EXPERT COMMITTEE ON
MEDICAL REHABILITATION

First Report

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EXPERT COMMITTEE ON MEDICAL REHABILITATION

Geneva, 24-28 February 1958

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EXPERT COMMITTEE ON MEDICAL REHABILITATION

First Report *

INTRODUCTION

The first session of the Expert Committee on Medical Rehabilitation was held in Geneva from 24 to 28 February 1958. Dr G. Harlem was elected Chairman, Dr R. Soeharso, Vice-Chairman, and Dr E. Mindus, Rapporteur.

Dr M. G. Candau, Director-General of the World Health Organization, opened the session and welcomed the members of the Committee and the representatives from the United Nations and the International Labour Organization (ILO). In his opening address, Dr Candau stated that in the past WHO has laid greater emphasis on the prevention of diseases and injuries which are likely to lead to permanent disabilities. However, for some years and in a general way, an increasing attempt has been made to develop methods and means for physical, vocational and social rehabilitation. The Committee was requested to consider the concept and principles of rehabilitation from the medical viewpoint as part of this homogeneous and co-ordinated whole, as well as the aims of and methods for the planning of the organization and setting-up of the services it should include, taking into account the social and economic conditions peculiar to the different countries.

The Committee took note of the definition of health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” as stated in the preamble to the Constitution of WHO. The Committee also appreciated that, in fulfilling its constitutional duties and tasks, WHO draws upon the comprehensive and modern concept of preventive and social medicine, and that in carrying out and developing its work emphasis is laid on prevention of diseases or injuries which are apt to result in permanent disabilities. The Committee noted with satisfaction that in the field of rehabilitation WHO has made substantial contributions

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* The Executive Board, at its twenty-second session, adopted the following resolution:

The Executive Board
1. Notes the first report of the Expert Committee on Medical Rehabilitation;
2. Thanks the members of the Committee for their work; and
3. Authorizes publication of the report.

to countries which requested technical assistance; for example, by granting of fellowships for advanced study in rehabilitation, surveys by international experts, helping governments to establish pilot and demonstration rehabilitation projects, and training schools for physiotherapists, and by the provision of equipment and supplies for rehabilitation work. The Committee recognized that WHO carried out its activities in close co-operation and collaboration with the other international agencies interested in rehabilitation, such as the United Nations, ILO, the United Nations Educational, Scientific and Cultural Organization and the United Nations Children’s Fund and certain non-governmental organizations, such as the World Veterans Federation and the International Society for the Welfare of Cripples.

The Committee then undertook to make a general review of physical handicaps with reference to medical rehabilitation. The Committee decided that in this general review all types of handicaps will be taken into account, and that rehabilitation of the handicapped cannot be considered in the medical context alone but must be related to its social, educational and vocational implications. Nevertheless, the Committee would confine itself principally to the physical handicaps when considering the principles of methodology and the organization of medical rehabilitation services.

The Committee realized from the beginning the vastness of the field to be covered in rehabilitation and the complex nature of the subject, and therefore decided to confine itself to discussing general principles and practices of basic importance rather than details which could be dealt with in future sessions.

1. CONCEPT OF MEDICAL REHABILITATION IN RELATION TO SOCIAL AND PREVENTIVE MEDICINE

The Committee took note, with great satisfaction and strong support, of the Universal Declaration of Human Rights, adopted and proclaimed by the General Assembly of the United Nations on 10 December 1948 in which Article 25 (1) reads as follows:

"Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."

The Committee was therefore strongly of the opinion that the dignity and the right to security of the disabled person is no less than that of a normal individual and that everything possible must be done to rehabilitate the disabled in order to restore them to as normal a life as possible in the society in which they live.
The Committee, having noted the WHO definition of health as mentioned above, felt that in the field of rehabilitation the spirit of this definition should prevail in its entirety.

The Committee agreed that medical rehabilitation forms the fourth phase in the whole scheme of health and medical measures applicable to an individual or to a community—namely, the promotion of health, the prevention of disease, the treatment of disease, and medical rehabilitation—and fully endorsed the principle that in the over-all planning of health and medical services importance must be attached to the possibility of prevention, whenever possible, of those diseases and injuries which are liable to lead to permanent disabilities which will require rehabilitative measures.

Medical rehabilitation contributes to the achievement of health in two ways: firstly, by preventing the development of unnecessary disability during the treatment of illness, as illustrated by the stiffness and wasting associated with immobilization, or the anxiety occasioned by lack of prompt reassurance about the medical, social and vocational consequences of disease or injury; and secondly, by assisting those afflicted with unavoidable disability such as congenital deformity, accidental loss of sight, or incurable disease to achieve the fullest physical, mental, social and vocational usefulness of which they are capable.

The Committee well recognized that the rehabilitation process is a complex one, involving several disciplines and different techniques working together as a team in order to achieve the best end-results for the handicapped person. Emphasis must be strongly laid on the team approach, for no single discipline or technique could accomplish the desired objective to the exclusion of the others. Thus, medical rehabilitation must come first to restore or resuscitate the remaining, diminished or disturbed physiological and psychological functions of the handicapped person. Meanwhile, or shortly following the medical rehabilitation, the educational (especially in the case of children), the vocational, and the social aspects of rehabilitation must be proceeded with, dovetailed and geared together so that the whole process of rehabilitation should be a smooth and continuous operation from the onset of sickness or injury until the rehabilitated person has been re-integrated into society.

As the social services of a country develop, so the need for rehabilitation increases, the technical requirements alter and the process becomes more complex. But in the more advanced countries certain diseases have been eliminated or brought under control, and education has reduced public ignorance; the less advanced countries still need as a primary requirement basic medical and educational services to combat those diseases and that ignorance.

On the other hand, progress in medical science in the most developed countries has led to the prevention of many diseases, whilst in other conditions it has created new problems in rehabilitation because severely disabled
patients who formerly died now survive. At the same time economic, industrial and social progress has raised the educational and vocational standards which the disabled must attain if they are to hold their own with the able-bodied. Thus, in a highly-developed society many services may be concerned in the total rehabilitation of an individual patient, but unless there is close integration and team work the desired result will not be attained.

2. THE VALUE OF REHABILITATION

In countries where rehabilitation schemes have reached an advanced stage, they have proved to be of social and economic importance through the reduction in the total period of invalidism, saving in the cost of institutional care, sickness benefits, disability pension and, above all, in the timely restoration of the sick and injured to a useful life, including productive employment.

In 1953, for example, a rehabilitation service was established in Guatemala at the Institute of Social Security with technical assistance from the United Nations. This led to a reduction in the average treatment-period for injured workers from 203 days in 1952 to 36.85 days in 1955. At the same time, the number of insurance patients restored to full working capacity without the award of cash benefits rose from 141, or 43% of those treated in 1952, to 792, or 72% in 1954. The number of persons awarded compensation for total loss of working capacity decreased from 8.33% in 1952 to 3% in 1954.\(^1\)

In Australia, an outlay of less than £A 450 000 a year on rehabilitation services has been sufficient to restore to productive employment some 2700 persons formerly receiving invalidity pensions under the Social Service Act. This represents a corresponding direct saving to the State of £A 500 000 in payments to the disabled, to say nothing of the sizeable contribution which the rehabilitated persons now make to the national income.\(^2\)

In countries at an early stage of economic and industrial development, where there may be unemployment and under-employment, these considerations may seem to have less immediate force. But such countries are often largely dependent for subsistence on a family agricultural economy, and rehabilitation which turns a useless consumer into a useful producer makes a substantial contribution to the well-being of the people.

\(^1\) United Nations (1957) *Int. soc. Serv. Rev.*, No. 2 (March), p. 10
\(^2\) Australia, Commonwealth Department of Social Services (1955) *Rehabilitation in Australia; the Commonwealth Rehabilitation Services*, Melbourne
3. MAGNITUDE OF THE PROBLEM OF THE PHYSICALLY HANDICAPPED AND OF THEIR REHABILITATION

3.1 Sources of statistical information and their limitations

Although not strictly comparable because they are compiled for different purposes and based on different criteria, there are available in a number of countries statistics of physical impairment which give an idea of the magnitude of the problem of disability, even if they do not allow, directly at any rate, the proportion of such disabilities which might benefit from rehabilitation procedures to be evaluated. There are figures for the blind, deaf and dumb in the general population in the census returns of some countries. There are some data on physical impairments in schoolchildren, and others on individuals rejected for military service, statistics of disabled ex-service men, and of disabled workers covered by invalidity and other forms of social security insurance. Each type has its own limitations as to the groups of population concerned, precision of diagnosis and administrative stringency. Such as they are, they may help an opinion to be formed on the frequency and severity of physical impairments. A sample of such data is therefore given in Annex I (see page 34).

On the other hand, statistics of causes of death, even those specific for sex and age, general hospital returns, and records of sickness insurance, do not by themselves provide information on the prevalence of physical impairments, nor, of course, on the applicability of medical rehabilitation. As regards the latter, census returns of physical impairments, and even figures collected in morbidity surveys, give only an imperfect picture, the data being collected by persons who do not possess the technical training required to assess the severity and the curability of the impairments which they observe or which are reported to them. Census-takers, or even health visitors, are seldom furnished with a series of definitions and guides for measuring physical impairments. Statistics of the disabled receiving military pensions or insurance benefits are generally more reliable because they are based on well-defined, if only physical, criteria, and proper medical examinations. The best of the above-mentioned statistics contain information on the age, sex, occupation, and physical impairment of the disabled. Moreover, impairment statistics do not take into account the psychological condition of the disabled concerned, which may increase or diminish the incapacity caused by the physical impairments, so that the actual functional capacity remains unknown. The data relating to occupation, if given, refer to the original occupation and not to the occupation which the physical impairment may have driven the disabled to undertake.

Finally, such statistics of physical impairments as are available do not distinguish between those persons for whom there has been no attempt at
rehabilitation, those for whom rehabilitation has failed, or those for whom rehabilitation has been only partial, leaving a certain degree of uncom-
pen.sated incapacity. As a rule, statistics of physical impairments give
percentages of physical incapacity without stating whether the latter was
assessed before or after an attempt at medical rehabilitation. Nor do they
provide information of the influence of such rehabilitation on occupational
capacity.

3.2 Classifications and definitions required for compiling rehabilitation
statistics

The classifications of physical impairments at present in force are of a
statistical nature based on the etiology and anatomical site of the lesions.
The *International Statistical Classification of Diseases, Injuries, and Causes
of Death*\(^1\) contains such a classification, covering locomotor impairments
(loss or absence of members, or other impairments), and impairments of
the sense organs of sight and hearing. It is intended to be used in con-
junction with the main body of the *International Classification*, which allows
for a more specific description of the nature of the impairment. The prac-
tical value of such classifications as regards rehabilitation is limited, because
the true assessment of work capacity is based on a thorough analysis of
clinical findings, covering not only the physical impairment itself, but also
the general condition of the patient and his mental state, as well as his level
of education and occupational training. Efforts are now being made to
integrate other aspects relevant to rehabilitation into a statistical code; for
instance, in the USA a code is being developed which takes into account the
degree of permanency of the impairment, the extent of disability produced
by it, and the rehabilitation potential.

As concerns definitions, it is essential to distinguish between “impair-
ment” and “disability”. “Impairment” is the presence of a medically
diagnosed physical defect in the individual which reduces his fitness to cope
with the requirements of everyday life. “Disability” is a complex evalua-
tion of the reduction in the patient’s ability as regards gainful employment.
In certain countries, disability relates to the work involved in the original
occupation of the individual. In others, it is wider in scope and relates to
capacity for any work, taking into account general condition, age, sex,
education, occupation, and also the economic and social environment in
which the person concerned has to live. The question of grading enters
into the appraisal of the degree of both impairment and disability. In
countries affected by the war, the services entrusted with the award of com-
pen.sation for war impairments by the grant of military pensions, and the

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\(^1\) World Health Organization (1957) *Manual of the International Statistical Classifica-
social insurance organizations which provide compensation for permanently incapacitated workers, have established tables of ratings facilitating evaluation of permanent disability. These scales are based on the fundamental physical impairment causing disability, but unfortunately do not take into account either the repercussions of this disability on the general condition of the patients concerned, or any associated morbid conditions. Such tables can be usefully applied only if due consideration is given to the occupation, social and economic background and possibilities of employment of those concerned. While the medical principles on which these tables are prepared will not vary appreciably from one area to another, their practical application must vary considerably, in accordance with the social, cultural, economic and technical development of the country in question.

The only statistics of value from the rehabilitation point of view are those compiled by the staff of specialized rehabilitation centres. They may relate to the number of individuals who might benefit from a particular type of rehabilitation, for instance, children with locomotor impairments within a given population group, or they may cover the results obtained with the various methods of rehabilitation, both psychological and physical, as applied to clearly defined types of impairment.

Such studies necessarily take into account not only the nature and extent of the basic physical lesion, but also the morphological and functional disturbances which accompany it—whether or not they are in causal relationship with one another—as well as the type of work which the patient is called upon to do, and his willingness to co-operate in the rehabilitation process.

Such statistics are at present too few; more of them should be prepared so as to make possible an assessment of the scope and effectiveness of methods of medical rehabilitation.¹

Failing to obtain more precise statistical information in this connexion, one can only rely on impressions or opinions which are based on the clinical experience of rehabilitation specialists. Such impressions or opinions, which the Committee was prepared to endorse until more precise data were obtained through special studies, indicated that probably not short of 25% of all patients with physical disorders passing through acute general hospitals would benefit from rehabilitation, and that this figure might be as high as 75% in the case of patients suffering from disorders of the locomotor system in so far as the experience of the western countries is concerned.²

Finally, the Committee was well aware that a knowledge of the magnitude of the problem of the physically handicapped and of their needs for

rehabilitation is very important for purposes of systematic and effective planning of rehabilitation programmes to meet existing needs. Nevertheless, the Committee felt strongly that, despite the lack of precise statistical information on the handicapped in most countries, there is available sufficient information for initiating the planning and development of such rehabilitation services, and there is no need to defer such activities until statistics are complete and satisfactory.

4. BASIC PRINCIPLES AND AIMS OF MEDICAL REHABILITATION

4.1 General aims and principles

(1) The basic aim of medical rehabilitation is not only to restore the disabled person to his previous condition, but to develop his physical and mental functions to the maximum.

(2) More specifically, the aims of medical rehabilitation are not only "physical cure" but "social cure". This means the following:

(a) to restore the individual to his former job, or
(b) to prepare him for any full-time employment, or
(c) to prepare him for part-time or sheltered employment, or
(d) to restore him to self-reliance in daily life.

(3) Regardless of the goal, attention should be directed to the large physical and mental resources upon which the disabled person can draw. Emphasis therefore should not be on the individual defects but on the remaining assets and their re-integration into effective dynamic action.

(4) The physical restoration of the sick, injured, or disabled person will depend on his constitution, the application of all accepted medical and surgical procedures, and the complementary or supplementary use of all physical measures.

(5) The individual should be treated as a whole and not as an assortment of organs and extremities. The aim is to re-integrate all his functions into a total effective dynamic pattern.

(6) Treatment should begin early to avoid the deleterious effect of prolonged immobility resulting in loss of muscle tone, atrophy and metabolic deficiencies, and psychological disturbances.

4.2 Principles of therapeutic application

(1) Many illnesses normally proceed to rapid and complete cure with medical and nursing care alone, and in such cases no other services may be required, apart from incidental social advice regarding such things as
applications for sick pay or social assistance. In certain acute illnesses and injuries, especially those which might result in impairment, in chronic diseases and disabilities, the doctor needs the help and collaboration of a team of nurses, physical therapists, occupational therapists, prosthetists, medical social workers and other paramedical personnel.

(2) Physical measures employed in the treatment of injury and disease have had a long history. Traditionally they consist in the use of such physical agents as heat, electricity, massage, water and exercise. While all these agents have a place in physical restoration services, the greater emphasis in the past two decades has been on exercise in its various forms, such as group exercises and remedial games. Neurophysiological research has demonstrated the value of developing muscle power, range of motion of the joints, and co-ordination of muscles in group patterns rather than by single muscle treatment.

Exercises may be carried out on an individual basis or in groups, and may be assisted by music. They may be further devised in the form of games and organized sports, but their purpose is always the same—the development of the maximum function of the body and any of its parts for work and useful living. General conditioning (warming-up) exercises are valuable in the development of integrative and homeostatic maxima even in the severely disabled. They play an important part in combating atrophy, improving muscle tone and action, overcoming spasticity and preventing metabolic change, such as renal stone formation.

(3) Exercise cannot be carried out indiscriminately. It should be prescribed by a physician and taught by professionally qualified personnel.

(4) Exercise should not be confined to isolated muscle and joint activity but should be purposeful. By this is meant its application to the daily activities of living such as working, travelling and transfer activities, such as getting in and out of bed and wheel chair, and going to the bathroom.

(5) Associated with physical therapy is the use of those measures that have been grouped under the heading of occupational therapy. This discipline aims at restoring impaired function through the use of craft and industrial activities. The aim here is not only to develop the ability to carry out the needs of personal self-care such as eating and dressing, but also to restore the individual's capacity to work. For this greater reason consideration should be given to the development of those activities which would lead to application to the needs of independent living and capacity to work, rather than to use as diversions or recreation.

In the child, however, greater flexibility should be allowed in the choice of occupational therapy methods. Since play is such an important part of the child's life, and these play activities may indirectly lead to improved function, occupational therapy in these instances should include play, diversional and recreational activities.
(6) Speech therapy is indispensable to the restoration of the ability to communicate. It should be carried out in association with adequate appraisal of the nature of the defect, and its relationship to hearing disorders must be analysed. Socialization through group activities should not be overlooked in the management of these defects.

(7) The whole range of prosthetic devices are an important part of the armamentarium of rehabilitation services. We are concerned not only with artificial limbs, but also with artificial eyes, sensory aids, such as hearing devices, self-help devices, adapted equipment, crutches, braces, wheel chairs and automobiles.

Wherever artificial limbs are prescribed they should be considered as part of a co-ordinated programme, including:
- full psychological preparation and orientation of the patient;
- adequate surgery;
- after-care of the stump;
- prescription, fabrication, fitting and servicing of prosthesis;
- training in the use of prosthesis.\(^1\)

All prosthetic appliances should be made to the patient’s measurements and individually fitted. Wherever they are stock items, such as bicycles, wheel chairs, or self-propelled vehicles, their distribution should be carried out on a loan basis.

Many of these rehabilitation services can be adequately carried out in hospitals and hospital departments. However, the greatest efficiency can be achieved by grouping these comprehensive services in a rehabilitation centre. The rapid development of these centres throughout the world is evidence of the effective manner in which these needs are being met (see page 22 onwards).

4.3 The psychological aspects of therapy

The psychological condition of the patient is the result of a whole set of factors operating before, during and after disease or injury and having varying impacts on the end result. These factors are:

1. the duration of the disability—whether it has existed since early childhood or has been acquired after maturity;
2. the involvement or not of the central nervous system;
3. the condition before impairment:
   a. the patient’s mental make-up;

(b) the patient’s physical condition;
(c) the patient’s actual psychological situation;
(4) the social situation;
(5) the time interval between disability and rehabilitation.
They are discussed in more detail in Annex 2, page 40.
In all cases of disease or injury, these psychological factors affect the resulting impairment and disability. A great many patients requiring rehabilitation have combined disabilities, of which the psychological factors form a more or less dominating part.
Medical rehabilitation must therefore include assessment not only of the functional physical capacity but also of the psychological factors.
The psychological assessment should include assessing the mental capacity, the emotional stability, temperamental factors, and motivational forces. The factors relating to emotional stability have a dominating influence on the prognosis of the rehabilitation process. An assessment of these factors must therefore not be omitted.
Psychotherapy must be integrated in the rehabilitation scheme, but does not necessarily mean long-term individual therapy. The general regime with its changes between activity and leisure, the constant exposure to other people with more or less the same problems and experiences, has already an element of psychotherapy. The systematic group discussions of the anxieties and frustrations as perceived by the patient in different situations is important. Emotional tension is reduced and possibilities for social re-integration started.
Repeated reassessment of the patient’s psychological situation might be useful in enabling a larger choice of therapeutic measures to be applied. The rehabilitation process might be further developed when it is found that the patient’s emotional balance is recovered and his possibilities of resisting pain are increased. In such a situation even more complex occupational training schemes might be tried. The end-result of psychotherapy must be the reduction of emotional tension, and the gaining of an insight into, and a realistic acceptance of, the impairment. Constant attention to the possibilities of increasing the patient’s capacities should always be borne in mind.

5. THE NEEDS OF THE HANDICAPPED AND HOW THEY MAY BE MET

Rehabilitation services deal, broadly speaking, with three types of case. The first type is the patient who, after a period of medical or surgical care with physiotherapy, remedial gymnastics, and other paramedical procedures, can return to his normal work and normal life. The second type is the patient with a stable disability which is of such a degree or nature that
it will permanently influence his life and will therefore demand that, in addition to the specific medical rehabilitation services, the patient will also need educational, vocational and social help. The third type is the patient whose disability is either progressive or liable to vary in degree and effect from time to time. This patient needs the kind of total service which is given to the second type of patient, but after his resettlement in work he may continue to need help from one or more of the services, either regularly or intermittently, for the rest of his life. It is not always easy to distinguish between type two and type three. The patient who has been rehabilitated and resettled in work different from that which he formerly did, or who has had to return to his normal work and normal life with a handicap, cannot be finally regarded as re-established until he has had a substantial period during which to adjust himself to his new circumstances. It sometimes happens that such a patient may have persistent difficulty in adjusting, and may therefore need the continuing help which is given to the type-three patient.

It has been said that rehabilitation begins when the patient enters the hospital door and ends only when he is successfully and happily re-established in society. The process which brings this about involves four main groups of services—namely, medical, educational, vocational, and social.

### 5.1 Medical services

The medical needs and services have been fully outlined elsewhere in this report, but it is worth emphasizing one additional point—that the general practitioner has an important part to play not only in the after-care of the patient in relation to his specific disability, but in maintaining his general health during and after his re-establishment. It is regrettable that the specialization of medicine has produced fragmentation and has sometimes made the general practitioner feel that this type of work is not his concern. In fact he is a doctor practising medicine essentially in its social setting, and he has an invaluable knowledge and understanding of the patient’s family, social background and personal problems.

### 5.2 Educational services

The educational needs of the handicapped fall into six broad groups:

1. General education is most important for the handicapped child, but can also be of value to many handicapped adults. This is particularly important in the physically handicapped person whose best prospects for the future lie in making the fullest possible use of his intelligence in sedentary work. For the handicapped person who cannot expect to return to his previous work there is always the possibility that he may be trained for and established in work of a higher grade, but a certain amount of general education is likely to be needed to make this possible.
(2) It is also important that the patient should be taught special skills or special techniques which will help him to minimize the effects of his impairment. The obvious examples of this are the teaching of braille to the blind and the teaching of lip-reading to the deaf, but in addition the employment of prostheses or aids to the best advantage requires that the patient shall be educated in their use. He also needs education in using his residual powers and functions for the ordinary tasks of life.

(3) In some cases therapy and education have one and the same end. The training of the child with cerebral palsy in the use of his neuromuscular apparatus, the training of the deaf in speech, or the provision of speech therapy for a patient whose speech has been impaired by a cerebral accident, are examples of this.

(4) Vocational education needs no emphasis; it is an essential part of the process of re-establishing the handicapped person in a new type of work, and after a prolonged period of hospital treatment he may need vocational education before he can return to his old work.

(5) Education for leisure is just as important as education for work. Recreational activities are important in giving people companionship and opportunities of achieving satisfaction. If the handicapped person is, because of his handicap, compelled to give up his former recreations, he at once feels isolated from his old friends and has in addition a justified sense of frustration. It is important that he should be helped toward, introduced to, and educated for other recreational activities he can practise in his new circumstances.

(6) If the patient's disability is permanent, whether stable or not, he has to learn to live with it. This involves developing the right attitude towards impairment, neither surrendering to self-pity, nor aggressively over-compensating. The patient must learn to adjust his life to any necessary limitations and yet to live as fully as possible within those limitations. He will find that his relationships to his family, his friends and other people in general will be coloured by his disability, and he must be taught to meet the whole of his new situation with confidence and competence.

Of these needs, the first falls mainly within the scope of the formal educational services. The remainder may be provided for within the medical, vocational, educational and social welfare services operating either separately or jointly, according to the needs and circumstances of the patient.

5.3 Vocational services

The vocational services have three principal functions:

(1) They have to assess the vocational capacity of the handicapped person in relation to his former work and in relation to possible alternative
work, and when the assessment has been made they must, if necessary, guide him into his new vocation.

(2) Vocational training and re-training have both educational and vocational components. For the child they will probably be most easily introduced as an outgrowth from his general education, but for the adult they will almost invariably be part of the vocational services as such.

(3) The remaining function of the vocational services is the integration or re-integration of the handicapped person into employment. This end is achieved by a variety of means, such as selective placement carried out by the competent employment office, industrial rehabilitation centres, sheltered workshops and training workshops attached to industrial concerns; these services are also responsible for the general oversight of the worker during his period of re-establishment.

5.4 Social services

The social services again are many and varied, but fall broadly into two groups:

(1) The first group consists of those services which provide aid to the handicapped person in cash or in kind. Among these are insurance pensions, disability pensions, cash grants for resettlement and "assistance" in case of necessity, in addition to, or irrespective of, pension entitlement. Also included are the provision of prostheses of all kinds, the provision of mechanical transport, the provision of appliances of any kind to help the handicapped person in daily living, and the carrying-out of any alteration or adaptations in his home to make life easier for him.

(2) The second group of social services are the non-material ones which provide counselling and guidance in respect of personal, family and social problems which may concern the handicapped person.

5.5 Co-ordination of services

The need for co-ordination between the medical and other services may perhaps best be shown by giving a few examples which are within the experience of anyone who has done substantial work in the rehabilitation field.

(1) Many, if not all, handicapped persons after their impairment pass through a phase of dependence and loss of confidence. If the handicapped at this stage are provided with too much help or with the wrong sort of help, whether in the shape of pensions, allowances or ingenious mechanical devices, they may tend to rely too much on these various aids and lose the incentive to develop their own powers.

(2) A school health officer acting in concert with the clinician concerned may recommend that a particular handicapped child be placed in a school
where, in addition to receiving education, he can also receive special and appropriate therapy for his handicap. The educational administrators, finding that another school is perhaps more convenient or can provide an earlier vacancy, may send this child to that other school where his particular needs will be less satisfactorily met.

(3) A zealous worker concerned with resettlement is sometimes tempted to make arrangements direct for the provision of social and vocational help for some person whose case interests him. After the handicapped person’s hopes have been raised and work begun, it is discovered that the nature or degree of his disability makes such vocational and social help inappropriate or useless.

(4) If a handicapped person falls ill, his illness is a new factor in the total situation, and it may have a social impact very different from that of the same illness in a normal person. The doctor who in such a case merely treats the disease without understanding the physical, emotional and social aspects of the patient’s life as a disabled person, and how his needs may be met, may fail to ensure the care which would be most appropriate.

(5) It sometimes happens that family counselling or the giving of advice to the handicapped himself by the social or welfare worker, while carried out excellently from the social point of view, is vitiated by the social worker’s failure to take into account the handicapped person’s medical history and the medical background of his handicap.

To avoid this and many other possible errors, there are certain principles which can and should be followed:

(1) Each member of the team must know his own place in the team in relation to the others and must also understand the functions, methods and limitations of the others and their special skills.

(2) No rehabilitation programme for any handicapped person must be initiated without medical guidance and medical assessment.

(3) Every handicapped person undergoing rehabilitation must have a periodical medical reassessment. (In both the initial assessment and the reassessment the other members of the team will take appropriate parts.)

(4) No major change in a handicapped person’s rehabilitation care, whether medical, educational, vocational or social, should be made without obtaining medical guidance.

(5) When any social, educational or vocational problem arises in the handicapped person’s life, medical guidance should be available, and those responsible for his care should be prepared to seek that guidance.

(6) It is particularly important that the doctor, whether specialist or general practitioner, should understand the disciplines of the other members of the team and recognize their responsibilities.
6. EDUCATION AND TRAINING OF MEDICAL AND ALLIED PERSONNEL IN MEDICAL REHABILITATION

The Committee expressed concern at the quite inadequate attention paid to the principles and practice of medical rehabilitation in medical education. As has been previously stated, the concept of rehabilitation is not new. Indeed, it has always been a cardinal principle that the doctor's responsibility for a sick or injured person does not end until he has been reinstated in the community. What is new is the greater recognition of the importance of the social factors in health and sickness. The expansion of the social services in recent years has greatly increased the doctor's responsibility, because in virtually every aspect of social work medical advice is required to a greater or lesser extent; clearly the medical student must be prepared for his future responsibility.

Medical rehabilitation involves not only the closest possible integration of the curative and social services, but it also enters into every branch of clinical medicine. It merits, therefore, the earnest consideration of the medical schools not only because of its own importance, but also because it is probably one of the most effective ways of demonstrating the operation of the social services in relation to medicine.

Undergraduate training in medical rehabilitation should give students a general knowledge of the philosophy, principles and practice of medical rehabilitation as applied to their clinical work. Apart from some introductory lectures, this subject is best taught by practical demonstration through the medium of the clinical case conference attended by all members of the rehabilitation team, and through visits to the various types of medical and vocational rehabilitation centres. Instruction should be given by all clinicians in the course of clinical teaching, but this presupposes an adequate knowledge and experience in the modern practice of medical rehabilitation and, until this is the rule rather than the exception, reliance will have to be placed on the few who have made a special study of this subject. One suggestion was that where a department of social and preventive medicine or occupational health exists, it could also usefully initiate such an introductory course of instruction.

Further instruction should be included in postgraduate education. This applies not only to those who are training as specialists, but also to general practitioners, because it is not until doctors have had practical experience in the total management of patients that they can appreciate the full significance and practical application of medical rehabilitation. More detailed postgraduate training is required for those who elect to work in rehabilitation centres. This will include organization and administration, adequate understanding of the work of other members of the team, assessment of the work capacity and occupational potentialities of the disabled
and the means of establishing effective teamwork with all other services for the rehabilitation and resettlement of the handicapped.

In addition to learning the techniques of their own speciality, paramedical personnel need instruction in the basic principles and practices in the whole field of medical rehabilitation, with particular reference to the integration of their own work with that of all other members of the rehabilitation team.

In the less developed countries the training of paramedical personnel such as physiotherapists and occupational therapists will of necessity have to be curtailed, particularly in respect of theory, because of the shortage of trained teachers. In the first instance, the emphasis has to be on a practical training, but provision should be made as soon as possible for refresher and continuation courses, to enable these workers eventually to attain internationally accepted standards. Even though the initial training courses are limited to a minimum standard, the teachers should be fully qualified.

7. EDUCATION OF THE PUBLIC

7.1 The general public in a community

The attitude of the general public in a community towards the handicapped person, whether an adult or a child, has important repercussions on the handicapped person himself. In less-enlightened communities much superstition and prejudice still exists against the handicapped child. For example, he is often regarded as cursed by some Divine Power, possibly as a punishment for some sin on the part of the parents. Thus a sense of shame or guilt may prevail upon the parents, and the child is liable to be hidden and not given a chance of medical care and treatment. Or where life is hard he may be considered quite realistically by his parents as a useless mouth to feed, thus leading to neglect, rejection or, in extreme cases, even to infanticide. On the other hand, parents may use him as a signpost for begging. In the case of the adult, he is often reduced to the status of a pauper or beggar, for his handicapped condition prevents him from competing with the able-bodied, apart from his unacceptability as a normal being.

In more-enlightened communities much of the superstition and prejudice against the handicapped person may have disappeared, but ignorance of the nature of the handicap and scepticism of the potentialities of his ability after rehabilitation still exist and may be quite widespread. Even in these

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communities the handicapped person may often be regarded as fit only to be an object of charity and philanthropy rather than as a human being with dignity and rights entitled to a decent standard of living.

In combating and changing these attitudes towards the handicapped person, the public should be better informed about the nature of the handicap and what can be done to overcome it by modern rehabilitation measures. Admittedly the uprooting of deep-seated superstitions and prejudices is no easy matter. In the less-developed areas where a local rehabilitation programme is to be launched it may be considered worthwhile to start with an intensive public information and education campaign, using all available methods—press, exhibitions, radio, lectures, etc. The Committee stressed, however, that of the many possible ways of educating the public, only one is of lasting value. That is to turn the handicapped into good, useful and happy members of the community, so that people can see for themselves what can be achieved.

7.2 The handicapped person and his relatives

Much emphasis has been laid in the previous sections on the importance of teaching the handicapped person to live with a handicap to the maximum of his ability when he is being rehabilitated. It is, however, important also to stress the need for telling the patient realistically his limitations so that no false hopes are held which may result in disappointments. This is particularly the case with unstable disorders such as rheumatoid arthritis, or a progressive disease such as multiple sclerosis. The attending physician has a duty to explain to the patient the nature of his disorder as explicitly as possible without arousing unjustified expectations.

It is usually easier and quicker for relatives to help him with the activities of daily living such as toilet, feeding and moving about than to help him to help himself. Nevertheless, the longer relatives help, the more dependent the disabled member becomes upon them and the harder it is for him when they tire of the burden. Therefore, it is much kinder in the long run to train relatives to encourage independence as early as possible; but, unfortunately, they will not always accept advice. Too often over-protective relatives condemn a weak-willed handicapped person to unnecessary and permanent dependence upon them.

In the case of handicapped children, the frequent tendency of over-sympathetic parents or relatives to be excessively protective needs to be overcome by careful and tactful guidance from home-visiting health and social workers. Where, on the other hand, prejudice or ignorance leads parents or relatives to neglect the child or to refuse to accept offers of rehabilitation care, persuasion may not be enough; it is better to show the parents children who are actually benefiting by rehabilitation.
7.3 The employer

Where there is surplus manpower, such as in many less developed countries, physically handicapped workers are at a great disadvantage in competition with the able-bodied. Education and even legislation, including such compulsory measures as quota employment, may not be able to overcome the situation any more easily. The best way to remedy it would be to show what the rehabilitated but handicapped person can do in practice.

Most employers are sympathetic towards handicapped people and especially towards those who have been in their own employ. Nevertheless, in the main, they seem to prefer to contribute towards disability pensions and institutions for the handicapped rather than to try to find a place for them in their own business. This attitude probably stems from the belief that it is more efficient to discharge them and contribute, often generously, to their support rather than to try to retain them in employment.

There is a good deal of trade union and public support for this attitude, firstly, from misguided sympathy and desire to support the handicapped and, secondly, from the fear that the efficiency of the able-bodied may be impaired if handicapped people are included in production teams. Nevertheless, the essence of the modern approach to rehabilitation is that the handicapped should be given the opportunity of continuing to work in industry so long as they are capable of doing so. The need of the present time, therefore, is to persuade and educate employers to think in terms of the residual capacity rather than the incapacity of the handicapped, and then to try to absorb them into jobs which they can do on more or less equal terms with the able-bodied.

It is one thing to employ people with stable disabilities, and quite another to try to accommodate those suffering from unstable and progressive disorders. Most of the pioneer work in the employment of the handicapped has been in connexion with those permanently disabled by injuries received in industry or warfare. The current and numerically much larger problem, at any rate in the highly developed countries, is the employment of those with unstable disabilities, particularly the chronic medical disorders. If the modern concept of helping the handicapped to be self-supporting within the community for as long as possible is to be fulfilled, two things are essential.

Firstly, all employers must be educated to accept the principle that it is more humane to find work for the handicapped, even at some cost and inconvenience, than to contribute to charity. Secondly, the community at large must recognize that there is a limit to which competitive industry can go, and that the State must provide subsidized workshops for those who are too disabled for employment in open industry.
7.4 Fellow workers

It is paradoxical that resistance to the employment of the handicapped often comes from fellow workers. In certain disorders it is due to ignorance and fear of infection, as with tuberculosis, or alarm at such manifestations as epilepsy, and should be countered by education and propaganda. In other instances it is due to the fact that, although handicapped people may be able to work at a steady pace, often they cannot work as fast as the able-bodied or do regular overtime work. Hence, in team work they may have an adverse effect on the earning of production bonuses. Therefore, supervisors must be educated to recognize that speed and endurance, as well as ability to do the job, need to be taken into account when placing handicapped people on any work.

Considerable resistance also arises at times from understandable but misguided concern for the worker's status. If the conventional way of entry to a particular skilled trade is through a period of several years' apprenticeship, the members of that trade will be reluctant to admit that a new entrant can have been adequately trained in one year or less in a rehabilitation centre. In actual fact, apprenticeship includes not only special training for the job concerned, but a great deal of general training in life in industry and, commonly, much time spent in unskilled work as distinct from training, while the patient from the rehabilitation centre is usually a mature person of industrial experience whose training in the centre has been far more intensive and concentrated than that of an apprentice. If this were properly appreciated, the resistance to the introduction of the trained handicapped worker would be considerably less.

8. PROGRAMME PLANNING AND ORGANIZATION OF MEDICAL REHABILITATION SERVICES

In programme planning, consideration must be given to all the stages of rehabilitation. A patient suffering from a condition liable to leave him physically handicapped needs:

1. treatment;
2. rehabilitation;
3. settlement in employment;
4. general care in his family and occupational surroundings—that is, in his social environment.

In every case, medical care should be followed by social cure; the latter involves rehabilitation, which must commence at an early stage, very
frequently simultaneously with purely medical treatment. Functional rehabilitation should be started as soon as possible and then followed up, without a break, by vocational and social rehabilitation. In planning medical rehabilitation programmes, these general principles must be borne in mind, for it is the application of methods and measures developing over the course of time, but remaining closely linked with one another, which represents the only sure foundation for success.

The responsibility of the medical rehabilitation services ends only when the rehabilitated person has been returned to his family and social environment. Both from the physical and psychological viewpoints, too much stress cannot be laid on the basic aim, which is the integration in the community of most handicapped persons by giving them the possibility of gainful employment. Consequently, medical rehabilitation programmes should envisage all forms of disability, no matter what their etiology, and should make use of every means of overcoming them. Such a programme can only be successfully carried out by the co-ordinated efforts of the various bodies involved. Considered as a whole, this requires logical co-operation and team-work between all the appropriate technicians, and also between all the services concerned, in a work of human and social solidarity, which is vital simultaneously from the demographic, economic and financial viewpoint for the whole country.

In programme planning, allowance must be made for special situations which concern not only individuals, but also the social and economic conditions, as well as the administrative aspects, characteristic of each country, area and locality, having regard to the varying degrees of development in the different fields.

There must be some statistical assessment of the number and categories of handicapped people requiring rehabilitation. The difficulties of this are discussed on page 7, but the making of approximate initial estimates is sufficient for the first stages of planning and establishment of services. It is necessary also to take into account general economic conditions and the employment market at the local level, since these factors govern the needs of vocational rehabilitation and the possibilities of the return of the individual to regular employment.

This consideration leads us to the conclusion that the policy of medical rehabilitation should be a flexible one if it is to be carried out effectively, while following the major guiding principles which, under all circumstances and in all places, should inspire it.

In the less developed countries the planning problem is complicated by the very high prevalence of certain handicapping conditions, by the level of development of the general medical and social services, and by the need to relate the rehabilitation services to the general social and cultural pattern. Annex 3 (see page 43) makes some suggestions which in the Committee's view may be useful as broad guidance to such countries.
8.1 Organization of medical rehabilitation and related services in a complete rehabilitation programme

It is convenient at this point to list in some detail the medical and other services and organizations which are involved in a complete rehabilitation programme.

The degree of development, the methods of administration, the terminology of the techniques and the designation of the personnel vary widely from country to country, so that this list is in fact only a general approximation to the pattern commonly found in the countries with more fully developed services.

8.1.1 Rehabilitation services within general hospitals

These comprise occupational therapy, physiotherapy, psychotherapy, psychological guidance, speech therapy and social work under the direction of one or more members of the medical staff with a special responsibility for medical rehabilitation.

These services meet the needs of:

(a) the relatively larger numbers of patients, both in-patients and out-patients, drawn from all the clinical departments of the hospital whose rehabilitation can be completed by a short course carried out more or less concurrently with medical or surgical treatment; and

(b) the relatively smaller number of more-severely disabled patients whose rehabilitation must start in hospital as soon as possible after the onset of sickness or injury, and will be continued in post-hospital centres when active medical or surgical treatment has been concluded.

8.1.2 Rehabilitation services within special hospitals

These are similar to the services in general hospitals except for differences in detail, such as the use of orthoptists (instead of speech therapists) in eye hospitals, a more elaborate prosthetic department in orthopaedic hospitals, and the addition of educational facilities in long-stay hospitals, especially for children.

8.1.3 Post-hospital rehabilitation services

These can be divided broadly into medical rehabilitation centres and centres for vocational rehabilitation.

(a) General post-hospital medical rehabilitation centres. These continue the work of restoring physical and mental function previously started in the hospitals, or suitable patients may be admitted direct from general medical practice or the consultative out-patient departments. Being
established for the purpose, they are usually more fully equipped and staffed, and more intensive rehabilitation can be given than is possible in hospitals.

These centres meet various needs. They provide a comprehensive full-time programme of progressive activity in an atmosphere of recovery in contrast to the more leisurely tempo and the atmosphere of sickness associated with the hospitals. The occupational therapy is related as closely as possible to normal industrial processes. As well as providing for the restoration of function through work, these workshops also serve for pre-vocational assessment. There is close liaison with the vocational guidance and placement officers of the industrial rehabilitation and employment services. The physiotherapy is mainly in the form of organized remedial games and exercises.

In sparsely-populated and rural areas these centres are residential, but in urban areas they may be non-residential and work in close association with one or more hospitals.

Recent experiments have been made in the extending of out-patient work in therapy, training in the use of prostheses, and their care and servicing, into the patient’s home. It was suggested that further development on these lines would be profitable in suitable circumstances.

(b) Special post-hospital medical rehabilitation centres. These are similar to the general centres, but meet special needs, such as for cases of paraplegia, tuberculosis, mental disorder, or for particular industries, such as mining.

(c) Centres for vocational rehabilitation. These may be general centres for vocational assessment and guidance, industrial reconditioning and retraining, or centres for special categories of disabled people, such as the blind. These vocational rehabilitation centres may be run by government departments, large industries or voluntary organizations.

(d) Combined centres. Some centres combine medical and vocational rehabilitation. This is the usual form adopted in countries starting rehabilitation. Thereafter, although practice varies according to local circumstances, the trend is towards the establishment of facilities for medical rehabilitation at the hospitals and the use of separate centres for vocational training. In some countries, however, combined rehabilitation centres have been found of special value for the care of the most difficult cases.

8.1.4 The public health services

These are responsible for general environmental health and hygiene work, including epidemiology, but they also include in varying degrees in different countries maternity services, the health care of young children, the school health service, and the home nursing service, as well as mental health work in the care and supervision of both the mentally subnormal and the psychologically ill.
8.1.5 The education service

So far as the handicapped are concerned, this is responsible for providing general and technical education for children, adolescents and adults, in addition to appropriate special education for the handicapped child and adolescent.

8.1.6 The welfare services

These services comprise a wide variety of provisions which vary from country to country and even from place to place in the same country. They include domestic help service, transport service and a wide range of "after-care" services which may extend to the provision of sick-room equipment, aids and appliances, and include the making of alterations or adaptations to the house of a handicapped person in order to facilitate his daily activities. They may also provide hostels for the disabled and sheltered workshops, together with a staff of social workers of various kinds.

8.1.7 The vocational services

These are the services which provide vocational assessment, guidance, training, establishment and resettlement. Services of this kind are given by centres such as those mentioned under 8.1.3 (c), (d) on page 25, but may also be furnished by such agencies as the local employment service office, the resettlement department and the staff recruitment department of an industrial concern.

8.1.8 Social security services

These comprise State insurance schemes for sick pay, disability insurance and unemployment insurance, and also arrangements for the giving of aid supplementary to insurance and pensions in appropriate cases. Under this heading can also be conveniently included the superannuation and sick pay insurance schemes of public and private employing bodies, and voluntary health insurance schemes.

8.1.9 The industrial health and welfare services

These provide for the medical supervision of the worker and for any special care or attention which may arise out of his employment, and deal also with medico-social problems arising in connexion with employment.

8.1.10 Employing bodies (public and private), trade unions and workers' organizations

These bodies are commonly concerned with conditions of employment and, in certain countries, with welfare schemes of various kinds.
8.1.11 *Voluntary organizations*

These include the mainly philanthropic traditional organizations for the help and care of the handicapped, the new associations which are being formed by the handicapped for themselves, and various non-specific organizations whose objects are the broad promotion of social welfare work in their countries. The voluntary organization has a special place as a pioneer in the field of rehabilitation since its independent nature allows it to experiment with a freedom which a governmental organization may lack. Apart from this, voluntary organizations may provide direct medical or social services for the handicapped either independently of community provision or in direct and formal association with government and community services.

8.2 *Co-ordination and co-operation at different levels*

It is obvious that unless the services enumerated above are co-ordinated with one another and with the more specific rehabilitation services, there will be waste and inefficiency in operation. It is also important, however, to realize that lack of co-ordination may produce a situation in which the operation of certain social services may positively impede rehabilitation work. Several examples have been mentioned earlier in the report (see page 16).

Whether an impairment is in actual fact a handicap depends on the personal and social circumstances of the patient's life. It therefore sometimes happens that an adjustment of the handicapped person's circumstances, perhaps with the aid of educational, social or vocational services, may reduce or even eliminate the need for the specifically medical techniques of rehabilitation. This, however, can be done only if all the services are working in concert.

Co-ordination and co-operation has to be achieved at three principal levels, at the level of national organization and policy, at the level of local organization, and at the most important working level of making exactly the right provision for the particular handicapped person.

8.2.1 *At the national level*

The team spirit must be observed at all levels of administration so that all the disciplines taking part in activities at the local and working levels are also represented at the national level.

The Committee recommended that, on the government side, the Ministry of Health should have a primary interest in the organization of the medical rehabilitation services. However, this does not mean that the responsibility of the Minister of Health should be exclusive in nature; on the contrary, it will always be necessary to ensure the full participation of the other government departments concerned, such as the Ministry of Labour, the Ministry
of Social Affairs, the Ministry of National Defence, as well as the sickness insurance and social welfare institutions, etc.

Those who are responsible for the organization of rehabilitation services at the national level may be reminded that rehabilitation does much to lessen the burden borne by the State in the protection of the physically handicapped. In addition, it must be remembered that the aim of medical rehabilitation is to make the handicapped person a man like any other, with his rights and duties towards the community.

The medical profession as a whole is fundamentally responsible for the development of medical rehabilitation services and should be brought into co-operation at the national level in planning and practice.

The Committee also recognized the importance of the participation at the national level of non-governmental organizations.

A practicable means toward top-level co-ordination is through such bodies as standing inter-departmental advisory committees which may include in their membership representatives of non-governmental organizations, including not only voluntary service organizations but employers' and workers' organizations. Some countries have found it useful to appoint a rehabilitation co-ordinator to help to ensure continuing co-ordination.

An important function of such committees will be to reduce or eliminate the disharmonies of policy which cause difficulties at the working levels. A few examples of this kind may be cited to illustrate this point. A condition of a sick-pay scheme or disability allowance may be that the patient in receipt of the pay or allowance shall not work or shall do only a strictly limited amount of work while he receives it; this frustrates attempts to restore the patient progressively from part-time to full-time work. Certain employing bodies have contributory pension and sick-pay schemes to which all their employees are required to contribute, and they demand for this purpose that the prospective employee shall not merely be fit to do his proposed work but shall also satisfy certain arbitrary physical standards; some handicapped people who are perfectly fit to work are unable to satisfy these requirements. Certain accident insurance companies make a practice of requiring a higher premium for industrial accident insurance on behalf of a handicapped worker than on behalf of a normal person; this may make employers hesitate before engaging handicapped persons.

8.2.2 At the local administrative level

The division of responsibility at the local administrative level is somewhat easier to overcome because health, welfare and educational functions are usually the responsibility of the same local authority, even though they are in different departments of that authority, and in some countries the industrial health service and the hospital service are parts of the public health service. General medical practice, social insurance and the vocatio-
nal services are, however, commonly independent of local authority administration, as are industrial management, trade union organization and the voluntary bodies. A local joint advisory and co-ordinating committee, with representatives of these services and organizations and the local authority's departments, has in many places been found very useful.

The medical officer in charge of the local health services, because of the wide range of the services he directs, and because of his medical knowledge and background, can play a very useful part in achieving co-ordination, and it is particularly important that he should have good contact with the hospital and general medical practice. The local health department can not only function as a case-finding agency through its own maternal and child health, school health and other services, but can also usefully serve as a clearing-house for all case-finding activities. Some countries require that the local health department be notified of all cases of congenital deformity, so that general supervision can be given and necessary care initiated. It would be very useful if there were a formal or informal system by which all doctors, whether in hospital, general practice, or in industry, reported to the local health department cases of potentially handicapping impairment.

On the other hand, the physician meets automatically only those handicapped persons who come under his care at the time of the initial illness or accident. Many impairments which are congenital, or arise in childhood, and some which develop later in life, are not associated with acute illness or injury and are most likely to be noticed early by some person who is in regular contact with the child or adult in health as well as in sickness, and who is able to detect deviations from the normal, and their significance. The many workers in the medical, educational, vocational and social fields, whether in the public services or in voluntary organizations, who may be in a position to do this, should be trained and ready to use their opportunities to the full.

8.2.3 *At the working level*

The final expression of rehabilitation consists in the combined effort of skilled people working together to help the unfortunate. The most favourable conditions for medical rehabilitation are present when there is general co-operation of all the groups concerned, as well as of individuals belonging to the local community. Such co-operation can only be produced by the health education of the population as a whole. At this level, co-operation depends upon the medical, rehabilitation and social workers knowing and dealing with each other and their patient personally, and the local administrative machinery should not impede this personal contact. The co-operation of these groups is specially necessary in the assessment of the patient's disability and prospects. This requires in effect the drawing-up of a balance sheet with the patient's liabilities on the one side and his assets on
the other. It includes an evaluation of the disability itself, of the probable effect of medical or surgical treatment, of the patient’s present and future capacities for employment and general living, and of the personal and social factors present in himself, his family and his surroundings which might make him specially vulnerable or specially strong in meeting difficulties and crises. In the case of the child, the assessment must take into account not only these factors, but his need for, and the availability of, general and special education, his educational programme being co-ordinated with any long-term programme of medical or surgical treatment.

Another point at which co-ordination and co-operation is needed is when the patient is faced by some special difficulty or crisis, whether this arises from the fact that his disability is progressive rather than stable, or from some change in his family or social circumstances. Such a situation may demand a complete reassessment—medical, educational, vocational and social.

A most useful technique is the case conference at which the hospital physician or surgeon, the general medical practitioner, the public health doctor, the health visitor or her equivalent, a representative of the vocational rehabilitation service, the employer, the trade union representative, the industrial medical officer, the social worker and other immediately interested people together consider how they can individually and collectively help the particular patient. Not only does this benefit the patient, but it is an invaluable means of educating the different members of the team in the theory and practice of their teamwork.

One complication sometimes encountered occurs in the after-care of the patient in his home, where he is liable to be visited and bewildered by a multitude of individual specialist field workers, such as the hospital-based social worker, the home teacher, the psychiatric social worker, the education welfare officer, and so on. Nothing can replace these specialist workers in their own work, but the health visitor, “assistante sociale”, public health nurse or her equivalent, who is usually also the school nurse; has an intimate acquaintance with most families in her district, in health or in sickness, and can potentially be a valuable co-ordinator, especially if, as is increasingly happening, she has close contact with the hospital and the industrial welfare department. Her practical value as a general-practitioner social worker in this field depends on how effectively she has been oriented in matters concerned with rehabilitation, and this point should receive attention in her training. She must not usurp the function of the specialized workers mentioned earlier, but she can often help them by her pre-existing knowledge of the family, and as a friend of the family she is a useful introducer of the specialized social worker, who would otherwise come as a stranger.

From the above account it should be evident that co-ordination and collaboration between the various services and professional workers must continue from the moment when the patient’s impairment occurs or is
detected for the whole of the period during which he needs help. Failure at any point would only result in detriment to the patient whom they are to serve.

To conclude this consideration of the need for and practice of co-ordination and co-operation, it may be useful to indicate briefly how social services of the types mentioned above may be able to help in the rehabilitation of certain classes of handicapped people. The list is not exhaustive and is merely given by way of illustration. The social provision indicated is in addition to specific rehabilitation provision, whether medical or vocational. It is assumed that financial help of one kind or another, and counselling, may at any time be required by any handicapped person, so that these services are not specifically referred to under the individual heads; it is not, of course, suggested that all the services listed will be needed by every handicapped person.

1) *Locomotor difficulties.* Continuing general medical care; prostheses, aids and appliances; structural adaptations in the home; transport; hostel accommodation; domestic help.

2) *Blindness.* Special education; general education; aids and appliances (such as talking books and braille literature); sheltered workshop for training or regular work; transport, or provision of a guide or guide dog; domestic help; social amenities (such as social and recreational clubs).

3) *Deafness.* The provision of hearing aids, which must be regularly checked and properly maintained; speech training and other specialized education; general education; social amenities.

4) *Tuberculosis.* Special surveillance and medical care of the individual and family to reduce possible risks of infection; improvement of housing conditions, also to reduce risks of infection; sheltered workshop or colony employment; general care to restrict the possibilities of the spread of infection.

5) *Cardiac disability.* Suitable housing provision; transport; domestic help; sheltered workshop employment; general medical and social surveillance.

6) *Chronic respiratory disability.* Suitable housing provision; transport; domestic help; sheltered workshop; general medical surveillance; periodical assessment to adjust provision to fluctuations in the condition causing the handicap.

7) *Chronic rheumatoid diseases.* Suitable housing; transport; aids and appliances; domestic help; sheltered workshop.

8) *Degenerative conditions of advancing age.* Housing provision; domestic help; part-time employment under suitable conditions; social amenities; general health supervision.
(9) *Digestive disorders.* Adjustment of employment to reduce psychosomatic strains; facilities for special diet provision; continuing general medical supervision.

* * *

In conclusion, for the patient, rehabilitation is the road to life and its scope must be as wide as life itself. In the modern community, wide-ranging activities entail complex organization, and perhaps one of the greatest problems to be faced is that of reconciling the demands of organization with the needs of simple humanity as expressed in the care of the individual patient. The success of a rehabilitation service is to be judged in the end by the wholeness and happiness of the man, woman or child whom it seeks to help, and it stands or falls by the measure in which all who work in it, from the highest to the humblest, regard themselves as the common servants of this common purpose.

9. RECOMMENDATIONS FOR FURTHER STUDY AND ACTION

(1) There is need for precise definition of terms used in the rehabilitation concept. Such terms as "disability" and "impairment" in relation to the disabled person and his rehabilitation are fundamentally important for the planning of rehabilitation services. Social insurance and pension systems also depend upon a precise definition of the term "disabled". It is therefore urged that further study of internationally acceptable terminology should be carried out in future by appropriate international organizations concerned. The study should also include other technical terms commonly used in the field of rehabilitation, so as to avoid confusion or misunderstanding.

(2) The establishment of rehabilitation services requires statistical studies concerning the magnitude and nature of the problem. It is therefore recommended that a thorough exploration of the extent of the problem be developed in individual countries, by carrying out field studies with the assistance, wherever necessary, of the appropriate international agencies.

(3) In those countries where social security and disability pension systems have been developed, they seem in many instances not to be adequately co-ordinated with the rehabilitation machinery. It is urged that further studies be carried out in co-operation with other interested agencies, with the aim of recommending better solutions to this very difficult but important problem.

(4) The Committee noted with satisfaction the measures taken to promote co-ordination between international agencies interested in the broad field of rehabilitation, and urged that it be continued. The importance of
the same type of co-ordination among the government departments dealing with rehabilitation on a national level is similarly emphasized.

(5) The rehabilitation service of a country must be closely related to its social and cultural pattern. The personnel who are to operate that service in its initial stages should, therefore, receive their training in countries with a background comparable with that of their own. The more elaborate training provided by the most advanced centres in technically highly developed countries should be reserved for personnel who have already been trained at the local level and have had substantial practical working experience in their own country.¹

(6) There is a need for further examination of the training programmes of physicians and paramedical personnel, and it is urged that the shortcomings as expressed in the report are considered through appropriate channels.

(7) The Committee noted that WHO has had, and will continue to have, under study various diseases and conditions that cause disability, and urged that such studies include some consideration of the rehabilitation aspect involved.

(8) While the techniques in rehabilitating the orthopaedically handicapped and those with impairment of the special senses have been developed over many years, rehabilitation techniques for those disabled from circulatory, respiratory and digestive disorders have not been developed correspondingly. Nevertheless, it seems clear that these medical conditions are those most frequently causing disabilities. It is therefore recommended, as a field for future activity, that WHO should assist in developing the techniques in question, especially those for cardiac disability.

¹ United Nations (1959) Report of Seminar on Rehabilitation of the Physically Handicapped, Solo, Indonesia, 26 August—7 September 1957. Conclusion No. 12 (to be published)
Annex 1

SELECTED DATA ON THE PREVALENCE OF PHYSICAL IMPAIRMENTS IN SOME POPULATION GROUPS

The figures collected here constitute a mere sampling of available statistics relating to physical impairments in various population groups. They cannot alone provide an estimate of the applicability of rehabilitation procedures; but in spite of their intrinsic limitations and lack of comparability, they throw light on the order of magnitude of the problem of the physically handicapped.

<table>
<thead>
<tr>
<th>Age</th>
<th>Actual numbers</th>
<th>Rates per 1000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both sexes</td>
<td>Males</td>
</tr>
<tr>
<td>14 years and over</td>
<td>189372</td>
<td>117592</td>
</tr>
<tr>
<td>of which:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-64</td>
<td>80345</td>
<td>54371</td>
</tr>
<tr>
<td>65 and over</td>
<td>107583</td>
<td>62443</td>
</tr>
</tbody>
</table>

* Including Newfoundland, excluding Yukon and North-West Territories

# TABLE II. CANADA: ENUMERATED NUMBER OF PERSONS TOTALLY BLIND **
(Census, 1 June 1951)

<table>
<thead>
<tr>
<th>Age</th>
<th>Actual numbers</th>
<th>Rates per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both sexes</td>
<td>Males</td>
</tr>
<tr>
<td>All ages</td>
<td>13,124</td>
<td>7,516</td>
</tr>
<tr>
<td>of which:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>580</td>
<td>332</td>
</tr>
<tr>
<td>15-69</td>
<td>7,302</td>
<td>4,314</td>
</tr>
<tr>
<td>70 and over</td>
<td>5,242</td>
<td>2,492</td>
</tr>
</tbody>
</table>

** Including Newfoundland, Yukon and North-West Territories

** Blind "** any person who could not read a given group of letters about half an inch (13 mm) in height at a distance of one foot (30 cm). In the case of illiterates and children of pre-school age, images to be identified replace letters of corresponding size and distance.

Among the blind population of 5-14 years, 57.5% were attending school. Among the blind population of 14 years and over, 16.4% of the males and 3.7% of the females were reported to be in the labour force.


# TABLE III. CANADA: ENUMERATED NUMBER OF PERSONS TOTALLY DEAF ***
(Census, 1 June 1951)

<table>
<thead>
<tr>
<th>Age</th>
<th>Actual numbers</th>
<th>Rates per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both sexes</td>
<td>Males</td>
</tr>
<tr>
<td>All ages</td>
<td>13,616</td>
<td>6,856</td>
</tr>
<tr>
<td>of which:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-14</td>
<td>1,743</td>
<td>1,006</td>
</tr>
<tr>
<td>15-69</td>
<td>7,923</td>
<td>3,999</td>
</tr>
<tr>
<td>70 and over</td>
<td>4,949</td>
<td>1,849</td>
</tr>
</tbody>
</table>

*** Including Newfoundland, Yukon and North-West Territories

*** Deaf "***: only those persons who had no usable hearing; that is, excluding those who were partially deaf, such as those who could hear with the help of a mechanical aid.

Among the deaf population of 5-14 years, 70.1% were attending school. Among the deaf population of 14 years and over, 66.4% of the males and 12.6% of the females were reported to be in the labour force.

<table>
<thead>
<tr>
<th>Disability</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All ages (incl. unknown)</td>
</tr>
<tr>
<td></td>
<td>Both sexes</td>
</tr>
<tr>
<td>All persons with disabilities</td>
<td>435,539</td>
</tr>
<tr>
<td>Mental handicaps</td>
<td>13,819</td>
</tr>
<tr>
<td>Total blindness</td>
<td>42,463</td>
</tr>
<tr>
<td>Total deafness and deaf-mutism</td>
<td>59,659</td>
</tr>
<tr>
<td>Locomotor handicaps and hemiplegia</td>
<td>85,723</td>
</tr>
<tr>
<td>Amputation and non-specified deformities</td>
<td>87,729</td>
</tr>
<tr>
<td>Others</td>
<td>135,956</td>
</tr>
<tr>
<td></td>
<td>Males</td>
</tr>
<tr>
<td>All persons with disabilities</td>
<td>238,551</td>
</tr>
<tr>
<td>Mental handicaps</td>
<td>7,419</td>
</tr>
<tr>
<td>Total blindness</td>
<td>20,950</td>
</tr>
<tr>
<td>Total deafness and deaf-mutism</td>
<td>28,478</td>
</tr>
<tr>
<td>Locomotor handicaps and hemiplegia</td>
<td>42,640</td>
</tr>
<tr>
<td>Amputation and non-specified deformities</td>
<td>79,858</td>
</tr>
<tr>
<td>Others</td>
<td>78,706</td>
</tr>
<tr>
<td></td>
<td>Females</td>
</tr>
<tr>
<td>All persons with disabilities</td>
<td>166,988</td>
</tr>
<tr>
<td>Mental handicaps</td>
<td>6,400</td>
</tr>
<tr>
<td>Total blindness</td>
<td>21,713</td>
</tr>
<tr>
<td>Total deafness and deaf-mutism</td>
<td>31,661</td>
</tr>
<tr>
<td>Locomotor handicaps and hemiplegia</td>
<td>43,093</td>
</tr>
<tr>
<td>Amputation and non-specified deformities</td>
<td>7,871</td>
</tr>
<tr>
<td>Others</td>
<td>57,250</td>
</tr>
</tbody>
</table>

From: France, Institut national de la Statistique et des Études économiques, Direction de la Statistique générale (1950)
### Enumerated as Disabled

**March 1946**

<table>
<thead>
<tr>
<th>Rates per 100,000 population</th>
<th>Percentage distribution</th>
<th>Having professional activity, 15 years and over</th>
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</thead>
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<tr>
<td>All ages</td>
<td>Under 15 years</td>
<td>15 years and over</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Both sexes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1068.4</td>
<td>197.8</td>
<td>1303.3</td>
</tr>
<tr>
<td>34.7</td>
<td>20.4</td>
<td>38.3</td>
</tr>
<tr>
<td>30.1</td>
<td>11.6</td>
<td>33.2</td>
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<td>47.7</td>
<td>176.0</td>
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<td>215.2</td>
<td>39.7</td>
<td>262.1</td>
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<tr>
<td>230.3</td>
<td>10.5</td>
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<tr>
<td>341.3</td>
<td>57.8</td>
<td>417.3</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1370.2</td>
<td>213.3</td>
<td>1710.0</td>
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<td>23.2</td>
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<td>64.7</td>
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<tr>
<td>Females</td>
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<tr>
<td>796.7</td>
<td>161.5</td>
<td>949.9</td>
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<tr>
<td>273.1</td>
<td>50.7</td>
<td>323.3</td>
</tr>
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</table>

*Résultats statistiques du recensement général de la population effectué le 10 mars 1946. Vol. VI: Infirmes, Paris*
<table>
<thead>
<tr>
<th>Table V. Great Britain: Disabilities Qualifying for Registration of Disabled Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total disabled persons, both sexes</strong></td>
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<tr>
<td><strong>Ex-service and non-ex-service adults</strong></td>
</tr>
<tr>
<td><strong>Young persons</strong></td>
</tr>
<tr>
<td><strong>Numbers</strong></td>
</tr>
<tr>
<td><strong>Both sexes</strong></td>
</tr>
<tr>
<td>All groups</td>
</tr>
<tr>
<td>Surgical group</td>
</tr>
<tr>
<td>Amputation</td>
</tr>
<tr>
<td>Injuries and diseases</td>
</tr>
<tr>
<td>Tuberculosis (excluding respiratory diseases)</td>
</tr>
<tr>
<td>Medical group</td>
</tr>
<tr>
<td>Epilepsy</td>
</tr>
<tr>
<td>Other nervous organic diseases</td>
</tr>
<tr>
<td>Tuberculosis, respiratory diseases</td>
</tr>
<tr>
<td>All others</td>
</tr>
<tr>
<td>Psychiatric group</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Total deafness</td>
</tr>
<tr>
<td>Total blindness</td>
</tr>
<tr>
<td>All others</td>
</tr>
</tbody>
</table>

From: Great Britain, Central Office of Information, Reference Division (1954) *Rehabilitation and care of the disabled in*
TRATION UNDER THE DISABLED PERSONS (EMPLOYMENT) ACT, 1944

Persons, 20 April 1954

<table>
<thead>
<tr>
<th>Percentages</th>
<th>By category: all groups:100</th>
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<th>Young persons</th>
<th>From total disabled of each group: young persons, both sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total disabled persons, both sexes</td>
<td>Ex-servicemen and non-ex-servicemen adults</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Both sexes</td>
<td>Male</td>
<td>Female</td>
<td>Both sexes</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>40.3</td>
<td>40.3</td>
<td>40.3</td>
<td>40.3</td>
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</tr>
<tr>
<td>8.2</td>
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<td>8.2</td>
<td>8.2</td>
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<td>30.8</td>
<td>30.8</td>
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<tr>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>8.4</td>
<td>8.4</td>
<td>8.4</td>
<td>8.4</td>
<td>8.4</td>
</tr>
<tr>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
<td>6.6</td>
</tr>
<tr>
<td>27.3</td>
<td>27.3</td>
<td>27.3</td>
<td>27.3</td>
<td>27.3</td>
</tr>
<tr>
<td>4.6</td>
<td>4.6</td>
<td>4.6</td>
<td>4.6</td>
<td>4.6</td>
</tr>
<tr>
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<tr>
<td>14.0</td>
<td>14.0</td>
<td>14.0</td>
<td>14.0</td>
<td>14.0</td>
</tr>
</tbody>
</table>
Annex 2

PSYCHOLOGICAL ASPECTS OF REHABILITATION

The psychological adjustment to physical impairment and/or disability results from a great number of factors—namely whether the disability has existed since early childhood or has been acquired after maturity; whether the disability involves lesions of the central nervous system; the condition of the patient before impairment; and the social situation and the time interval between disability and rehabilitation.

1. Duration of the disability

Disability in early childhood contracts the patient’s milieu, and the sum of experiences which the sick child will have are less than those of the healthy child. This means that the handicapped child at times will show the picture of mental retardation. This mental retardation is artificial and solely due to the lack of adequate stimulation. The maturing of the personality of the child disabled very early in age will mostly be retarded and will show emotional sensitivity and dependence on parents and parent-figures.

Physical impairment occurring in the adult will have far different consequences. Adults will have lost part of their capacity for adjustment because of higher differentiation and specialization; it will also vary much according to age. The later in life impairment happens, the more the symptoms are complicated by feelings of anxiety and frustration. At still later ages, pre-senile and senile anxiety states and depressions are very often started by physical impairment. These states are not expressed in psychiatric symptoms but more or less in psychosomatic syndromes, increased accident rate, and so on.

2. Involvement of the central nervous system

In disability related to the central nervous system, whether caused by tuberculosis, cardiovascular disease or lesions of the central nervous system, the psychological results will always depend on the kind of personality concerned. In the case of central nervous system lesions, the picture is mostly overlaid by a special type of reaction: the person thus disabled has a reduced capacity for adjusting to new situations, which gives him a chronic anxiety with a tendency to stay in the same situation. The patient becomes conservative; in more intense states he develops compulsory traits.

If the lesion does not involve the central nervous system (as, for instance, in cases of tuberculosis, cardiac disorder or fracture), the psychological
reactions are governed by the sta
tleness of the patient’s personality. His
psychological adjustment to his disease or injury will consequently closely
resemble his general way of adjusting in life.

3. **Condition before impairment**

The condition of the patient before impairment can affect rehabilitation
prognosis; three kinds of pre-impairment situation may be noted:

(a) The first concerns the *pre-morbid personality*. This involves
intellectual factors, emotional stability, type of motivation, absence of
asthenic or cycloid traits of temperament. Persons with difficulty in
adjusting to their impairment are very often more or less mentally retarded.
The impairment produces too complex a situation for them to handle.
Combinations of mental retardation with emotional immaturity are naturally
very frequent, but in many cases one finds a slightly feeble-minded but
otherwise healthy and stable person who, if he gets some help in overcoming
the complexity of his situation, will make a very good adjustment and be
an excellent case for rehabilitation.

Emotional stability and consequent high frustration tolerance are the
most important mental factors influencing the person’s capacity for adjusting
to disability. In cases showing emotional immaturity (neurotics), treat-
ment and hospitalization involve very large risks. The patient is liable to
regress towards more childish ways of behaviour. He is content to accept
new but lower standards and this makes it possible to an astonishing degree
for him to subsist on extremely small disability pensions. The emotional
factor naturally colours the patient’s acceptance of his symptoms. Also
determined by the emotional stability factors is his capacity for making
contact with other people. Emotionally unstable persons develop disturb-
ances in their relation with other people. Social isolation is a symptom
one constantly finds with badly adjusted handicapped persons.

Good prognosis in rehabilitation work can be said to be correlated with
the degree of emotional maturity, a good ego strength, and a good capacity
for contacts. The prognosis is poor when the personality is badly inte-
grated—that is to say, if strong hypochondriac fixed organ symptoms are
found, such as paranoid traits, strongly developed depressions, anxiety or
psychopathic reactions. The asthenic factor also plays a large role. People
who, in a healthy state, are permanently living close to their maximum
capacity must, in the situation of impairment, naturally be less able to
produce the necessary efforts to adjust.

(b) The second concerns the patient’s *physical condition*. Adjustment
to the handicap will be affected by the physical condition of the patient and
the amount of physical training he has had. Very often one finds a com-
bination of, for instance, occupational factors with pre-senile conditions or
constitutional defects of special organ system. These purely physical
factors will naturally affect the patient’s psychological reaction to his physical disability, in addition to the increased impairment. How stable the disability is will likewise greatly influence these factors.

(c) The third concerns the psychological situation in which the patient becomes sick or injured; this very often carries a clear symbolic meaning. Compulsory personalities of a very highly strung type not uncommonly develop exacerbations of their coronary heart disease when placed in a situation which frustrates their career. Accidents are apt to happen on the way to, or back from, a meeting which involves strong emotional reactions of reproach and so on. Among industrial organizations, the narrow scope for even slight individual deviations from the standard behaviour leads to a tendency, especially with the less ripe personalities, to escape from chronic pressure by having accidents or unduly long drawn-out illnesses.

4. Social situation

The stableness of the social situation, and especially of the primary group, in which the person lives and works can affect the psychological reaction very considerably. Even very neurotic personalities can adjust to physical impairment if they are constantly integrated in a strong and healthy group.

Long hospitalization breaks this relationship, contracts the milieu and makes the patient more egocentric and his family more willing to react to his wishes. Immature personalities in such situations will let their behaviour be determined more by such internal factors as pain, tiredness, hunger, constipation and so on. The impaired or disabled adult is very much in the same situation as a child because of the smallness of his world, his egocentricity, and his way of reacting towards stimulation of the primitive type. This leads to a decrease in interest and to accentuation of dominance, intolerance and egocentricity.

The social situation involves not only this but also the reaction of people outside the family to the patient’s sickness or disability. To a much greater extent than is usually realized, people have strong negative attitudes towards the disabled.

5. Time interval between disability and rehabilitation

The time interval between the disability and rehabilitation has a deciding influence on prognosis. If this period is very long, the psychological factors will be more exaggerated and the prognosis will be worse. Experience in one country indicates that if the interval is longer than three years the prognosis, even in a well-developed rehabilitation system, will not be good.

All these factors must be borne in mind when the patient’s psychological reaction towards his impairment is discussed, and therapy will naturally be
affected by them. There are two lines which must be emphasized as especially important. The first one is an individual line: to make the patient accept in his body image the new defects. When this body acceptance is established an acceptance of reality is easier. Acceptance of reality means acceptance of a social re-integration. The second one is: to bring the patient into group activity. This is a paramount measure. At times complicated psychological therapeutic measures have to be used, but as a rule psychological therapy can be limited to these two activities.

Annex 3

REHABILITATION IN THE LESS DEVELOPED COUNTRIES

1. Basic considerations

It is essential to consider rehabilitation provision in relation to the social pattern in which it is to work. Even among the countries where this work has reached its highest levels, differences in social patterns affect both the organization and the practice of rehabilitation. It has to be remembered, however, that the most advanced schemes are, with a very few exceptions, to be found in the western European countries and North America, and that in spite of differences in the method of social organization those countries do not differ very widely in levels of living, in the completeness of medical care, however provided, and in basic economic characteristics.

Though each of those countries would admit that it has still more than a little to do in the way of improving its own rehabilitation services, the basic world need is to develop rehabilitation in countries which have either very modest provision or none at all. This obviously cannot be done by transplanting without change the sort of services which have succeeded in the highly developed countries. There are three reasons for this. One is the difference in the actual need, the second is the difference in the pattern and level of development of medical and social services, and the third is the difference in the social and economic setting of the individual.

So far as need is concerned, the most obvious consideration is that the prevalence of different kinds of handicapping defects varies according to the state of development of a country. For example, leprosy still causes a substantial amount of crippling in parts of Africa, and there are regions where trachoma is still a prolific producer of blindness. Bone and joint tuberculosis is a major problem in many lands. Birth injuries account for a considerable amount of handicap in childhood in countries where the maternity services are poor. On the other hand, industrial accidents and automobile accidents are uncommon in mainly agricultural countries, and since these are among the commonest causes of acquired disability in adults,
there is, in the less-developed countries, a greater relative incidence of handicap which starts in childhood and a greater relative need for services for handicapped children.

Differences in medical and social services can be quickly summed up. The less developed the country is, the fewer are its hospitals, its doctors and its nurses, the more inadequate its child-care service, its school health service, its educational service and its general provision for social care and welfare. The less-developed countries are lacking in orthopaedic surgeons, and in well-equipped units where those surgeons can work, and they have few, if any, trained and experienced ancillary workers such as physiotherapists and occupational therapists.

In the highly developed country case-finding is done by the general medical services and the public health service, the latter playing a particularly important part. The hospital or the general practitioner sees the patient in acute illness and can refer him for rehabilitation if that is indicated, but there are many handicapping disabilities which are congenital, which arise without acute initial illness or obvious injury, or which develop as the late, rather than the immediate, sequela of illness. The early detection of these depends upon the existence of some provision for the regular oversight of children who are apparently in good health, and unless there is an adequate child health service, with health visitors and school clinics, and a system of school medical inspection and supervision, a service for handicapped children will be working under difficulties. The public health services may or may not themselves provide rehabilitation services, but if they do not they are still the eyes and ears of good provision for young handicapped people. Where these services are not well developed, case-finding is incomplete.

The difference in the social and economic setting of the individual affects the aim and character of rehabilitation work. Its essential object, in whatever country it is undertaken, is to fit the patient for as full a life as possible in his natural environment. Life in a less developed country, with a high proportion of unskilled occupations in agriculture and simple industry, places a premium on physical fitness as against intelligence in the earning of a living. Such a country has a smaller range of industrial employments open to those with a permanent partial physical disability, and it cannot give much scope to the blind for work as telephonists and typists. It does not offer the intelligent person who is physically severely handicapped much opportunity of finding work in which his brain can support him though his body cannot.

2. Prevention

There is no doubt whatever that the scope for the prevention of handicap is enormous in these countries, and for that reason it should be given high
priority. At the same time it must be appreciated that preventive measures will tend, in many countries, to change the shape of the problem rather than its size. The most straightforward problem is that of blindness; most of the blindness in the less developed countries can be, should be, and no doubt, will be, prevented by active measures which are already being introduced on varying scales. Bone and joint tuberculosis will depend for its prevention on general and specific hygienic measures which must take many years to develop. Birth injuries will be reduced in both frequency and gravity by the improvement of maternity services. Better hygiene and better maternal and child health services will reduce the infant and young child mortality and will improve the chances of survival of the individual. At present, in countries with a high mortality rate among children a high proportion of handicapped children die before they reach the age of four or five years. The measures which will, on the one hand, tend to reduce handicap will, on the other, promote the survival of handicapped children who would otherwise have died, and will thus increase the number of the handicapped requiring care and rehabilitation.

There are other long-term possibilities which have to be borne in mind. Poliomyelitis, for example, is a disease which has recently become increasingly prevalent in many of the less developed countries. While there are possibilities for its prevention with the development of newer methods of immunization, it remains to be seen whether their application in these countries will be practicable and effective. So little information is available about the prevalence of the "minor" infectious diseases that it is impossible to say whether rubella is widespread in certain countries or not, and whether the incidence of congenital deformities produced by rubella during pregnancy is already maximal or may increase later. Nor must it be forgotten that better medical services will tend to reduce the chance of death after accidental injury and to increase the probability of survival with disability.

3. Rehabilitation services for the handicapped

From these many and complex possibilities it is possible to make certain general inferences. The most important one is that in these countries which are in the earlier stages of social and economic development (and in the rural regions of countries of uneven development) the most urgent problem is that of providing services for the physically handicapped. One can even go so far as to say that while initially the concentration will be on providing those services for adults and older children, it is probable that in a few years the care of handicapped children will become more urgent.

The nature of the disabilities which are most commonly met with, and the fact that cases are presented for treatment long after the onset of the disability, makes adequate provision for orthopaedic surgery the first and fundamental need. None of the other phases of rehabilitation of the
physically handicapped can begin until this is provided. Initially this will require external aid in the form of money and materials and staff training, but once a scheme is started a country's first pilot project will become in that country a focus for the training of staff for other centres.

Ancillary staff will also be needed from the start, but it will be at least as difficult to build up a cadre of physiotherapists and occupational therapists as to build up the surgical and nursing staff—probably more difficult. Occupational therapy as it is known in the highly developed countries is not an immediate need because, as already mentioned, the variety of employments is limited and that part of occupational therapy which leads to re-training for new work will have little scope. The basic need is to restore, so far as possible, fitness for unskilled labour, though one might add on the credit side of the balance sheet that in the less developed countries there are still some opportunities for men to become self-supporting in such simple handicrafts as pottery and weaving. While a long-term programme must look forward to a system of full training of ancillary workers combined with registration, the immediate programme must accept the expediency of giving short, local training to suitable people.

The provision of prostheses will also need early attention. Again, a comparatively simple start will be necessary and, fortunately, practicable. The elaborate modern prostheses of the West are not at first essential, because the worker does not need to perform the many skilled, precise movements common to highly developed industry. In any case, the sparsely populated rural areas cannot easily provide for the maintenance of elaborate prostheses. Prosthetic workshops can therefore concentrate on simple apparatus to meet local needs; they will expand and acquire experience in the more complicated types of prosthetic work in time to deal with it when it becomes necessary.

Special schools for the physically handicapped have so far been established in countries where there is already a good general educational system, and some authorities suggest that it is undesirable to provide for the handicapped minority when there are as yet too few schools for the normal majority. This is open to question. In countries where education is restricted and, therefore, literacy is limited, there are more vacancies in employment for the literate than can be filled—literacy is, in fact, a sure passport to employment. Where this is the case, to give the physically handicapped child basic education is to give him a ticket for a job in which he will be able to make good in spite of his disability.

On balance, therefore, there is a case for educating the intelligent physically handicapped child. If there is an ordinary school near to hand and his disability is not too severe, that school may meet his need. But not all the less developed countries have a free education system and not all parents in those countries are prepared to pay fees for the education of a child in whose future they have no confidence. This can be met either by
remitting school fees for the handicapped or by educating the parents; the former offers the better chance of early success.

The boarding-school for physically handicapped children must be the answer where schools are few, distances great and transport lacking, but it may seem hard to justify the use of money and skilled teachers for such work in countries where there are still far too few schools for ordinary children. A beginning could, however, be made by introducing education into the long-stay wards of orthopaedic hospitals, and indeed one might go so far as to say that no orthopaedic hospital in any country which has children for long periods of care and treatment should be without one or more teachers. With this as a beginning, other educational provision is certain to evolve.

The position is more difficult when the function of the special school is not merely to give general education but to provide actual therapy for the child, as particularly in the case of the spastic. The cost of such schemes in terms of money and materials, the availability of skilled staff, and the prevalence of cerebral palsy in the country all enter into consideration. In many countries this last factor is complicated by the low survival rate of children with cerebral palsy. It would seem that initially the need might be met in part by admitting spastic children to special schools which take children with other types of physical handicap, and by making some provision for their special care in those schools. Perhaps it is worth mentioning at this point that in every branch of work for the handicapped it is better, in the less developed countries, to make simple provision now and expand it later than to seek to make perfect provision at once. Where resources are limited it is often a mistake to concentrate too much on one part of a scheme to the probable detriment of others.

3.1 Blindness

In the first stages of the provision of rehabilitation services, some facilities for the blind are essential, and the probable reduction of the blind population within ten or fifteen years ought not to cause hesitation in providing those facilities. Here again, it is necessary to think in terms of local conditions.

The rural areas of the less developed countries accept and absorb blind persons fairly well. The blind man in an African village has no need to travel far and can quickly learn to move about his immediate neighbourhood with confidence. Few of his fellows can read, so that his inability to read places him at no material disadvantage. To take him away from his village and family in order to teach him skills which he does not need and probably will have no occasion to practise is wasteful, officious and even cruel. Probably he can be best helped by the type of scheme which is now being tried in Uganda, where local centres are beginning to train the rural blind for
work on the land so that they can become self-supporting on small holdings. It is the fashion to despise the craft training of the blind which used to be the mainstay of blind welfare work in the highly developed countries, but, as already mentioned in the case of the physically handicapped, these crafts have a place in rural economy in the less developed countries and should not be lightly discarded.

For the urban blind, the problem is different. They have to face many of the problems which confront urban blind people in the highly developed countries and they need to be trained for urban life. Provision of special schools is, therefore, both desirable and necessary. Their work must, however, be related to local circumstances. Braille teaching presents a special problem; not all languages have yet been transliterated into braille, and even where the general language of the country has been so transliterated it may have local variants and dialects. Even if a vernacular braille system exists it will probably provide for little more than the basis of general education, so that the blind person who wants to go on to higher education will have to learn a second language—in Braille—before he can have access to the textbooks and literature which he will need.

The successful placement of many blind people in "normal" employment in more highly developed countries has been due to the wide variety of employments available and the susceptibility of the machinery of those employments to adaptation for use by the blind. These conditions do not obtain to anything like the same extent in the less developed countries, and having regard to the higher proportion of blind people in the population the prospects of integrating the blind into general employment are strictly limited. This means that the sheltered workshop, in spite of its acknowledged limitations, will have to play a considerable part for a long time to come in finding work for the blind.

3.2 Deafness

The deaf present perhaps the most difficult technical problem of all in the less developed countries. Statistics on the prevalence of deafness are hard to come by, but it is certainly a substantial problem and is likely to increase in incidence as children survive the injury or infection which has produced their deafness. Modern techniques in the highly developed countries are becoming extremely successful in diagnosing hearing defects early, in providing the child with a hearing aid and in teaching him to speak, since most "deaf" children have some remnants of hearing which can be used in the building-up of speech. In the less developed country, a major degree of deafness leads inevitably to mutism. Early diagnosis is possible only where child health services are highly developed and have adequate, skilled staff. The provision of audiometers and hearing aids on a large scale is out of the question for some time to come. Moreover, the tech-
nique of teaching the deaf to speak has to be carefully worked out for the language of every country in which the work is done.

In the rural areas of the less developed countries the deaf already learn agricultural techniques and local crafts by imitation and make their basic needs understood to their families and their neighbours by sign language. As in the case of the blind, it is in the urban areas that their difficulties are greatest. Planning for the ultimate development of modern methods for their care and training should certainly be considered, but in the meantime simpler techniques will have to suffice. Deafness does not greatly restrict a person’s potential range of work; its primary effect is to impede him in learning, and this disadvantage can be overcome by using visual methods of vocational training. The deaf child can also receive education in basic general subjects by visual methods and, according to the circumstances, should receive some education in a special school or special class or even in an ordinary school.

3.3 Chronic Illness

Pulmonary tuberculosis is still a major problem in a large number of the less developed countries. Plans for its control by case-finding and chemotherapy, with BCG vaccination for the uninfected, are already in hand and are making some headway, but they will not radically change the picture within the next twenty years. The survival rate will certainly increase, however, so that these countries will have to deal with an increasing number of people whose disease has been arrested but whose respiratory function is impaired and whose general employability is restricted. Not for a long time will the point be reached at which the disease is regularly detected at such an early stage that chemotherapy effects an arrest which is virtually a complete cure.

The needs of these people will have to be met by a variety of means. The possibilities of making some attempt to reserve certain types of work for them might be explored and so must the value of sheltered workshops and “settlements”. In spite of the arguments which have been advanced against settlements on social and other grounds in the highly developed countries, they may certainly have a future in these less fortunate lands.

Problems arising out of chronic cardiac invalidism and the like are not yet met to any substantial extent in these countries. The principal reason is very probably that the cardiac invalid dies young because the techniques which would save him are not yet available on an adequate scale. The development of general medical services and improved standards of living will progressively bring these problems and those of the chronic degenerative diseases more and more to the front. At present, rehabilitation for such patients may be required on a limited scale in countries where development
has reached a middle level, but need not occupy a prominent place in the initial work in the less developed countries.

3.4 Mental defect and mental illness

The rehabilitation side of mental health work is also, at present, a secondary problem in the less developed countries. Mental subnormality undoubtedly exists, but the social and economic conditions are such that the mentally subnormal can easily be self-supporting in unskilled labour, and their limited powers are adequate to their problems of daily living which are, of course, much simpler than those of complicated city life in a highly developed country. Special school and other provisions for them can be developed progressively as the need becomes manifest with the progress of urban and industrial development in the country.

Mental illness—neurosis and psychoneurosis—appears to be less common in the less developed countries. Whether this is due to lack of recognition or to a genuinely low incidence remains to be seen. Certainly, the emotional strains and stresses reputed to cause neurosis in highly developed countries are not so frequently found, and there is less "bottling up" of the emotions. On the other hand, problems of mental ill-health are beginning to occur in countries where rapid economic developments are taking place and the people are finding themselves in difficulties in reconciling the new ways of life with their traditional ways; it is not impossible that psychological rehabilitation may become a problem in some of these countries in the fairly near future.

3.5 Public education

This is considered in the body of the report (see page 19) and no more comment need be made here than that the less developed the country, the greater is the need for such public education.

4. The international approach

There is no need in this report to discuss in detail the assistance which can be given by international organizations and agencies in the establishment of rehabilitation services in a country, but one aspect of the problem might have some brief comment, namely, that of the training of local staff. Until recently, training courses had to be held and fellowship periods spent in one or more of the relatively small number of countries which have built up rehabilitation services. The quality of the training was high, but it had the important failing that the student or fellow was learning about rehabilitation as it was practised in the host country with its special social circumstances, and what he saw bore no immediate relation to the particular problems of his own country. The gap between the urbanized parts of the
countries which have reached a middle stage, and those which are highly
developed is not so great that an intelligent and broad-minded worker
cannot himself translate what he sees into the social idiom of his country,
but the gap between the rural parts of an under-developed country and the
urban parts of a highly developed country is so much greater that it is very
hard to bridge.

In the first stages of the United Nations programme of rehabilitation
development, it was felt that this problem could be considerably lessened if
among the schemes and centres sponsored there were some in countries of
middle development which could serve as demonstration projects for a
region, and, in due course, as centres for the training of staff from a group
of neighbouring countries which were in the process of setting up their own
schemes. This would offer people from those countries a chance of watch-
ing a scheme in the building rather than seeing it only when it was completed,
and would also let them see rehabilitation work in a country whose social
and economic conditions were not utterly different from their own. It is
still only five years since the first centre of this kind was set up, and too
early to draw final conclusions, but the experience of those years suggests
that the idea has its merits and that it might be used more widely in building
up services in all branches of rehabilitation work.
Annex 4

LIST OF SUPPORTING DOCUMENTS *

WHO/Rehab./5 Draft agenda
WHO/Rehab./6 Background information on medical rehabilitation services in different countries, by WHO Secretariat
WHO/Rehab./7 Medical rehabilitation and social medicine—Medical, social and economic values of rehabilitation, by C. J. S. O’Malley
WHO/Rehab./8 Suggested classification of physical disabilities, by C. J. S. O’Malley
WHO/Rehab./9 Basic principles and aims of medical rehabilitation, by C. J. S. O’Malley
WHO/Rehab./10 Types of rehabilitation services, by C. J. S. O’Malley
WHO/Rehab./11 WHO rehabilitation activities, by WHO Secretariat
WHO/Rehab./12 Some observations on the concept of medical rehabilitation, values of rehabilitation, basic principles and aims of medical rehabilitation, and education and training in medical rehabilitation, by R. Soeharso
WHO/Rehab./13 Need for co-ordination of all services and activities for the functional and occupational rehabilitation of physically handicapped persons, by J. Pariot
WHO/Rehab./14 Programme planning and organization of medical rehabilitation services, by M. Maurer
WHO/Rehab./15 Rehabilitation in the less developed countries, by J. D. Kershaw
WHO/Rehab./16 Education and training in medical rehabilitation, by M. Maurer
WHO/Rehab./17 Education and training in medical rehabilitation, by F. S. Cooksey
WHO/Rehab./18 Co-ordination of rehabilitation with public health and social services, by J. D. Kershaw

* Copies of these documents are available on request to WHO.