependence* [1]		*Control regime*	
		Report number	*Reference*	*1931 Convention Group*	*1961 Convention Schedule* [3]
benzylmorphine	3-benzylmorphine			I	I
betacetylmethadol *	β-3-acetoxy-6-dimethylamino-4,4-diphenylheptane	4	1954, **76**, 7	I	I
betameprodine *	β-3-ethyl-1-methyl-4-phenyl-4-propionoxypiperidine	3	1952, **57**, 7	I	I
betamethadol *	β-6-dimethylamino-4,4-diphenyl-3-heptanol	5	1955, **95**, 8	I	I
betaprodine *	β-1,3-dimethyl-4-phenyl-4-propionoxypiperidine	1	1949, **19**, 30	I	I
bezitramide *	1-(3-cyano-3,3-diphenylpropyl)-4-(2-oxo-3-propionyl-1-benzimidazolyl)-piperidine	16	1969, **407**, 22	I	I
cannabis and cannabis resin	*Cannabis sativa* L.			I	I/IV
clonitazene *	2-*p*-chlorbenzyl-1-(2-diethylaminoethyl)-5-nitrobenzimidazole	11	1961, **211**, 4	I	I
coca leaf	*Erythroxylon coca* L.			I	I
cocaine	methyl ester of benzoylecgonine			I	II
codeine	3-methylmorphine			II	II
codoxime *	dihydrocodeinone-*O*-(carboxymethyl)oxime			I	I
concentrate of poppy straw					I
desomorphine *	dihydrodeoxymorphine			I	I/IV
dextromoramide *	(+)-4-[2-methyl-4-oxo-3,3-diphenyl-4-(1-pyrrolidinyl)butyl] morpholine	8	1958, **142**, 8	I	I
diampromide *	*N*-[2-(methylphenethylamino)-propyl]-propionanilide	11	1961, **211**, 5	I	I
diethylthiambutene *	3-diethylamino-1,1-di-(2′-thienyl)-1-butene	6	1956, **102**, 10	I	I
dihydrocodeine	7,8-dihydrocodeine	1	1949, **19**, 30	II	II
dihydromorphine	7,8-dihydromorphine			I	I
dimenoxadol *	2-dimethylaminoethyl-1-ethoxy-1,1-diphenylacetate	9	1959, **160**, 9	I	I
dimepheptanol *	6-dimethylamino-4,4-diphenyl-3-heptanol	1	1949, **19**, 31	I	I
dimethylthiambutene *	3-dimethylamino-1,1-di-(2′-thienyl)-1-butene	4	1954, **76**, 9	I	I
dioxaphetyl butyrate *	ethyl 4-morpholino-2,2-diphenylbutyrate	6	1956, **102**, 9	I	I
diphenoxylate *	1-(3-cyano-3,3-diphenylpropyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	11	1961, **211**, 5	I	I
dipipanone *	4,4-diphenyl-6-piperidino-3-heptanone	5	1955, **95**, 8	I	I
ecgonine	(−)-3-hydroxytropane-2-carboxylate			I	I
ethylmethylthiambutene *	3-ethylmethylamino-1,1-di-(2′-thienyl)-1-butene	4	1954, **76**, 9	I	I

Common name or INN *	*Chemical designation*	*WHO Expert Committee on Drug Dependence* [1]		*Control regime*	
		Report number	*Reference*	*1931 Convention Group*	*1961 Convention Schedule* [3]
ethylmorphine	3-ethylmorphine			II	II
etonitazene *	1-diethylaminoethyl-2-*p*-ethoxybenzyl-5-nitrobenzimidazole	11	1961, **211**, 7	I	I
etorphine *	6,7,8,14-tetrahydro-7α-(1-hydroxy-1-methylbutyl)-6,14-*endo*-ethenooripavine	15	1966, **343**, 5	I	I/IV
etoxeridine *	1-[2-(2-hydroxyethoxy)ethyl]-4-phenylpiperidine-4-carboxylic acid ethyl ester	8	1958, **142**, 9	I	I
fentanyl *	1-phenethyl-4-*N*-propionylanilinopiperidine	13	1964, **273**, 4	I	I
furethidine *	1-(2-tetrahydrofurfuryloxyethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	10	1960, **188**, 5	I	I
heroin	diacetylmorphine			I	I/IV
hydrocodone *	dihydrocodeinone			I	I
hydromorphinol *	14-hydroxy-7,8-dihydromorphine	11	1961, **211**, 7	I	I
hydromorphone *	dihydromorphinone			I	I
hydroxypethidine *	4-(*m*-hydroxyphenyl)-1-methylpiperidine-4-carboxylic acid ethyl ester	1	1949, **19**, 30	I	I
isomethadone *	6-dimethylamino-5-methyl-4,4-diphenyl-3-hexanone	1	1949, **19**, 31	I	I
ketobemidone *	4-(*m*-hydroxyphenyl)-1-methyl-4-propionylpiperidine	1	1949, **19**, 30	I	I/IV
levomethorphan *	(−)-3-methoxy-*N*-methylmorphinan	3	1952, **57**, 6	I	I
levomoramide *	(−)-4-[2-methyl-4-oxo-3,3-diphenyl-4-(1-pyrrolidinyl)-butyl]morpholine	8	1958, **142**, 8	I	I
levophenacylmorphan *	(−)-3-hydroxy-*N*-phenacylmorphinan	10	1960, **188**, 5	I	I
levorphanol *	(−)-3-hydroxy-*N*-methylmorphinan	3	1952, **57**, 6	I	I
metazocine *	2′-hydroxy-2,5,9-trimethyl-6,7-benzomorphan	10	1960, **188**, 6	I	I
methadone *	6-dimethylamino-4,4-diphenyl-3-heptanone	1	1949, **19**, 30	I	I
methadone-intermediate	4-cyano-2-dimethylamino-4,4-diphenylbutane	12	1962, **229**, 7	I	I
methyldesorphine *	6-methyl-Δ^6-deoxymorphine	4	1954, **76**, 6	I	I
methyldihydromorphine *	6-methyldihydromorphine	5	1955, **95**, 5	I	I
metopon *	5-methyldihydromorphinone	1	1949, **19**, 30	I	I
moramide-intermediate	2-methyl-3-morpholino-1,1-diphenylpropane carboxylic acid	12	1962, **229**, 7	I	I
morpheridine *	1-(2-morpholinoethyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	8	1958, **142**, 8	I	I

Common name or INN *	*Chemical designation*	*WHO Expert Committee on Drug Dependence* [2]		*Control regime*	
		Report number	*Reference*	*1931 Convention Group*	*1961 Convention Schedule* [3]
morphine				I	II
morphine-*N*-oxide				I	I
morphine pentavalent nitrogen derivatives				I	I
myrophine *	myristylbenzylmorphine	5	1955, **95**, 6	I	I
nicocodine *	6-nicotinoylcodeine	12	1962, **229**, 6	II	II
nicodicodine *	6-nicotinoyldihydrocodeine	15	1966, **343**, 5	I	I
nicomorphine *	3,6-dinicotinoylmorphine	9	1959, **160**, 4	I	I
noracymethadol *	(±)-α-3-acetoxy-6-methylamino-4,4-diphenylheptane	12	1962, **229**, 5	I	I
norcodeine *	*N*-demethylcodeine	9	1959, **160**, 5	II [4]	II
norlevorphanol *	(−)-3-hydroxymorphinan	10	1960, **188**, 6	I	I
normethadone *	6-dimethylamino-4,4-diphenyl-3-hexanone	5	1955, **95**, 7	I	I
normorphine *	demethylmorphine	9	1959, **160**, 5	I	I
norpipanone *	4,4-diphenyl-6-piperidino-3-hexanone	13	1964, **273**, 4	I	I
opium				I	II
oxycodone	14-hydroxydihydrocodeinone			I	I
oxymorphone *	14-hydroxydihydromorphinone	5	1955, **95**, 6	I	I
pethidine *	1-methyl-4-phenylpiperidine-4-carboxylic acid ethyl ester	1	1949, **19**, 30	I	I
pethidine-intermediate A	4-cyano-1-methyl-4-phenylpiperidine	12	1962, **229**, 7	I	I
pethidine-intermediate B	4-phenylpiperidine-4-carboxylic acid ethyl ester	12	1962, **229**, 7	I	I
pethidine-intermediate C	1-methyl-4-phenylpiperidine-4-carboxylic acid			I	I
pethidine-intermediate C, esters of		5	1955, **95**, 9	I	I
phenadoxone *	6-*N*-morpholino-4,4-diphenyl-3-heptanone	1	1949, **19**, 31	I	I
phenampromide *	*N*-(1-methyl-2-piperidinoethyl)propionanilide	11	1961, **211**, 7	I	I
phenazocine *	2′-hydroxy-5,9-dimethyl-2-phenethyl-6,7-benzomorphan	10	1960, **188**, 6	I	I
phenomorphan *	3-hydroxy-*N*-phenethylmorphinan	6	1956, **102**, 8	I	I
phenoperidine *	1-(3-hydroxy-3-phenylpropyl)-4-phenylpiperidine-4-carboxylic acid ethyl ester	11	1961, **211**, 8	I	I
pholcodine *	morpholinylethylmorphine	3	1952, **57**, 5	II	II
piminodine *	4-phenyl-1-(3-phenylaminopropyl)piperidine-4-carboxylic acid ethyl ester	10	1960, **188**, 7	I	I

[4] Recommended by WHO for this control regime. (For other footnotes, see p. 41.)

Common name or INN *	*Chemical designation*	*WHO Expert Committee on Drug Dependence* [2]		*Control regime*	
		Report number	*Reference*	*1931 Convention Group*	*1961 Convention Schedule* [3]
piritramide *	1-(3-cyano-3,3-diphenylpropyl)-4-(1-piperidino)-piperidine-4-carboxylic acid amide	14	1965, **312**, 3	I	I
proheptazine *	1,3-dimethyl-4-phenyl-4-propionoxyazacycloheptane	6	1956, **102**, 11	I	I
properidine *	1-methyl-4-phenylpiperidine-4-carboxylic acid isopropyl ester	5	1955, **95**, 9	I	I
propiram *	*N*-(1-methyl-2-piperidinoethyl)-*N*-2-pyridylpropionamide	18	1970, **460**, 37	II [4]	II [4]
racemethorphan *	(±)-3-methoxy-*N*-methylmorphinan	3	1952, **57**, 7	I	I
racemoramide *	(±)-4-[2-methyl-4-oxo-3,3-diphenyl-4-(1-pyrrolidinyl)butyl]morpholine	8	1958, **142**, 8	I	I
racemorphan *	(±)-3-hydroxy-*N*-methylmorphinan	3	1952, **57**, 6	I	I
thebacon *	acetyldihydrocodeinone			I	I
thebaine	3,6-dimethyl-8-dehydromorphine			I	I
trimeperidine *	1,2,5-trimethyl-4-phenyl-4-propionoxypiperidine	8	1958, **142**, 9	I	I

[4] Recommended by WHO for this control regime. (For other footnotes, see p. 41.)

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