



OPTIONS FOR THE USE OF METHADONE IN THE TREATMENT OF DRUG DEPENDENCE



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Contents

I.	Background	1
II.	Methadone and drug problems	2
III.	Detoxification, treatment and maintenance	4
IV.	Choice of treatment options: factors relating to detoxification	6
V.	Choice of treatment options: factors relating to maintenance	7
VI.	Choice of treatment options: factors relating to HIV prevention among drug abusers	8
VII.	Tasks ahead	9
VIII.	Conclusions	10
	References	11

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I. BACKGROUND

This report is a product of the WHO consultation group on the use of substitution drugs in the treatment of opiate dependence, which met in Geneva on 12-15 December 1988. The group considered the role of substitution drugs and reviewed their place in the detoxification and treatment of drug dependence, also bearing in mind their potential relevance for preventing the transmission of the human immuno-deficiency virus (HIV). A list of those who participated in the consultation group is attached as appendix A to this report.

Within the context of its programme on prevention and control of alcohol and drug abuse, WHO has given special attention to activities related to the treatment of drug dependence. It is recognized that drug abuse treatment includes a range of medical and social interventions designed to reduce damage to health and to promote a drug-free lifestyle. Experience indicates that successful treatment is often characterized by an accumulation of incremental changes in behaviour over an extended period of time.

Four major lines of work have been developed. Firstly, as an integral part of national policies to combat drug abuse, the nature and effectiveness of drug dependence treatment programmes has been analysed (Jayasuriya et al., 1987). Secondly, a major international review has been undertaken of legislation relating to the treatment of drug and alcohol dependent persons (Porter et al., 1986); subsequently, guidelines have been prepared on revising such legislation (Curran, et al., 1987). Thirdly, in order to support efforts to enhance prevention and treatment services for drug dependent persons, training materials have been developed, tested and widely disseminated. These include a manual for use in medical schools and other health institutions (Arif & Westermeyer, 1988a) and a series of learning packages for primary care workers. Fourthly, a major initiative consists of a systematic effort to assess methods for drug abuse treatment, working towards the production of guidelines about standards of care.

It is therefore important to note that WHO's previous and current work on methadone and other substitution drug therapy has occurred as part of a comprehensive series of activities on drug dependence treatment as a whole. As a first step, a review was undertaken of methadone programmes in nineteen Member States. The report summarizing the experience of these countries has been issued by WHO (Arif & Westermeyer, 1988b). It should be recognized, however, that since these reports were compiled before the impact of AIDS (and the relevance of drug treatment programmes to the prevention of the spread of HIV infection) had been fully appreciated, the information can best be seen as a baseline from which to examine subsequent changes to policies and programmes. This issue is also touched upon in a broader review of the main trends in methadone treatment, which will be published early in 1989 (Arif & Westermeyer, 1989). Much of this work has benefitted from the support of the UN Fund for Drug Abuse Control.

Based upon this previous work, and upon the need to reassess methadone treatment in the light of its potential relevance to the spread of HIV infection, WHO was pleased to respond positively to the governments of the Netherlands and the United States of America, when they suggested that the time was ripe for a fresh initiative in this field. The meeting which led to the production of this report was supported by the governments of those two countries. The present document should, however, be seen as only the first step in the process of reassessing the place of methadone and other substitution drug therapies in the treatment of drug dependence.

This work constitutes an important contribution towards assisting Member States in the implementation of the Single Convention on Narcotic Drugs, 1954, (United Nations, 1977) which has been ratified by 120 countries and requires that signatories shall "give special attention to and take all practicable measures for the prevention of abuse of drugs and for the early identification, treatment, education, after-care, rehabilitation and social reintegration of the persons involved and shall coordinate their efforts to these ends. The Parties shall as far as possible promote the training of personnel in the treatment, after-care, rehabilitation and social reintegration of abusers of drugs." International treaty obligations are therefore also among the reasons for the determination of countries to provide adequate treatment to drug users.

II. METHADONE AND DRUG PROBLEMS

In view of the need to reassess the place of methadone in the detoxification and treatment of drug dependence, particularly in the light of its potential relevance to efforts to contain the spread of HIV infection, the meeting agreed upon the importance of clarifying some basic concepts relevant to this area. Towards this end, a substantial body of evidence was reviewed. This included reports from countries in all WHO regions, as well as critical reviews of outcome studies, particularly from North America and Western Europe. Differences in approaches to the use of methadone and other substitution drugs in particular cultural settings were extensively discussed. This review led to the conclusion that, whilst no single approach could with confidence be recommended as appropriate to the needs of all countries, it was nevertheless possible to identify a clear range of options for the use of methadone in detoxification and treatment. With respect to these options, it was also possible to set out their respective advantages and disadvantages and to illustrate the factors which should be taken into account in selecting any of the options available.

Health planners face a range of treatment and intervention options for persons dependent on opioids. Each option should be seen as having its own advantages and disadvantages and these may differ depending on whether the perspective is that of the individual in treatment, the health system providing treatment, the local community or the country. Advantages and disadvantages will need to be weighed according to the nature of evidence available on efficacy and since many factors will be involved, a careful analysis of all possible intervening factors is recommended whenever a decision on options is being taken. In some cases decisions may be based on plausibility as available evidence on efficacy may not be sufficient or adequate to make a definite decision on these grounds alone.

The term "comprehensive" denotes a functional combination of detoxification, treatment, and social and rehabilitation services at the local or regional level, whose operational characteristics are primarily directed to addicts' needs. A new challenge for drug treatment services is to broaden the focus beyond abstinence to include strategies for reducing the health risks and minimizing other harmful sequelae associated with the continued use of drugs. The treatment of drug addiction is a time-consuming process, and continuity of care is essential in order to have a significant positive impact in individual and public health.

Abstinence-oriented drug treatment services appeal to only a minority of injecting drug users (IDUs). The seriousness of the threat of HIV infection in IDUs who share injection equipment has now been widely recognized. Uninfected IDUs and new recruits to drug use must be protected, as far as possible, from the risk of infection with HIV. In view of the urgent need to address the problems associated with HIV infection among drug abusers, it is now important for countries which have not already done so to consider, in addition to existing services, the development of harm-reduction approaches to the prevention of HIV transmission among drug users. Methadone maintenance is clearly one of the approaches which should be considered in this context. Although some IDUs will continue to use drugs, other worthwhile goals can still be achieved, including a reduction in HIV risk taking behaviours, such as needle sharing. A harm reduction approach with IDUs seeking to avoid the harmful consequences of drug use but who are not willing, or do not yet believe themselves able to abstain from drugs, may have limited expectations but may also make lower demands of patients than abstinence. In establishing such programmes, it is important to avoid excessive demands which will deter too many IDUs from participation in treatment but still maintain sufficient compliance to proposed behaviour change in order to provide a realistic chance for risk reduction.

High quality abstinence-oriented treatment services have been shown to be effective in reducing or even eliminating drug use and should be expanded. Programmes of poor quality need to be improved to increase their effectiveness in reducing drug consumption. In some countries, low quality programmes may require increased funding to improve quality and thereby effectiveness. Although expansion of drug treatment services requires additional resources, this expenditure can be cost-effective, especially if considered in the context of HIV prevention and the costs associated with treatment of HIV related diseases, or other social consequences of illicit drug use.

At present, substitution therapy (which consists of providing under controlled conditions an alternative psychoactive substance to the drug of abuse) has only been developed for dependence on opioids, primarily using methadone. The development of new agents may offer the possibility of additional advantages in the future. The chronic consumption of substitution drugs can also lead to or maintain dependence, but it takes away the need to obtain impure and expensive illicit drugs, and enables oral rather than intravenous preparations of drugs to be utilized.

The report is primarily concerned with the use of methadone as a substitution drug, since this is the drug for which most data are available. It has also attracted most international attention. This report, including its sections dealing with options for the use of methadone and some of the criteria by which its use may be evaluated, could apply with some modifications to other substitution drugs, such as opium. It is, however, important that other substitution drugs should be separately reviewed, and that the results of that review be considered in relation to the present document.

The abuse of drugs in addition to maintenance drugs can pose management problems. In some countries, considerable difficulties have been caused by high levels of cocaine use by patients on methadone maintenance. The lack of specific therapy for the management of psychostimulant use requires further research. Comprehensive treatment programmes for IDUs are needed in the management of a range of problems including consumption of non-opioid drugs.

The literature on the outcome of methadone maintenance programmes suffers from a lack of uniformity relating to outcome variables and treatment goals. The lack of randomized, controlled studies does not allow comparison with other treatment modalities and the methodological problems of research in this area have proved to be formidable. The value of ancillary treatment provided together with methadone is generally acknowledged but adequate standards of ancillary treatment are poorly defined. In addition, it is essential to recognize the need to be sensitive to the special needs of countries in responding to particular patterns of drug abuse in particular cultural contexts. Attempts to generalize the outcome of treatment evaluation research across national boundaries should be made cautiously, as differences in socio-cultural values, availability of licit and illicit drugs and patterns of use, law enforcement and health care systems and drug treatment services reduce the generalizability of results.

In recognition of the important public health implications of HIV infection in IDUs, in most countries the containment of the spread of HIV infection in IDUs should be given high priority. Efforts to prevent the initiation or spread of drug use must also be intensified. With such programmes a principal aim of treatment might be reduction of HIV infection and minimization of other harmful consequences without an expectation of abstinence from drugs. Education about AIDS, and provision of condoms, sterile injection equipment and bleach should be considered and in some cases may be included within the range of services. These issues are dealt with in greater detail in the report of the WHO meeting on HIV infection and drug injecting intervention strategies, held in Geneva on 18-20 January 1988. There clearly is a need to achieve close collaboration between national AIDS programmes and national drug abuse programmes so as to achieve optimal use of available resources and to harmonize approaches to prevention and treatment.

The development of drug treatment services should be linked to efforts to prevent the initiation of drug use. Such efforts require intensification of primary prevention with renewed attention paid to the role of adverse social conditions which appear to encourage the production of illicit substances in countries of origin and their consumption in countries of destination.

III. DETOXIFICATION, TREATMENT AND MAINTENANCE

Detoxification is the process by which drug dependent persons are withdrawn from drugs. This should be carried out with regard for the safety and physical and psychological comfort of the addict. The success of a detoxification procedure may be judged by various criteria. Of primary relevance is the attainment of abstinence, though such other factors as the severity of withdrawal symptoms, the duration of withdrawal symptoms, and drop-out rates associated with detoxification programmes are also relevant.

Detoxification alone has not been found to be effective in leading to long-term abstinence. However, detoxification should be judged by its own criteria and can be considered successful if the limited goals of controlled withdrawal from drugs are met, even if a relapse to drug use subsequently occurs.

The time limits imposed for detoxification in different clinical settings show considerable variation. However, reducing doses of methadone which are prescribed over a period of months rather than weeks should probably be regarded as a form of maintenance rather than as detoxification.

A variety of detoxification techniques are available. In some countries, inexpensive methods have been developed without requiring medication using a caring environment and with highly trained, compassionate staff who need not have health professional qualifications.

Detoxification utilizing medication but not substitution drugs may involve a variety of drugs from different groups, including benzodiazepines, alpha-adrenergic blockers (clonidine), anti-diarrhoeal medication, anti-spasmodics and analgesics.

Treatment may be carried out without medication and involve a range of approaches including individual/group problem oriented counselling, therapeutic communities, long-term residential rehabilitation, and self-help groups such as Narcotics Anonymous. Non-substitution pharmacotherapy is less common, but long-term therapy with major tranquilizers has been used in some developing countries.

Substitution therapy is generally to be reserved for drug users with a longer history of drug use, opioid dependence and/or other drug related problems. Methadone hydrochloride is safe and effective for use in substitution therapy, provided that the necessary safeguards and auxiliary services are available. Such safeguards and auxiliary services include appropriate medical examination of drug users seeking assistance (in order to determine their health status and the presence of drug dependence), laboratory facilities to conduct blood and urine testing, and health and social counselling, as well as measures to prevent diversion of methadone into the illicit market.

The prescribing of opioid drugs is a medical responsibility and the use of methadone in management of persons dependent on opioids requires medical involvement. The dispensing and administering of methadone to persons dependent on opioids can be handled by nursing, pharmacy, and other qualified health professionals.

An effective treatment response to drug problems requires a range of services to meet the different needs of different individuals. The provision of services may be enhanced by developing innovative approaches such as a "multi-tier" system whereby stable patients who have been under treatment for lengthy periods could be referred to a less expensive form of treatment with less stringent requirements and fewer staff.

Methadone may be used as a detoxification option or in relation to long-term maintenance prescribing. As a detoxification option it may be used in either an in-patient or an out-patient setting, and as a maintenance drug it may be used in relation to different treatment goals (e.g. reducing criminal behaviour, enhancing social stability, or improving physical health, including the prevention of HIV and hepatitis B infection).

Some of the advantages and disadvantages of the methadone detoxification and treatment options are shown in Table 1. The next three sections of this report deal with factors which should be taken into account in the choice of treatment options.

Options for Detoxification and Treatment using Methadone*
Examples of Advantages and Disadvantages from a Range of Perspectives

OPT I O N S	I N D I V I D U A L	H E A L T H S Y S T E M	C O M M U N I T Y
<u>In-Patient Detoxification with Methadone</u>	(+) EFFICIENT MANAGEMENT OF WITHDRAWAL SYNDROME (+) SAFETY (+) EFFICACY (+) ATTRACTIVE FOR IDUs (-) constraints of clinical environment	(-) resources allocation high	(-) high cost
<u>Out-Patient Detoxification with Methadone</u>	(+) NON-INSTITUTIONAL SETTING (+) ATTRACTIVE FOR IDUs (-) low compliance (-) difficult management of withdrawal syndrome	(+) RESOURCES ALLOCATION LOW	(+) LOW COST (-) possible diversion of substitution drugs
<u>Detoxification only with Methadone (with follow-up treatment/rehabilitation)</u>	(+) ACCESSIBLE WITH LOW LEVEL OF COMMITMENT (-) limited goals (-) high relapse rates	(+) RESOURCES ALLOCATION LOW (-) staff requirements	(-) high relapse rate
<u>Long-term Treatment and Maintenance with Methadone</u>	(+) LOW SELECTIVITY (+) ATTRACTIVE FOR IDUs (-) indefinite duration of treatment	(+) MAINTAINS CONTACT WITH POPULATION AT RISK (-) resources allocation high	(-) possible diversion of substitution drugs

* NB: 1. Similar advantages and disadvantages could be described (a) for other substitution drugs, (b) for other forms of detoxification and/or treatment options.

2. Advantages and disadvantages could also be listed at the national level. Examples would include the effects of methadone treatments on the prevalence of drug dependence or the possible conflict between methadone programmes and existing drug abuse and other policies. Current evidence makes it very difficult to evaluate how these or other issues could with confidence be described as advantages or disadvantages; depending on circumstances, they could be either.

IV. CHOICE OF TREATMENT OPTIONS: FACTORS RELATING TO DETOXIFICATION

In assessing whether to use methadone for detoxification purposes, a number of factors have to be taken into account. Those listed below are intended as examples and should not necessarily be considered a comprehensive list. The meeting recommended that each country should develop its own list of factors most relevant to its particular situation.

(1) Nature and extent of opiate use in a given region

In a region with little opiate use, there is no need for a specific detoxification using opiate substitution, and where little heroin use is present, there is no need to introduce methadone in detoxification procedures. The use of medication in detoxification responds to the nature and patterns of drug use in general.

(2) Social and health consequences of opiate use in a given region

The more a society is confronted by undesirable consequences of opiate use, and the more serious they are, the more there is a need for an attractive and efficient modality specifically designed for the detoxification of opiate users. In order to be able to give this factor appropriate weighting, it is important that the inventory of consequences should be as comprehensive as possible. At the same time, however, it may often be necessary to make judgements on the basis of incomplete and partial information. Although accurate reporting systems, combined with broad epidemiological studies, still constitute an ideal information base, unrealistically high expectations regarding the quality and quantity of available data should not become an excuse for inaction.

(3) Prevalence of HIV infection and related conditions in opiate dependent persons in a given region

The higher the prevalence, the more urgent becomes the goal of attracting IDUs into treatment and management programmes which aim to minimize the risk of continued injecting in general and of using contaminated syringes and needles in particular. At the same time, where prevalence is lower, the opportunities for prevention may be even greater.

(4) National resources

(i) Funding

Available funds are most effectively used for priority purposes. Within an already well developed medical system, the use of methadone in detoxification may be cost effective. In this connection, it should be borne in mind that methadone may be proposed for some services only, either because of a particular pattern of drug abuse in part of a country or because of existing resources there. Countrywide application of programmes will not always be the most appropriate option.

(ii) Therapeutic personnel availability

Utilization of methadone asks for well trained therapeutic personnel, as methadone becomes unsafe in untrained hands and carries risks of diversion.

(iii) Clinical and laboratory technical support

Where methadone is to be used, a medical infrastructure is required for the medical examination of patients and for urine analysis as a safeguard against continued illicit drug use and poly-drug use with increased risks for overdose.

(5) Professional and public perception of detoxification using substitution drugs

The use of methadone cannot be safe and effective unless it is accepted among those who have to handle it in hospitals, laboratories, health authorities and other settings. Efforts would have to be made to determine current perceptions, both within the health sector and in the general population. The results of such enquiries could then be reflected in the process of policy formulation.

- (6) Ability to attract opiate dependent persons in comparison to other detoxification modalities (including completion rates)

The use of methadone increases the acceptability to the user since it helps to make opiate detoxification safe and comfortable. The attractiveness of detoxification procedures depends on a number of variables including the qualifications of personnel. Nevertheless, the acceptability of programmes has to be monitored continuously.

- (7) Proportion subsequently referred into follow-up treatment

Detoxification alone is not likely to be followed by long-term abstinence and life-style change. It therefore should be used as an opportunity to motivate IDUs for follow-up treatment. Again, many factors will have an impact on the ability of programmes to motivate for continued treatment. The subjective experience of a safe and comfortable detoxification may help, but is not enough. Programmes therefore have to be monitored for their effectiveness in this regard.

- (8) Side effects and safety

Detoxification from opiate dependence has physiological and psychological risks. These risks have to be weighed against eventual side effects and safety of medication used in detoxification. In some countries, the use of methadone will be safer and better controllable on an inpatient basis as compared to an outpatient basis; the same is true for other types of effective medication.

- (9) Conformity with national legislation and international treaties

In a few countries, the use of agonists in detoxification is incompatible with national legislation, but has no incompatibility with international treaties.

V. CHOICE OF TREATMENT OPTIONS: FACTORS RELATING TO MAINTENANCE

The factors set out here should be considered in the light of those already described in the previous section.

- (1) Nature and extent of opiate use in a given region

Methadone maintenance is appropriate to the extent that heroin dependence is present and other treatment modalities prove unable to attract sufficient numbers of heroin dependent persons into therapy and rehabilitation.

- (2) Social and health consequences of opiate use in a given region

The more undesirable consequences of opiate use are present in dependent persons unable to reach abstinence, the more it may be necessary to consider methadone maintenance as a modality for treatment or management of health and social problems in those persons.

- (3) Problems of HIV infection and related conditions in opiate dependent persons in a given region

High infection prevalence rates will increase the need to consider methadone maintenance as a treatment or management modality in order to minimize behaviour posing the risk of transmitting HIV infection. Efficacy of methadone maintenance in this respect has to be monitored and weighed against possible adverse consequences, such as the risk of diversion of methadone into the community.

- (4) National resources

Medical infrastructure, availability of therapeutic personnel and other resources are indispensable for effective methadone maintenance, in order to be safe and cost effective.

(5) Professional and public perception of substitution therapy

Patients in methadone maintenance are in contact with a number of social agencies, with medical services, with employers, family and relatives, whose acceptance of substitution therapy will have an impact on its efficacy and safety. Adequate methadone maintenance is not feasible where this acceptance is not present.

(6) Ability to attract and retain opiate dependent persons in comparison with other treatment and rehabilitation modalities

Maintenance programmes using methadone have proved to be attractive to many users and have contributed to improving the rates of retention of subjects in treatment in a number of settings. This is due to programme characteristics, not only to the characteristics of methadone. As with other treatment modalities, attractiveness as well as effectiveness should be monitored.

(7) Side effects and safety

The use of methadone in maintenance programmes has its certain specific risks. These include risks of diversion of supplies to the illicit market, and problems associated with iatrogenic overdose. Such risks should be minimized by specific safeguards (e.g. controlled methadone intake, restrictive handing-out practice, urine analysis, etc.). Other problems associated with additional opiate use or poly-drug abuse are also relevant, but not specific to methadone maintenance.

(8) Specific outcome indicators

Methadone maintenance programmes have been found to be useful in improving working capacity of patients, in reducing drug related delinquency, in stabilizing drug-free social contacts and in reducing risk taking behaviour concerning HIV infection. Comprehensive programming, adequate ancillary services and adequate counselling are main factors responsible for desirable outcome. Monitoring outcome is important in order to be able to determine the long-term efficacy of existing maintenance programmes.

(9) Conformity with national legislation and international treaties

Methadone maintenance is compatible with international treaties, but in a few countries incompatible with national legislation.

VI. CHOICE OF TREATMENT OPTIONS: FACTORS RELATING TO HIV PREVENTION AMONG DRUG ABUSERS

The factors listed here should be considered in relation to those described in the two previous sections.

(1) Ability to induce change of knowledge and attitudes in opioid dependent persons

All treatment modalities have a chance to induce change of knowledge and attitudes concerning HIV infection, provided the therapeutic personnel is sufficiently trained for counselling. In assessing the potential usefulness of an approach using methadone, therefore, it will be important to consider whether it provides any opportunities for introducing preventive interventions with respect to health education to reduce HIV infection rates among IDUs and their sexual partners.

(2) Ability to induce change in HIV risk taking behaviour

Again, all treatment modalities have a chance to induce such change on the basis of a good therapeutic relationship. The effectiveness of programmes should be monitored. Targets for change may include:

drug injecting
 sharing of injection equipment
 unsafe sexual practices including prostitution
 perinatal transmission
 other sexually transmitted diseases,
 both as a surrogate marker and as a risk factor for HIV transmission.

A factor to be taken into account in selecting methadone as a treatment approach will be its potential for enhancing opportunities to promote such behaviour change.

- (3) Ability to reduce incidence of HIV infection and spread of other infections including other retroviral infections

Lowering the incidence of HIV infection in those persons engaged in treatment is one important criterion of a programme's ability to slow down the spread of HIV infection. A few studies on patients engaged in methadone maintenance indicate that maintenance can be effective in this respect. Systematic monitoring, based on routine data and longitudinal studies is needed urgently.

As far as present knowledge goes, in the domain of all the above mentioned criteria, best results are obtained in well structured comprehensive programmes when it comes to methadone maintenance. In low-threshold (low-intensity) programmes there is hope for eventual change by initiating a process which will eventually lead to further steps of a healthier and less risky life-style. It is still open for further study to ascertain the relative efficacy of such programmes.

VII. THE TASKS AHEAD

This report looks at substitution therapy, exemplified by methadone maintenance, in the treatment and management of opioid dependence. Experience and research regarding methadone maintenance now spans a quarter of a century. However, the existing methadone research literature relates to the pre-AIDS era and new objectives must now be added, since the present state of knowledge about the effectiveness of methadone maintenance in the prevention of HIV transmission is extremely limited. It is, therefore, essential that a comprehensive research agenda be drawn up to investigate the role and effectiveness of methadone maintenance. The establishment of this agenda should have a high priority.

Methadone research to date has focused on promotion of abstinence or reduction in consumption of illicit drugs, improvement in physical and psychological health, and a reduction in criminality and other aspects of social rehabilitation. The literature dealing with methadone maintenance is copious but on many important questions, and especially with regard to evaluation, the existence of conflicting methodologies prevents categorical conclusions being drawn. There is therefore a pressing need to review evidence in this area more systematically. The lack of uniformity in the measurement of pretreatment and outcome variables complicates the assessment of existing evidence. It is unlikely that broad agreement on an hierarchy of objectives for drug treatment will be achieved and clearly one of the important tasks is the attempt to develop a more uniform approach to methodology.

The paucity of data on substitution drugs other than methadone will be of principal concern in developing countries where such drugs are used extensively. A subsequent report in this series will be prepared to remedy this deficiency.

Therapeutic communities which take advantage of local cultural and religious frameworks may be of considerable benefit to developing countries. Economic factors can not be ignored and are likely to become of even greater importance as pressure on the health dollar continues to grow. Estimates of the cost of a variety of treatment options will need to be made in the context of best and most case scenario impact projections.

It is likely that methadone will remain the major substitution drug for some time but there may be benefits from having a range of pharmacotherapeutical agents to choose from, especially if these reduce the costs of treatment (including dispensing). The increasing

international abuse of psychostimulants, including the injection of amphetamines and cocaine, cannot be ignored in regard to the potential for further dissemination of HIV infection. Cocaine is frequently self-administered by ten or more intravenous injections in one "run" over several hours with great risk of sharing of injection equipment. The development of effective treatment approaches, including specific pharmaceutical agents, must be considered a high priority.

A major task for the future will be the conceptual shift required so that treatment services are also seen as prevention services. In part this will be required as the emphasis on demand reduction increases.

Specifically with respect to the prevention of HIV transmission, the agenda could include evaluation of the combination of strategies such as needle and syringe exchange with methadone maintenance to determine the costs and benefits of such schemes. Some research questions will be of an essentially practical nature such as a comparative analysis of sero-conversion rates among patients maintained on methadone as compared to other groups of patients, or the evaluation of attempts to reduce the prevalence of sexually transmitted disease in methadone maintenance patients as STDs have been shown to be a risk factor in HIV sexual transmission. These studies will be required because of the need to complement existing objectives within HIV prevention.

VIII. CONCLUSIONS

The purpose of this meeting was to review the role of methadone as a substitution drug for the treatment and management of opioid dependence. More data are available for methadone than any other substitution drug though there are problems and omissions in the literature that highlight the need for further research on this important issue. Other forms of substitution therapy are used particularly in developing countries and a subsequent report is required to evaluate substitution drugs other than methadone.

This meeting reviewed the experience with methadone in countries drawn from four continents. Options for treatment and factors related to the choice of options were discussed and areas for future research were presented. Although much is known regarding the effect of methadone maintenance on individuals, little is known about the effect of this treatment on communities. The ethical aspects of methadone maintenance remain controversial.

The meeting took place in the context of the pandemic of HIV infection which has already resulted in substantial proportions of IDUs becoming infected in Europe, America and parts of Asia. An important task is to prevent HIV infection from spreading further to uninfected IDU and new recruits to drug use. Individual countries will need to consider the importance of containing HIV infection and preventing the spread of further drug use in the context of the size of their IDU population and the prevalence of HIV infection. Methadone maintenance can be a valuable treatment option and should therefore be considered as one of the range of services potentially contributing to the containment of HIV infection.

The possibility of protracted methadone maintenance may be an unappealing notion for some health professionals and policy planners. Nevertheless, this option may be preferable to cessation of treatment in light of the range of health consequences of relapse, including those associated with the risk of HIV infection. Health policy planners will need to balance the requirement for increased duration of treatment for individual IDUs with the need on public health grounds to provide equity of health care delivery.

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