COUNCIL ON MENTAL HEALTH

REPORT ON NARCOTIC ADDICTION

The following article is the first of three parts of the report on narcotic addiction developed by the Council on Mental Health in conjunction with its Committee on Narcotic Addiction on request of the Board of Trustees of the American Medical Association, who, after some preliminary study, had specifically referred the matter to this Council for examination.

The report represents a continuing study of the problem over a period of two and one-half years, during which time meetings were held by the Council and its Committee on Narcotic Addiction with experts in the field representing the federal government agencies responsible for narcotic control, police officials concerned with the problem, representatives of the New York Academy of Medicine who have given considerable thought and time to the study of this problem, a specifically interested member of the American Bar Association, and interested physicians in private practice.

The general feeling of the Council members, as expressed in the report, has been that narcotic addiction should be viewed, much more than it has been in the past, as an illness and that there should be a progressive movement in the direction of treating addiction medically rather than punitively. It is pointed out in the report that the problem of narcotic addiction in Great Britain is considerably less, percentagewise, than it is in the United States and the associated fact that in Great Britain the approach to the narcotic addict is a much more medically orientated one.

This report was first presented to the Board of Trustees at the midwinter meeting in November, 1956, in Seattle, and subsequently referred to the House of Delegates and its Reference Committee on Hygiene, Public Health, and Industrial Health at the Annual Meeting of the Association in New York City in June, 1957. On the recommendation of the Reference Committee, the report was adopted at that time by the House of Delegates.

RICHARD J. PLUNKETT, M.D., *Secretary.*

At the meeting of the American Medical Association in San Francisco in June, 1954, Dr. Andrew A. Eggston of the New York state delegation submitted a resolution which proposed that the American Medical Association favor the legalization of distribution of narcotics to addicts, under the following safeguards: (1) establishment of narcotic clinics in cities where needed, under the aegis of the Federal Bureau of Narcotics; (2) registration and fingerprinting of narcotic addicts; (3) keeping of accurate records; (4) administering optimal doses at regular intervals to addicts at cost, or free; (5) prevention of self-administration; (6) attempt cures through voluntary hospitalization, if possible; and (7) avoidance of forceful confinement.

This resolution was referred to the Reference Committee on Hygiene, Public Health, and Industrial Health. The Reference Committee, because of the complexity of the problems involved, thought the matter should be referred to the Board of Trustees for further reference to an appropriate group of experts for detailed consideration, the results of such studies to be reported at a subsequent meeting of the House of Delegates.

The Board of Trustees referred the resolution to the Council on Pharmacy and Chemistry for detailed consideration. The Council reported as follows: "The Council, following consultation with several individuals and groups active in this field, agrees that the narcotic problem has increased in seriousness since the close of World War II. The means of alleviating the problem, as suggested by the resolution, was extensively tried during the period following the end of World War I. Experience with these clinics clearly indicated that they were an absolute failure and that they increased rather than diminished the problem. The evidence on this point was so clear that those who had originally advocated them were convinced, and all of the clinics were closed within a few years. However, the Council feels that the present situation is far from satisfactory and that the problem is being handled too exclusively as a police problem without sufficient emphasis on its most important medical aspects." The Board of Trustees, however, after considering the report of the Council on Pharmacy and Chemistry as well as pertinent material from the National Research Council and the Commissioner of Narcotics, believed that the matter should be thoroughly explored, and referred the problem to the Council on Mental Health.

The Council on Mental Health established a Committee on Narcotic Addiction in April, 1955. In accordance with the directive of the Board of Trus-

tees, this Committee has reviewed such material as is available concerning operation of the clinics which dispensed narcotics during the period 1919-1923. It has studied proposals for legal dispensing of narcotics to addicts which have appeared in popular magazines,[1] legal journals,[2] and medical journals.[3] It has conferred with persons with expert knowledge of the medical, social, and legal aspects of addiction. It has, in conjunction with the Council on Mental Health, studied testimony and statements of persons holding various views on the question. Information gained from these sources is embodied in the substance of the reports below. It has reviewed the voluminous material contained in the reports of the subcommittee on the improvement of the Federal Criminal Code, U. S. Senate,[4] and reports of the Subcommittee on Narcotics of the House of Representatives.[5]

Review of the Operation of Narcotic "Clinics" Between 1919 and 1923

Assessment of the operations of the narcotic dispensaries between 1919 and 1923 is difficult because of the paucity of published material. Much of the small amount of data that is available is not sufficiently objective to be of great value in formulating any clear-cut opinion of the purpose of the clinics, the way in which they operated, or the results attained. The following account of the clinics must, therefore, be read in light of the deficiencies of the material on which it is based.

The narcotic dispensaries which were operated by states and municipalities between 1919 and 1923 [6a] were set up to meet a purported emergency [6] created by a Supreme Court decision which held that dispensing of narcotics to an addict merely for the purpose of gratifying his addiction was not proper professional practice and, therefore, illegal under the Harrison Narcotic Law. Many of the physicians who had been prescribing for addiction ceased to do so, and addicts in some states and municipalities applied to Boards of Health for relief. Some clinics were established at the suggestion of the Treasury Department agents. Approximately 44 clinics or dispensories [7] were established in various cities. Some of these operated for only a few weeks, others for as long as four years. On the whole, the clinics seemed to have no purpose other than the dispensing of drugs to addicts in order to prevent exploitation of the patients by drug peddlers and other unscrupulous purveyors of drugs. In some instances the clinics dispensed cocaine as well as opiates. The directors of some clinics stated that they were not attempting to cure the patients of their addiction.[8] In all instances, it was eventually found necessary to give drugs to addicts for self-administration. It is also alleged that, in some clinics, physicians were well remunerated for doing relatively little work other than writing prescriptions.[6e] It also seems that the clinics functioned with meager facilities and with small staffs.

There were some exceptions to the over-all lack of direction and purpose in the clinics. The clinic which functioned in Shreveport, La., is said to have required addicts to register in the clinic and to obtain employment before drugs were dispensed.[6a] The objective of the Shreveport clinic was to prevent exploitation of the addict. The New Orleans clinic did not register its addicts and the director of the clinic [6c] states that drugs were dispensed with no idea of the addicts being cured; rather, drugs were dispensed to prevent exploitation of the addict. The clinic which was operated in New York City by the New York Board of Health deserves special comment. Originally this clinic was set up as an emergency measure to care for addicts who could no longer obtain drugs from "trafficking" physicians, in anticipation of a panic which was expected to occur following the decision of the Supreme Court.[6b] According to a physician closely connected with the clinic,[9] the emergency did not eventuate, and later the purpose of the clinic was altered.[6d] It served as a means of bringing the addict into the open, furnishing him drugs so that he could obtain employment, of beginning rehabilitation, and of reducing the amount of the drug, preparatory to hospitalization in the institution operated on North Brothers Island, New York City.[10] Seventeen hundred of the 7,400 addicts registered in the New York City clinic finally went to the island for withdrawal, although the New York clinic was operated for a period of only 10 months.[2]

A number of beneficial results are claimed to have resulted from operation of the clinics. They were supposed to have brought the addict out of hiding and made him accessible to examination and to efforts at rehabilitation. They were supposed to have stopped the peddling of drugs, enable addicts to give up criminal activities, to obtain employment, to support their families, and in the case of the New York clinic they prepared some addicts for hospitalization and withdrawal.

It is, however, impossible to evaluate these claims of benefits from the clinics. There was a complete lack of any objective criteria of success or failure. Data on the number of addicts who did obtain employment and become self-supporting while receiving drugs from the clinics are not available. Furthermore, the shortness of the period during which the clinics operated would preclude any real assessment of the results.

Opponents of the clinics claim that they actually achieved no good results; only detrimental ones.[11] They state that some of the drugs given to persons registered in the clinic were diverted to individuals who were not clients of the clinics.[12] It is claimed

that the clinics caused concentrations of addicts in the cities having clinics, with consequent increase in crime of various sorts.[13] It is further asserted that peddling of narcotics was not eliminated, but actually increased.[13] It is also stated that the clinics failed to "cure" addicts.

Claims for these detrimental results from the clinics, while difficult to evaluate, are somewhat better documented than are the claims of beneficial results. Some of the claims, such as those related to increased incidence of crime and drug traffic, seemed to be based largely on opinions of police officers. However, actual instances of definite abuse and diversions of narcotics are cited [11] and well substantiated by both physicians and law enforcement officers. It is, however, impossible to evaluate the extent of these abuses. There are no quantitative statements on the number of addicts found diverting narcotics obtained from the clinics to other persons. There are no quantitative statements on the number of addicts who were apprehended for crimes while receiving drugs from the clinics, etc.

Reasons for closing the clinics are obscure. Terry and Pellens [6a] imply that the clinics were closed because of pressure from law enforcement officers before they had a chance to develop more definitive programs. Law enforcement officers, on the other hand, claim that the clinics were closed as a result of local public pressures, including that arising from the medical profession. Actually, it does appear that the medical profession played a decisive role in shutting down the clinics. In 1920, Hubbard,[6d] a physician who was connected with the New York City Narcotic Clinic, wrote as follows: "The public narcotic clinic is a new thing; in fact, there are only a few in existence and, if we may judge from our experience, they are not desirable and do not satisfactorily deal with the problem. We have given the clinic a careful and fair, as well as a lengthy, trial and we honestly believe it is unwise to maintain it longer."

"The clinic has been found to possess all the objectionable features characteristic of the so-called 'ambulatory' treatment as practiced by the trafficking physicians, except one; the financial profit to a few physicians (about one-half of one per cent of the doctors in this city) performing this character of service."

Hubbard continued: "Treatment of the narcotic drug addict by private physicians prescribing and druggists dispensing, while the individual is going about, is wrong. The giving of the narcotic drug into the possession of an addict for self administration should be forbidden. Until this is done by law, all honorable physicians should aid in stopping this vicious practice." Hubbard repeated these opinions in an article which appeared in THE JOURNAL later during the same year.[6e] It should be noted that the New York City clinic was closed before federal agents began their investigations of clinics. Closure of this clinic definitely seems to have resulted from decisions on the part of the medical profession.

Apparently as a result of the experience gained in the New York clinics, a resolution was introduced at the meeting of the New York State Medical Association in 1920 condemning ambulatory treatment of addiction either by the private physician or by clinics. This resolution was adopted.

At the meeting of the House of Delegates of the American Medical Association in New Orleans in 1920, the American Medical Association's Committee on the Narcotic Drug Situation in the United States [14] recommended as follows: "That ambulatory treatment of drug addiction, as far as it relates to prescribing and dispensing of narcotic drugs to addicts for self administration at their convenience, be emphatically condemned."

In 1920 and 1921, the Committee on Narcotic Drugs of the Council on Health and Public Instruction of the American Medical Association made further investigations, and in June, 1921, made a recommendation [15] which appears to have been extremely influential in molding medical opinion. This recommendation read as follows: "No. 8. Your Committee desires to place on record its firm conviction that any method of treatment for narcotic drug addiction, whether private, institutional, official, or governmental, which permits the addicted person to dose himself with the habit-forming narcotic drugs placed in his hands for self administration, is an unsatisfactory treatment of addiction, begets deception, extends the abuse of habit-forming narcotic drugs, and causes an increase in crime. Therefore, your Committee recommends that the American Medical Association *urge both federal and state governments to exert their full powers and authority to put an end to all manner of so-called ambulatory methods of treatment of narcotic drug addiction, whether practiced by the private physician or by the so-called 'narcotic clinic' or dispensary.*" At the meeting of the American Medical Association in 1924, this resolution was adopted by the House of Delegates and, therefore, became the official policy of the American Medical Association. In October, 1921, apparently in response to the recommendations contained in this resolution, the Treasury Department issued a leaflet for the information of physicians which contained a statement of policy unqualifiably condemning ambulatory treatment of addiction, and in two years all of the remaining narcotic dispensaries were closed.

The committee on Narcotic Drugs of the Council on Health and Public Instruction of the A. M. A. was charged with visiting the Attorney General [15]

and conferring with him as to the practicability of obtaining decisions from the United States Supreme Court which would remove existing uncertainties as to the meaning and applications of the Harrison Narcotic Act with reference to the terms: "in the course of his professional practice only" and "prescription." The committee called on the Attorney General, who agreed to prepare a case by which it was hoped that a definition of medical practice would be reached which would make clear the purpose and intent of the Harrison Act in such a way as not to interfere with the proper use of narcotic drugs in the legitimate practice of medicine, but equally not to permit the supplying of narcotic drugs to addicts even under the guise of medical treatment to cure addiction. In this connection, the committee also called upon the director of the Narcotic Field Force of the Bureau of Internal Revenue, Treasury Department, and transmitted to him the opinion of the Council on Health and Public Instruction to the effect that the medical profession ". . . emphatically condemns the practice of distribution of habit-forming narcotic drugs to addicts, in the course of their treatment for addiction, in such a manner that the addicts administer the drugs to themselves. Briefly, the so-called ambulatory treatment of addicts was condemned, whether practiced by the private physician or public institution such as the so-called 'narcotic clinic' and the director was urged to make use of the full powers of the Internal Revenue Bureau under the law to put an end to this practice."

It is certainly safe to assume that this visit by the Committee on Narcotic Drugs must have been very influential in causing the Secretary of the Treasury to instruct the Narcotic Field Force to close the clinics. It also appears that the Attorney General brought up the Behrman case before the Supreme Court in order to clarify the intent of the narcotic law. In this case, Dr. Behrman, who had issued prescriptions for large amounts of opiates and cocaine to known addicts, was charged merely with prescribing these drugs without any supervision as to manner or time of taking the drugs, or whether the drugs were ever taken by the addict at all. His good faith in the treatment of addiction was not questioned.[2] The Attorney General asked the court ". . . to hold that, irrespective of the physician's intent or belief, the Act is violated where drugs are placed by him in the sole control and subject to the unrestricted disposal of the drug addict." The Supreme Court sustained the government's position and this decision has since been repeatedly quoted as the basis for the Bureau of Narcotics' regulation that a physician may not prescribe narcotics to an addict merely for the purpose of "gratifying" his addiction.

Why did the Committee on Narcotic Drugs bring in such a strongly worded resolution? Why did it urge the director of the Narcotic Field Force to close the clinics? Because of the passage of time we, of course, cannot be sure. It certainly is unthinkable that a committee of the American Medical Association was supinely yielding to pressure from law enforcement agencies. From some of the writings of the time, we may infer that the committee was influenced by a belief that opiates and narcotic addiction per se caused deterioration in morals and character. One of the members of the committee [16] in 1921 wrote as follows: "The vice that causes degeneration of the moral sense and spreads through social contact readily infects the entire community, saps its moral fiber and contaminates the individual members one after another, like the rotten apple in a barrel of sound ones."

Indignation about the activities of "script doctors" (physicians who exploited addicts for profit) also played a role. In the article of Prentice [16] the following statement is found: "The shallow pretense that drug addiction is a disease which the specialist must be allowed to 'treat', which pretended treatment consists in supplying its victims with the drug that has caused their physical and moral debauchery, and that the regular physician, because lacking in their familiarity with the addicts, his habits, desires, and emotions, is therefore incompetent to assume his proper treatment, has been asserted and urged in volumes of literature by the self-styled specialists."

The author continued: "In the parlance of that underworld, where the narcotic addict finds congenial atmosphere, there exists a swift and secret means of communication—a sort of free masonry of their kind—by means of which the script doctors in a community are well known and accessible to all the addicts' fraternity. These doctors, having a monopoly of first-hand knowledge of the drug addict, his habits, sufferings, emotions and desires, whose heart bleeds in sympathy for the addict with his intolerable craving (for often it appears that the "doc" himself is addicted to the "dope"), whose defense of the business of supplying them with drugs is ever ready, suave and plausible, and whose business sense and greed for money is the creed of their professional practice—these are the "script doctors" invariably patronized by the addict, not because he had need for the advice or skill of the physician, but solely because he knows that the "doc" will give him his "script," or the "dope" itself, in whatever amount he says he needs. The drug thus "lawfully" obtained from a familiar druggist, of full weight and pure quality, at about 7 cents for a grain, can then be self administered at his convenience, or shared with a needy friend, or sold in the street-peddling trade at a sufficient profit to finance his next visit to the "script doctor's office." Prentice concludes: ". . . a physician who supplies narcotic drugs to an addict, knowing him to be an

addict, or who connives with or condones such an act, is either grossly ignorant or deliberately convicts himself as one of those who would exploit the miserable creatures of the addict world for sordid gain. It may be that he is himself addicted to the drug and has thus become a victim of its power to produce such profound moral perversion. For such there can be but one verdict—suspend or revoke his license to practice medicine, by all means."

This obvious indignation concerning the activities of a few unscrupulous physicians may have been projected on to the clinics, especially, since it is stated that some physicians who worked in the clinics made large incomes for nothing more than writing prescriptions.[3a]

Another factor which may have impressed the committee in 1920 and 1921 was evidence that the "epidemic of adolescent addiction" which occurred after the end of World War I seemed to be declining as a result of rigid enforcement of the narcotic laws.

Present Status of Addiction in the United States

Before attempting to consider the workability of the proposals for legal dispensing of narcotics to addicts, a brief review of present knowledge concerning addiction in the United States seems necessary.

Incidence.—The proponents of the clinic plans claim, with some justice, that the incidence of addiction in the United States is unknown. Under current social conditions, addiction is a hidden, secret practice. Addicts are violating the law and naturally wish to conceal their addiction. They are, therefore, difficult to count and accurate estimates are actually impossible. There are, however, indexes which probably reflect trends. One such index is the number of persons discovered to be addicts in the course of examinations for selective service. During World War I this rate was reported to be approximately one in 1,500 draftees.[17] During World War II the rate was said to be roughly one in 10,000 draftees,[17] indicating a considerable decline in addiction between the two wars. The rate currently being found in selective service examinations is not known. Another index consists of the number of arrests and conviction on narcotic charges. This rate was high in the 1920's and early 30's, gradually declined, and reached an all-time low during the war years, 1939 to 1945. This low point coincides with World War II when the underworld was effectively shut off from the traditional sources of narcotics by control of shipping, inability to travel between countries, and purchase of all available narcotic stocks by the warring powers. In 1946 increase in the number of arrests and convictions began, reaching a peak in 1952.[11a] Since that time the rate has been stable or falling. An effort has been made by a committee consisting of representatives of the U. S. Departments of Treasury, Justice, Health, Education, and Welfare, State, and Defense, to tabulate all arrests, both state and federal, for violations of the narcotic laws.[17a] Names of individuals arrested and convicted are sent to the Bureau of Narcotics and constitute a list of persons who are presumed to be or to have been addicted. Provision is made for elimination of duplications. This count, which has been going on for over two years, contained as of April, 1955, the names of 28,000 persons.[18] The Commissioner of Narcotics [4a] estimates that there was one addict in every 400 persons in the United States prior to the passage of the Harrison Act. Currently, he estimates that the rate is about one addict in 3,000 persons. These estimates, of course, tend to reveal a reduced incidence of addiction but their validity can be questioned.

The list of known addicts, currently being compiled by the Bureau of Narcotics, may prove helpful. In 1953 arrests by both federal and local authorities [17a] totaled 23,627. In 1954 there were 19,489 arrests, a drop of 17% from the previous year. Figures for 1955 are not yet available. Addiction is localized chiefly to large urban centers. The areas with the largest numbers of arrests are New York, Illinois, California, Michigan, District of Columbia, Ohio, and Texas. The number of addicts in many states is quite low. Even within a given state, foci of addiction are localized in certain cities. Cities with the highest concentrations of addicts include New York, Chicago, Washington, D. C., and Los Angeles. While statistics suggest that the problem may be declining in the United States as a whole, it still remains acute in certain cities. Javits [19] presents data showing that arrests on charges of selling or processing narcotics in New York City were 20% greater in 1954 than in 1951. Arrests of persons under 21 on narcotic charges in New York increased 30% in 1954 as compared with 1953.

Sociological studies in Chicago,[20] Detroit,[21] and New York [22] reveal, further, that addiction is concentrated in relatively small areas of those cities. These studies indicate that currently most addicts are Negroes and persons of Puerto Rican descent.

Probably the chief reason for the great alarm manifest concerning addiction is the belief that a large proportion of addicts currently are persons under 21 years of age. Inspection of some of the data on this point is informative. Tabulations of the President's Interdepartmental Committee [23] show that only 13% of persons arrested on narcotics charges in 1953 and 1954 were less than 21 years of age and that only 1.1% were less than 18 years of age. On the other hand, sociological studies in Chicago [20] estimate that the increase in drug users in Chicago had occurred principally in teenagers and young adults. According to this study, about one-

third of the estimated 5,000 drug users in Chicago in 1952 were under 21. Between Jan. 1, 1949, and Oct. 31, 1952, 1,844 new cases of drug use in males under 21 years of age were listed in the courts and hospitals of New York City.[22] In interpreting the figures from New York and Chicago it must be kept in mind that these are cities of high incidence of addiction and do not reflect the situation in the United States as a whole. Though the data indicate that addiction in younger persons is a problem, they do not seem to justify the degree of alarm that has arisen. Moreover, it is not a new phenomenon.[24] A similar alleged increase in "adolescent addiction" followed World War I, and at that time was responsible for great disquiet. In 1920 Hubbard [6d] found that 9% of 7,464 addicts in New York City were between 15 and 19 years of age. In a statistical study of 1,036 admissions of addicts to the U. S. PHS at Lexington in 1936 and 1937, Pescor [25] found that 16.5% of the patients stated that they began use of narcotics at age 19 or less.

Etiology of Addiction.—The etiology of addiction is regarded by most authorities as being multifactorial.[26] Socioeconomic, psychiatric, and pharmacological factors all play important roles. The importance of these various factors may vary from individual to individual. Furthermore, various factors affect each other.

Socioeconomic Factors.—Socioeconomic factors associated with addiction have been studied extensively in Chicago,[20] Detroit,[21] and New York City [22] and in British Columbia.[27] In Chicago the studies were carried out jointly by the Chicago Area Project and the Institute of Juvenile Research. In Detroit they were carried on by the Mayor's Committee. In New York they were carried on by the Institute for Human Relations of New York University. These two studies were concerned with addiction in young persons. In Vancouver the studies have been done by the Drug Addiction Project, University of British Columbia.

There is a remarkable agreement between these various studies in diverse locations. In all studies, addiction especially of youths is found to be largely confined to very limited areas of the cities involved. These areas are the poorest in the cities and are characterized by the lowest income, poorest housing, most unstable family structures, the highest delinquency rates, and, with the exception of Vancouver, which does not have a large Negro population, the areas have populations of predominantly Negro or Puerto Rican origin.[28] In such areas juvenile gangs ("street corner society") are prominent in the life of the boys.[20] The association between delinquency and addiction is stressed in these reports. No definitive socioeconomic information is available outside these few large cities.

Psychiatric Factors.—There is a general agreement among all students of addiction that addicts have personality aberrations and that these psychiatric conditions preceded and played an important role in the genesis of addiction, its maintenance, and the higher relapse rate after treatment [29] (note the possible relationship with socioeconomic factors, particularly unstable family structures, in the development of such personality disturbances).

The kinds of personality disturbances associated with addiction are chiefly character disorders, inadequate personalities, and neuroses. Gross psychotic disturbances are not common among addicts.[25] A small proportion of addicts definitely are the aggressive, antisocial, hedonistic individuals who were formerly termed "constitutional psychopaths." Such persons are sometimes referred to as "essential" criminals. Another group of addicts clearly consists of individuals who are neurotic. These persons suffer with anxiety, phobias, compulsions, obsessions, conversion symptoms, and so on. The majority of addicts, however, do not fall into clear-cut nosological entities, but rather present mixtures of traits of the kind found in neuroses, character disorders, and inadequate personalities. This is a general finding in addiction. Addiction is not a "pure culture" phenomenon; there are no "black and white" answers, but rather infinite shades of gray. Statements like "addicts are criminals," "addicts are not criminals but emotionally sick people" are not, without qualification, completely correct. Moreover, addiction is not a static but a constantly changing affair. There is a tendency to lay too much stress on descriptions of personalities of addicts which were written 20 to 40 years ago. At that time the "medical addict," the alcoholic, and the neurotic constituted a larger proportion of addicts than they do today. Currently, the immature, hedonistic, inadequate addict dominates the scene.

Pharmacological Factors.—Current concern about addiction is almost entirely limited to the opiates and similar drugs. Cocaine is seldom mentioned. Marihuana is feared chiefly as a factor predisposing to opiate addiction. The chief drug of addiction in the United States is heroin. Heroin is used because it is more potent than morphine and, therefore, more doses can be smuggled in less bulk. Heroin is easy to manufacture in clandestine laboratories, provided a source of opium or morphine is available. The drug is preferred over morphine by many addicts because of the rapid onset and greater intensity of effect. There is no scientific basis for the popular idea that heroin has special, sinister qualities in relation to crime, physical and mental deterioration, or moral degeneration. For example, in England where heroin has been manufactured and used in medical practice under proper conditions of control, incidence of addiction is less than it is in the

United States, where heroin is banned, and there has been no complaint about any special problem addiction caused by medical use of heroin.

Tolerance and Dependence.—Opiate addiction is frequently described as embracing two related phenomena—tolerance and dependence. Dependence is further subdivided into physical dependence and emotional or psychological dependence (habituation).

Tolerance is defined as a diminishing effect on the repetition of the same dose of the drug or, conversely, as a need to increase the dose in order to obtain the original degree of effect. Despite intensive research, the mechanism of tolerance is still unknown. The degree of tolerance which can be developed to the opiate drug seems almost boundless. Authentic cases have been recorded in which addicts took as much as 5 Gm. (78 grains) of morphine intravenously in less than 24 hours without incurring any untoward effects.[26a] Some facts about tolerance are important to the consideration of the "clinic" plans. Tolerance inevitably follows repeated administration of the opiates. It develops most intensively and in the highest degree when drugs are given on a regular schedule. Tolerance is manifested both by decrease in the intensity of the effect induced by a given dose of the drug and by decrease in the duration of observable action of the drug. If the dose of morphine the addict is taking is held constant for a period of weeks or months and the drugs are given at intervals of six hours, signs of mild abstinence ultimately appear four or five hours after each injection. This means that most patients receiving drugs in clinics would periodically wish to have their doses adjusted upward. What the final upper limit would be is unknown as are the physical effects of long-continued taking of large amounts of opiates.

Emotional dependence refers to the psychological meanings of the use of drugs and the effects of drugs. Psychological dependence is, of course, related to the effects opiates create within the central nervous system. These drugs have the peculiar property of depressing "primary" drives.[30] They diminish hunger, thirst, fear of pain, and sexual urges. They allay anxiety, create a sense of pleasant relaxation, freedom from worry, and enable the user to engage in fantasy. The development of physical dependence creates a new biological need, the satisfaction of which is directly pleasurable just as is the satisfaction of hunger or thirst. The addict tends to discard the usual methods of adaptation to life situations. Taking the drug often becomes the answer for all of life's problems. This creates a tendency to an indolent parasitic existence in many addicts which can be effectively countered by a high degree of motivation to work and to produce depending on the personality of the addict.

Physical dependence is defined as the development of an altered physiological state which is brought about by the repeated administration of the drug and which necessitates continued administration of the drug to prevent the appearance of the characteristic illness which is termed an abstinence syndrome. When an addict says that he has a habit, he means that he is physically dependent on a drug. When he says that one drug is habit-forming and another is not, he means that the first drug is one on which physical dependence can be developed and that the second is a drug on which physical dependence cannot be developed. Physical dependence is a real physiological disturbance. It is associated with the development of hyperexcitability in reflexes mediated through multineurone arcs. It can be induced in animals, it has been shown to occur in the paralyzed hind limbs of addicted chronic spinal dogs, and also has been produced in dogs whose cerebral cortex has been removed.[30a]

Physical dependence is important in that it tends to make chronic opiate intoxication continuous rather than intermittent. It forces the addict to seek his drugs by any and all means. The first concern of many addicts becomes obtaining and maintaining an adequate supply of drugs.

Although physical dependence on opiates is a real entity, the illness which follows withdrawal is not as severe as many persons believe. Even abrupt withdrawal seldom results in death in a person who has no serious complicating organic illness. The rate of recovery from the withdrawal illness is relatively rapid. The severe symptoms largely abate after three to seven days, but some physiological changes with mild symptoms persist for several months. It is not unusual for addicts to discontinue the use of drugs ("kick the habit on the street") without medical help.[31] Many addicts, while dreading drug deprivation, have no overwhelming fear of the withdrawal illness any more than the alcoholic has any great fear of the "hangover."

Why do addicts continue to take drugs? There are several ideas. The most common view is that addicts take drugs merely to prevent the appearance of the withdrawal illness. A less well-known, and possibly more accurate, idea is that the addict continues to take the drugs because he obtains direct positive pleasure from satisfaction of a new and artificial biological need.[30a] It seems most likely that a combination of both reasons is the most logical explanation. Many addicts strive to overcome tolerance and to recapture the initial sensations induced by the drugs. It should be noted that complete tolerance to the orgastic sensations produced by intravenous injection of drugs does not develop. This is one of the main reasons for the intravenous use of drugs.

References cited in text will appear at end of third article in the series.