

WORLD HEALTH ORGANIZATION
TECHNICAL REPORT SERIES

No. 42

EXPERT COMMITTEE ON
MENTAL HEALTH

Report on the First Session
of the
Alcoholism Subcommittee

Geneva, 11-16 December 1950

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WORLD HEALTH ORGANIZATION
PALAIS DES NATIONS
GENEVA
SEPTEMBER 1951

First impression, September 1951
Second impression, November 1953

EXPERT COMMITTEE ON MENTAL HEALTH

First Session of the Alcoholism Subcommittee

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The report on the first session of this subcommittee was originally issued in mimeographed form as document WHO/Ment/23, 2 February 1951.

* Unable to attend owing to illness.

EXPERT COMMITTEE ON MENTAL HEALTH

Report on the First Session of the Alcoholism Subcommittee¹

The Alcoholism Subcommittee of the Expert Committee on Mental Health held its first session in Geneva from 11 to 16 December 1950. The

¹ The Executive Board, at its eighth session, adopted the following resolution :

The Executive Board

1. NOTES the report, on its first session, of the Alcoholism Subcommittee of the Expert Committee on Mental Health;
2. THANKS the members of the subcommittee for their work;
3. AUTHORIZES publication of the report, and
4. RECOMMENDS its distribution;
5. REQUESTS the Director-General to base future programme proposals in this field on the general recommendations of this report, and to co-operate in any programme concerned with the social and legislative aspects of the problem of alcoholism which may be developed by the Social Commission and other organs of the United Nations;
6. AUTHORIZES the holding of a meeting of the Expert Committee on Drugs Liable to Produce Addiction, to be devoted to problems of alcohol, and requests the Director-General to make provision for a meeting of this committee in his budgetary proposals for 1953;
7. REQUESTS the Director-General to place on the agenda of this committee the matters referred to it by the Alcoholism Subcommittee of the Expert Committee on Mental Health, and other matters concerning the effect of alcohol on the physiological, psychomotor, and psychological reactions of the human being;
8. APPROVES the proposal for the meeting of a small working-group of experts on the statistical problems connected with alcoholism, prior to the next meeting on alcoholism to be held by the Expert Committee on Mental Health, within existing budgetary provisions;
9. REQUESTS the Director-General to circulate to governments the recommendations of the subcommittee regarding the use of Disulfiram (tetraethylthiuramdisulfide);
10. REQUESTS the Director-General to consider the possibility of publishing a classified bibliography on alcoholism, within the authorized publication programme of the Organization;
11. REQUESTS the Director-General to study the possibility of making available, to important libraries, sets of the Abstract Archive of the Alcohol Literature existing at Yale University, and to submit detailed proposals and budgetary estimates to the ninth session of the Executive Board for its consideration;
12. REQUESTS the Director-General to bear in mind the value of international courses and travelling study-groups on alcoholism when framing future proposals for the mental-health programme of the Organization; and
13. AUTHORIZES the holding of a second meeting on alcoholism by the Expert Committee on Mental Health in 1951, within the existing budgetary provision.

(Resolution EB8.R45, *Off. Rec. World Hlth Org.*

session was opened by Dr. Martha M. Eliot, Assistant Director-General, Department of Advisory Services.

1. General Considerations

The first point that the subcommittee wishes to emphasize in its report is the importance of alcoholism as a disease and a social problem. It appears to the members that this problem is one to the prevention and treatment of which public-health services could make extensive contributions. They feel, however, that at present in many countries the public-health authorities have been slow to recognize the extent and seriousness of the problem involved and the extent to which health workers could contribute to its prevention and treatment.

This, however, is not surprising; it is only within comparatively recent years that a medical and scientific outlook on the problem has developed which makes public-health action possible. The subcommittee was interested to note, for instance, the evident lack of such medical and scientific knowledge which prevented the League of Nations Health Committee from undertaking an active programme when it considered the matter at its thirteenth session in 1928.² There was at that time no differentiation between a medical and scientific outlook on the one hand and the approach of lay reform-groups on the other. Action against alcoholism was confused with political and social action against alcohol. It is probable that at that stage any attempt on the part of physicians and public-health workers to prevent and treat alcoholism failed largely because the public could not differentiate between the two approaches.

The subcommittee recognizes the value of legal or social measures related to the distribution and use of alcohol. Although the preparation of such legislation may be no part of the activities of public-health services, they have a duty to advise the authorities responsible for such legislation on the public-health aspects of the problem; but even more important is the recognition by public-health authorities that scientific knowledge on alcoholism now exists which enables a serious attempt at the medical prevention of alcoholism and the successful early treatment of individuals suffering from this disorder to be started.

The subcommittee's first recommendation, therefore, is that WHO should take all steps within its power to stimulate public-health services to undertake work on this problem and should be prepared to provide advisory, educational, and other services on this subject to such national health authorities as request them.

² League of Nations, Health Committee (1929) *Minutes of the thirteenth session*, Geneva, p. 16

2. Definition of the Problem

It is clear from the subcommittee's own discussions that one serious obstacle to international action in this field lies in the lack of a commonly accepted terminology. The term "chronic alcoholism", for instance, is used in a different sense in practically every country from which the members of the subcommittee are drawn. In its narrowest connotation it implies a state in which an individual, as a result of long-continued drinking, has sustained permanent organic damage or serious mental deterioration presumably dependent on such organic changes.

At the other end of the scale, in some countries it is used in a much broader sense to signify continued excessive drinking regardless of irreversible physical or psychic damage. It appears to the subcommittee, therefore, that, for international use, the term "chronic alcoholism" is liable to provoke confusion, since, although the subcommittee finds within its members a high degree of agreement about the clinical phenomena involved and the stages by which they develop, they are equally impressed by the misunderstandings which may arise from the international use for terms which have a different significance in different countries.

The general term "alcoholism" on the other hand appears to have a much more constant meaning in the countries in which this problem is of importance. In this report the subcommittee uses this term to signify any form of drinking which in its extent goes beyond the traditional and customary "dietary" use, or the ordinary compliance with the social drinking customs of the whole community concerned, irrespective of the etiological factors leading to such behaviour and irrespective also of the extent to which such etiological factors are dependent upon heredity, constitution, or acquired physiopathological and metabolic influences.³

From a clinical point of view, the subcommittee is agreed that the development of alcoholism (using the term in the sense defined above) may pass through a series of recognizable stages, each of which has a different significance both for prognosis and treatment.

In the first of these, which has aptly been described as "symptomatic drinking", alcohol is taken to deal with a current problem. The problem may be that of stress on the individual arising either from physical conditions, from psychological factors, or from social circumstances. The excessive drinking is used as an anodyne to enable the individual to face the current problem. It is important to realize that this may occur not only in individuals who have previously been unaccustomed to alcoholic beverages but also in those who have for many years taken alcoholic beverages in a moderate manner without deviating from the acceptable drinking

³ This broad ad hoc definition implies that alcohol addiction is regarded here as a special and extreme form of alcoholism.

patterns of the community in which they live. The use, however, of alcohol as a means of dealing with current stress, which we have termed above "symptomatic drinking", may well create further difficulties for the patient concerned. These difficulties again arise from physical symptoms, psychological factors, or social problems. As examples, one may quote anorexia due to gastritis, feelings of inferiority arising from behaviour while intoxicated, disturbances of personal relationships, or occupational ineffectiveness. It is at this stage that the patient who originally used alcohol in excess to ease a current stress now finds it necessary to use it also to mitigate the symptoms which the previous excessive use of alcohol has itself provoked. The anorexia of alcoholic gastritis, for instance, may be dealt with by the stimulating use of aperitifs. Alcohol may be used to overcome the individual's sense of social inferiority or, in the case of problems of social relationships or occupational ineffectiveness, to blunt the additional difficulties which these results of his previous drinking have created for the patient.

At this stage it is clear that a situation far more serious than "symptomatic drinking" has arisen. The patient is involved in a circular process whereby his excessive drinking creates additional problems for him which he can face only with the aid of further excessive drinking. The condition of true alcoholism has been established. In this second stage, in certain countries, the problem is referred to as that of "addictive drinking". In considering the use of this term the subcommittee has been interested to note the definition of drug addiction adopted by the Expert Committee on Drugs Liable to Produce Addiction in the report on its second session.⁴

At this stage, the subcommittee believes that a condition of addiction in terms of that definition may be said to exist with the reservation that point (2) (a tendency to increase the dose) is not necessarily present. It is uncertain whether or not the pharmacological concomitants of drug addiction exist in the sense of a profound modification of metabolism creating a physical dependence on the drug. This is a matter urgently demanding research and the subcommittee recommends that consideration should be given to the setting-up of a Subcommittee on Alcohol of the Expert Committee on Drugs Liable to Produce Addiction to consider this and other matters concerning alcohol (as opposed to alcoholism) which will be referred to later in this report.

⁴ "Drug addiction is a state of periodic or chronic intoxication, detrimental to the individual and to society, produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include:

- (1) an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means;
- (2) a tendency to increase the dose;
- (3) a psychic (psychological) and sometimes a physical dependence on the effects of the drug."

(*World Hlth Org. techn. Rep. Ser.* 1950, 21, 6)

The third stage in the development of alcoholism is the appearance of organic disease or psychic deterioration, e.g., the Korsakoff psychosis. In certain types of organic damage the appearance or non-appearance will depend to a considerable extent on factors other than the extent and length of excessive drinking, as in the case of delirium tremens. The development of polyneuropathy, for instance, can be completely prevented regardless of the extent of alcoholism by an adequate intake of vitamin B complex. Similar extraneous factors influence the appearance of cirrhosis of the liver. Certain complications will therefore be much more prone to occur in countries where nutritional deficiencies are common and where the medical treatment of acute intoxication is inadequate.

These three stages in the development of an individual case of the disorder of alcoholism are of considerable clinical significance. Current psychiatric practice suggests that in the first stage of symptomatic drinking it is in many cases possible to deal with the underlying cause which has provoked the symptom. If this is successfully done, the patient can resume moderate controlled drinking such as may have been his practice before the development of his alcoholic episode. In the second stage, however, which has been referred to as "addictive drinking", not only is the prognosis much more serious and the therapy more difficult, but the aim of the therapy itself must be modified. It must be recognized that such an individual cannot expect again to become a moderate drinker; the aim of the therapy must therefore be the achievement of complete abstinence. It is clear that some irreversible change in the individual has taken place, and it remains for further research to demonstrate the extent to which this irreversible change rests on psychological and physiopathological factors.

The indications of recent researches are that the so-called "addictive phase" of alcoholism may have a physical basis which may be of a constitutional nature. Since, however, the excessive "symptomatic" drinking which is a prerequisite of the "addictive phase" is psychogenic or sociogenic, or both, psychotherapy remains indispensable. Furthermore, while great advances have been made in the investigation of the physical basis of "uncontrolled drinking" (the addictive phase), the theories are still too little developed to warrant statements such as "the treatment of alcoholism is purely a problem of internal medicine". Such statements can lead only to a discrediting of efforts toward the rehabilitation of alcoholics, to the discouragement of their families from using the facilities at present available, and to the shattering of many hopes. But although it is not solely a medical problem, the main responsibility for leadership in the early treatment of alcoholism must rest with health workers.

Apart from the definition of the clinical stages of alcoholism, many other problems of definition arise. The term "tolerance", for instance,

is used in the scientific literature of alcoholism in many different senses. From the clinical point of view, it appears desirable to the subcommittee that the use of this term should be restricted to signify the relation between the amount of alcohol ingested and the effects produced upon the individual. In other words, tolerance describes the level of the threshold dose of alcohol for a given individual beyond which impairment of functional efficiency occurs. In this sense, therefore, the concept of tolerance falls within the field of pharmacology. Should the subcommittee's recommendation for the setting-up of an Alcohol Subcommittee of the Expert Committee on Drugs Liable to Produce Addiction be acted upon, it is recommended that this problem of tolerance to alcohol, in the sense in which the term is defined above, should be referred to this subcommittee for study.

One other term frequently used in the literature on alcoholism requires some discussion, namely, the term "cured". Once an individual sufferer from this disorder has passed the first stage of "symptomatic drinking" and entered that of "addictive drinking", as the subcommittee has stated above, he cannot expect to become again a moderate drinker. Therefore, once an alcoholic has reached this stage, "cure", in the strict sense of the word, is impossible; the aim of treatment at this stage is to arrest the condition by enabling the individual to remain permanently abstinent.

In assessing the efficacy of various forms of treatment, therefore, the proportion of patients able to remain abstinent for a predetermined period can be used as an index of the success of the treatment in arresting the condition, but such success should, in the opinion of the subcommittee, be referred to as a percentage of cases "successfully arrested" rather than "cured". In addition, the subcommittee feels that, in much of the literature on this subject, the criterion of "successfully arrested" is far too lax. This term should be used only for those patients who have been able to remain completely abstinent for several years. A scientific paper, which presents as "arrested" cases who are reported as continuing abstinent after such short periods as three or six months, cannot be considered a serious contribution to the literature. The most responsible workers on the other hand have tended to adopt very rigorous criteria and not to report cases as successfully arrested until the abstinence has continued for at least two or more years.

3. Extent and Nature of the Problem

The discussion of the experience of the various members of the subcommittee in their own country makes it apparent that to view alcoholism internationally brings to light aspects of the problem which the national observer within his own country would fail to see. One of these is the extreme variation in social drinking customs and habits in different

countries, in the types of beverages consumed, and in the average level of consumption in different populations. The average drinking patterns of the rural inhabitants of the wine-producing areas of France are completely different from those of the rural inhabitants of Bosnia where the only locally made alcoholic beverage is a spirit derived from plums.

There are considerable differences, too, between one country and another in the influence of social milieux on drinking habits. In some, urban life is associated with a higher rate of consumption; in others, the higher rate is to be found in rural communities. In some countries a higher alcohol consumption is to be found chiefly in the higher socio-economic groups; whereas in others consumption is at its highest at the lower end of the socio-economic scale. It is clear, therefore, that no easy generalizations can be made about drinking habits and alcohol consumption.

One must be equally cautious in making generalizations about the disorder of alcoholism. It cannot be assumed, for instance, that communities with a higher level of per capita alcohol consumption than others have necessarily a higher incidence of individuals suffering from alcoholism. Similarly, a change in the level of consumption of a community over a period of time is not necessarily accompanied by a change in a similar direction in the incidence of alcoholism in that community. As an example of this one may quote the fact that whereas the reduced production and consumption of alcoholic beverages in France between 1940 and 1945 was undoubtedly accompanied by a decrease in the incidence of chronic alcoholism with organic complications, in Denmark during the same period it is by no means certain that the decrease in overall consumption was accompanied by a decrease in the incidence of cases of alcoholism.

Considerations such as the above lead the subcommittee to place great emphasis on the need for the development within every country of national statistics on the incidence of alcoholism.

In an earlier section of the report the subcommittee set out the three clinical stages of the development of this disorder. It is evident that it is far easier to obtain accurate figures of the incidence of the terminal phase of the third stage, i.e., death by reason of chronic alcoholism, than it is to obtain accurate figures of the incidence of earlier stages of the disorder. The first step, therefore, in compiling such national statistics is an accurate assessment of the mortality caused by cirrhosis of the liver, and acute or chronic alcoholism with complications.

But although such statistics could be obtained with reasonable accuracy in many countries, they are not sufficient to indicate the extent of the problem. The next step must be to devise means of assessing the extent of morbidity caused by alcoholism accompanied by psychoses, neurological disorders, etc. The extent to which such statistics can be compiled will

vary considerably from one country to another. It will be dependent, for instance, upon the extent of the provision of treatment facilities for such conditions, on the possibility of obtaining statistical information through national sickness schemes, and on a variety of other factors.

The third step in the development of statistical information is the ascertainment of the numbers of addictive drinkers not yet showing irreversible organic damage. This is far more difficult to obtain. To a considerable extent it will depend upon the provision of treatment facilities for the alcoholic at the early stage of his disorder and may even involve special research and sampling studies if accurate information is to be obtained. It is clear that in a country in which a widespread social organization for the rehabilitation of the alcoholic has been developed, such as exists in Sweden, there is a far better opportunity of obtaining reasonably accurate information about the incidence of the earlier stages of alcoholism than can possibly be obtained in a country where treatment facilities are provided only for individuals in the advanced stages of the disorder.

Statistical information of this type is of such importance for the development of national public-health programmes for the prevention and treatment of alcoholism that the subcommittee strongly recommends that WHO should arrange a meeting between the very few experts who have studied the statistical problems of alcoholism in order that this subcommittee, at its next meeting, may have before it the results of the discussion of this problem by such a working group.

At present the fact must be faced that very few countries know even the extent of the problem created by the grossest forms of this disorder. Until other countries can assemble statistical information on this problem as comprehensive as that which is available in these few, they will be considerably handicapped in attacking this public-health problem.

The subcommittee has examined with interest the formula developed at Yale University by Dr. E. M. Jellinek which, on the basis of population, mortality statistics, and other data, enables reasonably accurate prediction to be made of the number of chronic alcoholics with complications likely to be found in the different States of the USA. This formula has, of course, been developed from the statistical examination of the problem in one limited part of the world alone and can therefore be expected to be valid only within that area. Nevertheless, it is interesting to note that, if the same formula is applied to certain other countries of the world, it appears to produce an estimate which approximates closely to that which has been made by other means within the country concerned. Since for so many countries no accurate figures of the incidence of alcoholism exist, the subcommittee has thought it of interest to set out in an annex ⁵ to this report

⁵ Annex 1, page 19.

estimates, produced by means of this formula, of the number of alcoholics with complications for different countries of the world. The subcommittee presents these figures, not because it is convinced that they are completely accurate, but because it believes they provide a useful approximation pending the development within the countries concerned of reliable statistics on the subject.

The subcommittee also attaches to its report ⁶ a summary of the principles involved in the Jellinek estimation formula so that experts in different countries may study the possibility of developing a formula of this type valid for their own population.

4. Treatment Facilities for Alcoholics

To a varying degree in the well-developed countries treatment facilities are provided for advanced cases of alcoholism and especially for those which show complications in the shape of permanent organic or psychological damage. The laws of certain countries provide means whereby the advanced alcoholic may be compelled to submit to treatment; in some countries such compulsion may be applied only if the alcoholic's behaviour has led to infractions of the penal code, and in other countries there is no possibility of compelling an alcoholic to submit to treatment unless his mental condition is one which brings him within the scope of the laws controlling the commitment of insane persons.

It is clear, however, that the community will not usually be prepared to compel an individual to submit to treatment until his disorder has become easily recognizable and, consequently, far advanced. In general, therefore, it may be said that legal compulsion alone, however desirable it may be to protect society from the alcoholic, can do little to bring to light cases of alcoholism in their earliest and therefore therapeutically more hopeful stages.

It is the firm opinion of the subcommittee that, to treat cases of alcoholism in their earliest stages, outpatient dispensary services are necessary and that such services can, in the early stages of the disorder, produce a high proportion of successful results. Such a dispensary is probably best situated in a well-equipped general hospital or alternatively may exist as an independent institution. It is very doubtful, however, whether it is ever desirable to associate an alcoholic dispensary for early cases with a psychiatric hospital predominantly concerned with the care of the psychoses, although there is clearly less objection to its being associated with the psychiatric service of a general hospital if such a service deals principally with acute and recoverable psychiatric conditions. Whatever the exact situation of

⁶ Annex 2, page 21.

the dispensary, it is essential for its success that it should have the orientation of a medical institution with all that is implied in a doctor/patient relationship. In this setting and with such early cases, successful ambulatory treatment is possible for a very high proportion of the cases; and the question of hospitalization need seldom enter into consideration.

It is not commonly realized that a dispensary service for alcoholics can be developed at a general hospital with the use of existing facilities at a very small cost, since, although the alcoholic dispensary is the point of focus in which both diagnosis and treatment are undertaken, many of the services upon which it draws exist already in the general hospital. A further advantage of the association of the alcoholic dispensary with the general hospital is the extent to which it is an educational factor influencing the staff of the hospital itself, and the attitude of the individual physician towards the alcoholic patient, by the opportunities it provides both for research and for teaching. For these reasons, the presence of the alcoholic dispensary in the general hospital provides considerable advantages. Such a clinic should preferably be run by a psychiatrist particularly interested in the treatment of early cases of alcoholism, but in the absence of such an individual it is clear that an interested general physician is more effective than a psychiatrist who is not specifically interested in the problem.

The work of such a dispensary will not be successful, however, unless the staff is capable of evoking the co-operation and support of all elements of the community in their work. Experience has shown that only a minority of the cases are referred to such dispensaries by physicians; but there are many other different potential referring agencies in the community which must be interested and educated in the role which the dispensary can play. These may include law-enforcement agencies, social agencies, community health workers such as public-health nurses, trade union officials, and ministers of religion.

At present many countries have found it necessary to set up special residential institutions for the treatment of alcoholics. The subcommittee believes that, if adequate networks of dispensary services at general hospitals are developed for the ambulatory treatment of alcoholism at its earliest stages, the need for special residential institutions for alcoholics will progressively diminish, since with the dispensary treatment of early cases good therapeutic results can be expected, and many of those cases which prove resistant to therapy at this early stage will prove to be those that fall at a later stage to be dealt with by the psychiatric services or the penal institutions.

Alongside the development of these early treatment services, public-health services can also assist in the improvement of the medical and scientific standards of the work carried on by the special residential institutions for the more advanced cases in the provision of which, in many

countries in the past, non-medical voluntary organizations have shown commendable enterprise at a time when the public-health services were taking no action to deal with the problem. Although it is clear that many such institutions for chronic cases can be directed successfully by non-medical workers, the subcommittee considers that such non-medical workers should be specially trained to understand the problems of alcoholism, and that their work should be carried on with medical supervision.

5. Means of Treatment

The first essential of the work of the alcoholic dispensary lies in a medical approach, namely, the approach to an individual's problem by the physician who offers aid without any implications of moral censure.

The diagnosis of the internal and external factors which appear to have provoked the problem and the handling of it both by the methods of psychotherapy and the methods of social work form the backbone of the approach of the dispensary. In recent years, however, there have been important pharmacological developments upon which the subcommittee feels it should comment. The one in which most interest has been shown is tetraethylthiuramdisulfide.⁷ It is sold under various proprietary names in different countries. An individual who is receiving a maintenance dose of this drug is unable to drink alcoholic beverages without suffering severe somatic reactions. Although its use is to some extent experimental, it is becoming clear that in the treatment of alcoholism by properly qualified physicians this drug is a valuable aid in well-chosen cases, i.e., cases without demonstrable liver or cardiac lesions or abnormalities, in whom there is a genuine and adequate motivation towards recovery. It must be remembered, however, that this is a powerful and dangerous drug. It should not be used by laymen. It should be available only to the medical profession, and should preferably be employed only on cases in which continued supervision is possible by physicians who are specifically experienced in handling the problems of alcoholism. Even with these precautions, it must be remembered that cases will from time to time occur in which a patient may be reduced to a serious condition of shock as a result of the taking of alcohol while under the influence of the drug.

The subcommittee is also agreed that with the more advanced cases of addictive drinking this pharmaceutical aid to the treatment of alcoholism, although still of value, is less successful. Where it fails, other techniques such as the various forms of "aversion" therapy (based on the

⁷ The subcommittee recommends that WHO should take action to secure agreement on a common name for this drug. At the second session of the Subcommittee on Non-Proprietary Names of the Expert Committee on the International Pharmacopoeia, the name "disulfiram" was chosen; this name was subsequently approved by the Executive Board at its eighth session (Resolution EB8.R42, *Off. Rec. World Hlth Org.* 36). — ED.

use of apomorphine or emetine) may be of more value. It is important to re-emphasize, however, that none of these pharmaceutical products is a "cure" for alcoholism. The basis of the treatment of the disorder remains primarily dependent on a general programme involving psychotherapy, skilled social work, and the resources of the general practice of medicine.

Recent advances in endocrinology appear likely to offer additional aids to the handling of some of the acute clinical problems of alcoholism. Adrenocorticotrophic hormone (ACTH) and cortisone have been reported to be of considerable value in cases of delirium tremens, acute alcoholic intoxication, and even Korsakoff psychosis. If these findings are confirmed by other workers, they will clearly be of great assistance in handling this type of alcoholic problem.

6. Education and Training

In very few countries are the physician, the nurse, or the medical social worker given any adequate education on the subject of alcoholism during their basic training. Even where this is attempted, training is usually of a didactic nature in the form of lectures. It is not surprising, therefore, that the bulk of the medical and nursing profession in most countries is ill-equipped to advise on the clinical problems of alcoholism. The compulsory inclusion of this subject in the curriculum of physicians, public-health nurses, and medical social workers is essential, and the establishment of alcoholic clinics in general hospitals (and especially in teaching hospitals) provides not only treatment for such patients, but the only form of teaching, namely clinical teaching, which will give to health workers a real understanding of the problem. Such clinics can also play an important educational role in the whole community which they serve and should undertake educational responsibilities both to professional groups outside medicine and to lay organizations within the community.

7. Scientific Information

Research on and treatment of alcoholism is at present much handicapped by the comparative isolation of most specialists working on this problem. WHO can make an important contribution by the preparation and publication of classified bibliographies of the literature. Another unfilled need of workers in this field is for a comprehensive and well-indexed system of abstracts. Although one such collection exists in the USA, there is no comprehensive collection in any other country. At comparatively small cost it would be possible for WHO to obtain and distribute to important centres duplicate sets of the collection maintained

by the *Quarterly Journal of Studies on Alcoholism*. The subcommittee strongly recommends that this should be done.

A further need is for an international organization to draw together all those who undertake scientific research on or treatment of alcoholism. No such organization at present exists. The subcommittee urges WHO to do all in its power to foster the creation of a technical non-governmental organization which would unite, at the international level, all professional and scientific societies interested in this problem and individual experts working in the field.

WHO could also assist in the spread of scientific information in various other ways. Several countries, for instance, are at present in the process of making plans for the prevention and treatment of alcoholism on a nation-wide scale, and would welcome a careful scrutiny by experts of the most progressive efforts in other countries. The subcommittee therefore recommends that WHO should sponsor a travelling study-group, consisting of experts professionally engaged in the various aspects of the handling of alcoholism, to study the most recent developments in early treatment and social control and to prepare for publication by WHO a comprehensive survey of these developments. Such a document would be invaluable to the health departments of many Members States of WHO. Moreover, the subcommittee recommends that WHO should collaborate in the holding of short courses lasting several weeks for individuals professionally concerned with the problems of alcoholism. This is an activity which might well be conducted in co-operation with the United Nations and the specialized agencies.

8. Voluntary Organizations

Although lay societies advocating abstinence have been active for many years, the founding of "Alcoholics Anonymous" in the USA created the prototype of an organization which differs markedly from the "temperance" societies as they had previously existed. The membership of Alcoholics Anonymous is restricted to alcoholics who have been able to become, or are attempting to become, abstinent. This society holds the view that an abstinent alcoholic is likely to be the individual most capable of helping another alcoholic to become abstinent, and secondly that the alcoholic's best hope of remaining abstinent lies in helping others to achieve that state.

Although experience of this movement is restricted to comparatively few countries outside the USA, many physicians engaged in the treatment of alcoholism who have had experience of its work consider it to be the most hopeful social development which has taken place in the handling

of this disorder. On the other hand, it has been questioned whether such an organization can be transplanted without modification to communities in which the culture pattern is very different from that in which it first arose. The question can be answered only by intelligent experimentation. What is clearly capable of being transferred to any other setting, however, is the attempt to evoke the interest of the alcoholic who has achieved abstinence in the problem of helping those who have not.

9. Conclusion

The subcommittee regrets that it was unable to deal with much of the agenda placed before it at its first meeting. It seemed important, however, at the beginning of WHO's work in this field to concentrate on a full discussion of the general principles which should underlie such a programme. There remain, nevertheless, many matters which require detailed discussion if sound advice is to be formulated on which WHO's future policy may be based. The subcommittee therefore urges that an opportunity should be provided for this as soon as may be possible by the convening of a second meeting.

Finally, the members of the subcommittee wish to express their great appreciation of the extensive preparation for their meeting undertaken by Dr. E. M. Jellinek, the WHO Consultant on Alcoholism, and their deep regret that his illness deprived them, at the last minute, of the benefit of his participation in their discussions.

10. Summary of Recommendations

The following is a summary of the recommendations :

Section 1

(a) WHO should encourage public-health services to undertake the medical prevention and early treatment of alcoholism ;

(b) WHO should provide advisory, educational, and other services on this subject.

Section 2

(a) A subcommittee on alcohol (as opposed to alcoholism) should be set up under the Expert Committee on Drugs Liable to Produce Addiction ;

(b) This subcommittee should study the modification of metabolism occurring in alcoholism ;

(c) It should also study the physiological aspects of alcohol tolerance ;

(d) The term "successfully arrested" should be used rather than "cure" in cases of "addictive drinking" which have been successfully treated, and the criterion of such a result should be based on several years' continued abstinence.

Section 3

(a) All countries should develop national statistics of alcoholism ;

(b) A small working group of experts with special experience of this subject should discuss this problem before the next meeting of the alcoholism subcommittee.

Section 4

(a) Outpatient dispensary services for alcoholics should be set up at general hospitals ;

(b) Non-medical workers directing residential institutions for long-standing cases of alcoholism should receive special training and should work under medical supervision.

Section 5

(a) WHO should take steps to obtain international acceptance of a common name for tetraethylthiuramdisulfide ;⁸

(b) This drug should not be used by laymen ; it should be available only to the medical profession and should be employed only on cases in which continued supervision is possible by physicians experienced in the problems of alcoholism ;

(c) Further research should be conducted on the value of ACTH and cortisone in the handling of the clinical problems of alcoholism.

Section 6

(a) Teaching on the subject of alcoholism should be included in the training of all physicians, public-health nurses, and medical social workers ;

(b) Dispensary services for alcoholics at general hospitals should be used to provide clinical teaching on this subject.

⁸ The common name "disulfiram" has now been adopted (see footnote on page 13 of this report).

Section 7

- (a) WHO should publish a classified bibliography on alcoholism ;
- (b) WHO should make available to important centres in different regions sets of the Abstract Archive of the Alcohol Literature which exist at Yale University ;
- (c) WHO should foster the creation of an international organization which would unite the professional and scientific societies and individual experts working in the field of alcoholism ;
- (d) WHO should sponsor a travelling study-group on alcoholism to review and report upon recent developments in the prevention and treatment of this problem ;
- (e) WHO should collaborate in holding short courses for individuals professionally concerned with the problem of alcoholism.

Section 9

A second meeting of the subcommittee on alcoholism should be convened in the near future.

Annex 1

**ESTIMATES OF NUMBER OF ALCOHOLICS
AND RATES OF ALCOHOLICS PER 100,000 ADULT POPULATION
(20 YEARS AND OLDER) FOR CERTAIN COUNTRIES**

Estimates of the number of alcoholics, based on careful statistical studies, are only available, as far as can be ascertained, for the following countries: Switzerland (1947);¹ USA (1900-48).²

The Jellinek estimation formula³ is based, of course, entirely on US experience and consequently has not been applied to other countries. However, since the publication of Zurukzoglu's estimate for Switzerland, the Jellinek estimation formula has been applied to the Swiss material and an estimate of 51,300 alcoholics has thus been obtained in comparison with Zurukzoglu's 50,000. A similar agreement is found in the case of Denmark. An investigation on the whole population of a small Danish island of rural character showed a rate of 1.75% alcoholics (with and without complications) in the total adult population. Assuming that in Denmark as in the USA (see below) only 25% of all alcoholics develop the so-called diseases of chronic alcoholism, the rate of alcoholics in Denmark in the total population according to the Jellinek formula would be 1.95%. Thus it is felt that the estimation formula may perhaps have applicability beyond the limits of the USA, and estimates have therefore been made for a few countries, as given in table 1.

In the table estimates are given only for those countries for which recent basic material could be obtained. Thus no arbitrary principle has entered into the selection of the countries for which estimates have been made.

The estimates in the fifth column apply to the number of alcoholics who, in consequence of prolonged heavy alcoholic excess, have developed either bodily or mental disorders incumbent upon such excess. As far as these characteristics go, the statistics are comparable. A doubt of comparability of the figures in the sixth column arises through the fact that certain ratios exist between alcoholics who have developed such disorders and those who have not developed these concomitant diseases.

Furthermore, allowance must be made for the fact that the estimates for different countries pertain to different years.

¹ Zurukzoglu, S. (Personal communication)

² Jellinek, E. M. (1947) *Recent trends in alcoholism and alcohol consumption*, New Haven (2nd edition in preparation)

³ See Annex 2, page 21.

In the USA, for instance, there is overwhelmingly large evidence that only 25% of all alcoholics in that country develop the so-called diseases of chronic alcoholism, i.e., the total number of alcoholics is four times as great as the number estimated in the fifth column which includes only alcoholics with complications. It is greatly to be doubted that the same ratio applies in other countries. One would be inclined to believe that in Chile the total number of alcoholics would hardly exceed the number of alcoholics with complications. In Switzerland there might be a 1.5 : 1 ratio ; the ratio for France may be 2 : 1 ; while in the Scandinavian countries the ratio is more likely to be the same as in the USA. Varying ratios have therefore been used in calculating the estimates in the sixth column.

In computing the rates per 100,000 it must be pointed out that it is essential that the rates should be based on the adult population only, since alcoholism occurs only among adults (with negligible exceptions), and since the percentage of adults varies greatly in different populations ; for instance, in Chile in 1946 only 52.7% of the population were of the ages 20 years and over, while in Sweden in that same year 71.7% of the population were adults, and in the USA 66%.

Computing alcoholism-rates on the basis of total population would result in entirely misleading trends. For instance, Chile would have, for the year 1946, 577 alcoholics with complications per 100,000 of the total population, and the USA 647 per 100,000 (1948), while on the basis of adult population Chile's rate is 1,497 per 100,000 and the USA's 988.

With these limitations in mind, the table of estimates is given for what it may be worth.

TABLE I. ESTIMATED ALCOHOLISM-RATES FOR VARIOUS COUNTRIES

Country	Year	Adults as percentage of total population	Estimated number of alcoholics		
			with complications		with and without complications
			Total	per 100,000 adults	per 100,000 adults *
Switzerland	1947	69.8	50,000	1,590	2,385
Chile	1946	52.7	43,000	1,497	1,500
France	1945	70.6	375,000	1,420	2,850
USA	1948	66.0	952,000	988	3,952
Australia	1947	67.5	34,300	671	1,340
Sweden	1946	71.7	30,800	646	2,580
Denmark	1948	67.4	13,500	487	1,950
Italy	1942	63.3	135,800	476	500
Norway	1947	70.2	8,400	389	1,560
Finland	1947	64.2	8,800	357	1,430
England and Wales	1948	72.0	86,000	278	1,100**

* Varying ratios of " alcoholics with complications " to " all alcoholics " have been assumed on the basis of discussions with experts for the various countries, except for the USA for which the ratio of 1 : 4 is well established.

** While the estimate of " alcoholics with complications " for England and Wales is probably reliable, the estimate of " all alcoholics " in these countries is hardly better than a guess.

Annex 2**JELLINEK ESTIMATION FORMULA**

Policies for the public care of alcoholics in any given country require at least an approximate knowledge of the number of alcoholics in that country. Obviously even a sample census is hardly feasible in most countries, although some small-scale censuses have been undertaken in the early 1930's in some parts of Germany, and more recently a complete census was taken in a small rural area of Denmark.

In the absence of actual counts, some method of estimating must be worked out. It is customary to gather statistics on :

- (1) reported deaths from acute and chronic alcoholism
- (2) deaths from cirrhosis of the liver
- (3) first admissions or "all" admissions for alcoholic psychosis to mental hospitals
- (4) arrests on charges of drunkenness, and
- (5) admissions to general hospitals for concomitant diseases of chronic alcoholism.

Certification of death from acute and chronic alcoholism is notoriously unreliable, as physicians are generally reluctant to embarrass families through certification of the death of a family member from this cause. Furthermore, as vitamin and hormone treatments of these diseases become more widely used, deaths from these causes tend to decrease. The trend of deaths from these causes reflects largely the trend of treatment.

As to first admissions to mental hospitals, this information is missing in many countries and frequently only the "all" admissions are known, irrespective of repetitions, and furthermore the diagnostic standards vary not only from country to country but from hospital to hospital in any given country. The standards of diagnosis may also change within the course of time. The statistics of admissions to general hospitals for diseases of chronic alcoholism are vitiated through multiple admissions whose extent is unknown. Arrests for drunkenness are particularly unsuitable as an index of alcoholism as only the number of arrests is known, but not the number of different individuals, and secondly, the policy for arrests for drunkenness may change within the course of a few months in any given city.

Even under the very best conditions, the above statistics could supply knowledge of not more than a fraction of the alcoholic population.

In an effort to arrive at an estimation formula for the USA (in 1940), Dr. E. M. Jellinek, at that time of the Yale Institute for Alcohol Studies, assumed that if the percentage contribution of alcoholism to a specific cause of death (estimate number 1), not subject to marked trends of improvement in treatment, could be established, and furthermore if from reliable autopsy material it were possible to determine :

(1) the relative incidence of that disease in the autopsy sample of the alcoholic population (estimate number 2), and

(2) the relative incidence of death from this cause among those alcoholics in whom this disease was present (estimate number 3)

it would be possible to estimate from these three points of orientation the number of alcoholics with complications alive in any given year.

Let d be a disease, respectively a cause of death, in which the percentage contribution of alcoholism is known. Let D stand for the total number of reported deaths from the disease d .

P = percentage of deaths from disease d attributable to alcoholism

C_1 = percentage of alcoholics with complications suffering from some degree of the disease d (determined from autopsy material)

C_2 = percentage of deaths from that disease among alcoholics with complications who suffered from some degree of the disease d

$K = \frac{C_1 C_2}{100}$ i.e., percentage of deaths from disease d among all alcoholics with complications alive in a given year, irrespective of whether or not they suffered from some degree of the disease d

A = total number of alcoholics with complications alive in any given year

Then :
$$A = \frac{P D}{K}$$

The limitation to alcoholics with complications is imposed by the fact that the constants C_1 and C_2 are found from autopsies performed on alcoholics who were hospitalized because of some alcoholic disease.

The treatment of cirrhosis of the liver has not undergone any radical changes within the past 50 years except — more recently — on an experimental basis, and thus trends in deaths from cirrhosis of the liver do not reflect treatment trends, although a slight effect of improvement in general nursing care may enter.

In analysing the trends for :

- (1) deaths from all causes in the USA from 1900 to 1945
- (2) deaths from tuberculosis for the same period
- (3) deaths from various heart diseases

- (4) deaths from several diseases of old age
- (5) deaths from various diseases of the digestive organs
- (6) deaths from venereal diseases, and
- (7) deaths from cirrhosis of the liver,

it was found that the trend of deaths from cirrhosis of the liver formed a unique pattern. From 1900 to 1915 deaths from cirrhosis of the liver showed a parallel slight decrease to deaths from all causes, but from 1915 to 1920 there was an extremely sharp drop which was followed by a consistent rise which became more pronounced starting in 1933 and became particularly marked after 1940.¹

It must be noted that beginning with the year 1915 more and more States of the USA adopted Prohibition and that because of the war emergency the population supported the law-enforcement agencies. In 1920 national Prohibition became effective. In the period 1915-20 Prohibition was so effective that alcoholic-beverage supply became greatly restricted and processes of alcoholic diseases in many alcoholics became arrested. After 1920, when the population did not support the law-enforcement agencies any more, bootleg activities produced an adequate supply at least for those who had become dependent upon alcohol. In 1933 Repeal became effective and the supply of alcoholic beverages soon reached a normal level. Since no other cause of death shows a trend similar to the trend of deaths from alcoholism, it is reasonable to assume that the decreases and increases in this cause of death are contingent upon diminished and increased accessibility of alcoholic beverages. From the analysis of this time trend, the percentage contribution of alcoholism to death from cirrhosis of the liver may be computed.

If the assumption that the trend is contingent upon varying degrees of excessive use of alcoholic beverages should be valid, it would follow that deaths from cirrhosis of the liver under the age of 20, i.e., when alcoholism as a contributory cause must be largely excluded, should not show the trend which is followed by deaths from this cause at all ages. Deaths from cirrhosis of the liver below the age of 20 were analysed separately and only random variation around a horizontal line was found. This, of course, greatly supports the initial assumption. The trend was analysed separately for each of the 48 States of the USA for males and for females separately, as well as for whites and non-whites, and the same trend was found in all cases, but of course on different levels. Jellinek therefore felt justified in computing from these trends the percentage contribution of alcoholism to the total of deaths from cirrhosis of the liver. For males in the USA this was found to be 51.5% and for females 17.7%.

¹ The portion from 1900 to 1940 is shown in a diagram in: Jellinek, E. M. ed. (1942) *Effects of alcohol on the individual. Vol. I: Alcohol addiction and chronic alcoholism*, New Haven, p. 287.

Tabulations of comparative autopsy data for nearly 100,000 alcoholics with complications and an even larger number of non-alcoholics have been published in scattered papers from all parts of Europe and the USA.

From a welding of these extensive data it appears that the relative incidence of cirrhosis of the liver among alcoholics with complications is approximately 9% (less than 1% among non-alcoholics) and of these 9% approximately 7.7% die in any given year from this cause. Thus, the percentage of death from cirrhosis of the liver among all alcoholics with complications alive in a given year, irrespective of whether they suffer from

that disease or not, is : $\frac{9 \times 7.7}{100} = 0.694$.

In estimating the number of alcoholics with complications in the USA in any given year, $P = 51.5$ for males and 17.7 for females, while K is taken as 0.694. The constant K may probably be taken as 0.694 for all countries, as it is based on international material in which the variation was at a minimum, but P will no doubt show variation from country to country. In such countries as Switzerland and France, certification of death from cirrhosis of the liver always means Laennec-cirrhosis, that is unquestionably alcoholic cirrhosis, and therefore in those countries $P = 100\%$. In the USA other conditions of the liver than Laennec-cirrhosis are diagnosed as "cirrhosis of the liver" and the above percentages apply. In tropical countries parasitic cirrhotoses frequently enter into the certification of death from cirrhosis of the liver and this is true of many other countries with underdeveloped hygienic conditions. It is therefore imperative to determine P for each country from a thorough analysis of trends as well as from a knowledge of various conditions of the liver which enter into the certification of death from cirrhosis of the liver before the formula can be applied in the estimation of the total number of alcoholics alive in any given year in a given country. In the estimates tabulated in Annex 1, K was taken as 0.694, but P has been taken at various values by approximate inspection of the primary data.

The estimates pertain to alcoholics with complications only. Further estimates must be made for the total number of alcoholics with and without complications. For the USA it is fairly well established that only 25% of all alcoholics suffer from complications and therefore the total is gained by multiplying by 4 the estimated number of alcoholics with complications. In other countries, such as Chile, probably all alcoholics suffer from complications, while in other countries such as Switzerland the ratio may be 2:1, and according to private communications and checks with local estimates the ratio in Scandinavian countries seems to be the same as in the USA. This ratio, too, must be the object of future investigations.