Exhibit 2

A MANUAL ON DRUG DEPENDENCE

Compiled on the basis of reports of WHO expert groups and other WHO publications

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WORLD HEALTH ORGANIZATION
GENEVA
1975

persons take drugs, regardless of socioeconomic class, they tend to merge into subcultures that are involved in drug-taking.

A third new feature of the situation regarding drug-taking is that many adolescents and young adults appear to have little interest in the maintenance of the social *status quo*. Among them are students as well as young people who are less socially attached and often highly mobile. A substantial proportion have experimented with drugs and a much smaller proportion have become regular users. Many of them affect unconventional clothing and hairstyles, loosely characterized as "hippie" style. This general mode of dress has also become fashionable among a number of young persons who are seriously concerned with and have a stake in the maintenance and improvement of the current social system. Though many of these young persons may dress somewhat alike, they certainly do not think or act alike, nor do they all take drugs. Despite these important differences, not a few adults quite incorrectly impute recreational or regular drug-taking to all of them. The "problem" is often seen by such persons as solely or primarily one of drug-taking. On the other hand, an equally polar view is taken by certain adults, including professionally trained persons, who see the present non-medical use of dependence-producing drugs primarily as a symptom of the alienation and unconventionality of users.

Still another recent trend is towards multiple drug use by the same person. There has, of course, always been some multiple drug use, especially the sequential substitution of one drug for another when a preferred drug was unavailable. Simultaneous use of more than one drug is also not new; barbiturates have been used with alcohol to enhance the effect; cocaine has been taken with heroin or other opiates to complement or moderate the effect of one or the other. What is new is the large number of different types of dependence-producing drug used in sequence or simultaneously by many regular users. Drugs with differing effects are chosen according to the mood of the moment. In Sweden, for example, opiates dominated the picture before 1955, but their use was not extensive. In the early 1950s, the use of central nervous system (CNS) stimulants began to increase and the oral, and particularly the intravenous, use of these drugs became an especially serious problem in that country. In the early 1960s, marihuana and hashish made their appearance in increasing amounts, while hallucinogens and volatile solvents were added in the latter half of the decade. More recently, morphine-base has come into the picture. Hypnotics and sedatives are usually taken orally; CNS stimulants, orally or intravenously.

majority of persons who use them. The same may be said for cannabis preparations, particularly in areas where such use is socially tolerated or acceptable. Comparable use is also made of opium in some parts of the world where the manner, amount, and frequency of use are governed quite closely by local cultural conventions and *mores*. This is not the predominant pattern for the use of opium, and particularly opiates.

By drug-dependent persons

Biological phenomena, including those of a behavioural character, tend to range themselves in a continuum. This holds true for dependence on one or more dependence-producing drugs. At one end of the continuum psychic or physical dependence do not exist, whereas at the other end one or both clearly do. Between these extremes there is a zone of behaviour that is not sufficiently characteristic of either extreme to enable it to be said that dependence does or does not exist. In judging the presence or absence of psychic dependence in an individual, it is important to ascertain to what extent he (1) devotes his time and energy to thinking about, obtaining, and experiencing drug effects, and (2) tends to react to differing life situations and personal moods by almost automatically taking a drug rather than by responding in other possible ways.

There are a number of overlapping patterns in the use of drugs by drug-dependent persons. One involves the *regular* use of a particular drug several times a day for long periods. This pattern is perhaps most often seen in connexion with drugs capable of producing marked physical dependence (i.e., those of the opiate, barbiturate, and alcohol types). Such regular use is also sometimes seen among persons dependent on cannabis preparations or relatively modest doses of amphetamines taken orally.

Another pattern might be characterized as *episodic* or "spree" use. The duration of the episodes may range from a few hours to several days or even a week or two. All types of dependence-producing drug have been used in an episodic manner, but perhaps such use is most frequently encountered in connexion with drugs that produce little or no physical dependence (i.e., those of the amphetamine, cocaine, and hallucinogen types). This pattern is particularly prevalent in connexion with the intravenous use of central nervous system stimulants. The episodic use of alcohol is well known. Also, episodic use of one or more drugs may be superimposed on the regular use of the same or another drug.

Hallucinogen (LSD)-type drug dependence

Drugs of this type include lysergide (LSD), which is a semi-synthetic derivative of ergometrine ; psilocybin, an indole found in the sacred mushroom *Psilocybe mexicana (teonanácatl);* mescaline, the most active alkaloid present in the buttons of a small cactus, *Lophohora williamsii (mescal, peyotl);* and in the seeds of some varieties of morning glory or bindweed, especially *Rivea corymbosa* Hall f. and *Ipomoea violacea* L. *(ololiuqui),* active principles that are closely related to lysergide. The mushrooms, cactus buttons, and the morning glory seeds are used by certain American Indian tribes in religious ceremonies or are employed by the medicine men or women of these tribes in treating illnesses, usually in ritualistic fashion. Such religious and ritualistic use does not seem to lead frequently to drug dependence.

Aside from these local uses of hallucinogens, substances of this kind are used largely by those who have a more than usual interest in artistic and intellectual pursuits, whether or not they excel in those fields, and by others for "kicks" (i.e., changes in sensory perception, the development of hallucinations, etc.) and particularly to "expand the consciousness" and obtain "mystical insight". Such use is found mainly in the developed "western" countries. Some users seek an insight into their own emotional problems. Generally, the drugs are taken orally and in the company of other users. The ingestion of a single dose or of several doses over a period of 2—3 days is the customary pattern ; prolonged or continuous use is unusual. Periodic, rather than continuous, use is favoured by the rapid development and disappearance of tolerance and a lack of physical dependence on these drugs.

Drugs of the LSD type induce a state of excitation of the central nervous system and central autonomic hyperactivity manifested by changes in mood (usually euphoric, sometimes depressive), anxiety, distortion in sensory perception (chiefly visual), visual hallucinations, delusions, depersonalization, dilatation of the pupils, and increases in the body temperature and blood pressure.

Psychic dependence on drugs of the hallucinogen type varies greatly, but it is usually not intense. The users may enjoy the effects of these agents and may wish to repeat them, but if such agents are not readily available, these persons will either do without them or accept a substitute. A minority of users may develop strong psychic dependence on these substances. No evi-