Rehabilitation Medicine

The Management of Physical Disabilities

Second Edition

P.J.R. Nichols

Acknowledgements

We would like to express our sincere gratitude to all who have helped by sharing their knowledge and experiences of rehabilitation with us. Our views and attitudes are continually changing under the influence of our colleagues through the patients they refer to us, by consultations, by case conferences and by private discussions. In this sense we owe a considerable debt of gratitude to all the medical staff of the Nuffield Orthopaedic Centre and the Nuffield Department of Orthopaedic Surgery, and in particular Dr A. G. Mowat.

We are also indebted to Dr D.J. Lane and Dr W.S. Hamilton of the Chest Clinic, Churchill Hospital for help with the chapter on chronic bronchitis.

Dr E. Williams read the manuscript and contributed many helpful suggestions which have been incorporated.

We would like to pay tribute to Mrs C. Newman, Mrs E. Payne and Mrs N. Wright who undertook the typing.

Contributors

E. A. HAMILTON
MA, BM, BCh, MRCP, DPhysMed,
Mary Marlborough Lodge, Nuffield Orthopaedic Centre, Headington, Oxford
Assistant Medical Officer, Oxford Artificial Limb and Appliance Centre, Nuffield Orthopaedic Centre, Headington, Oxford.
Rivermead Rehabilitation Centre, Oxford.

B. L. HAZLEMAN
MB, MRCP,
Consultant Rheumatologist, Addenbrookes Hospital, Cambridge

P. R. MARTIN
BSc, DipPsych, DPhil,
Research Clinical Psychologist, Oxford Rehabilitation Research Unit, Nuffield Department of Orthopaedic Surgery, University of Oxford.

M. J. ROSE
FRCS,
Clinical Lecturer, Oxford Rehabilitation Research Unit, Nuffield Department of Orthopaedic Surgery, University of Oxford

J. R. SILVER
MB, BS, MRCP(Ed),
Consultant in Spinal Injuries, National Spinal Injuries Centre, Stoke Mandeville Hospital, Aylesbury, Buckinghamshire

C. B. WYNN PARRY
MBE, MA, DM, FRCP, FRCS,
Consultant in Rheumatology and Director of Rehabilitation, Royal National Orthopaedic Hospital, Stanmore, Middlesex

Preface to the Second Edition

In this edition there are new chapters on head injury, spinal paralysis, the sexual problems of physically disabled people, the psychological aspects of physical disabilities, and research in rehabilitation.

The original text has been revised and updated, although some chapters required much less than others.

I am very grateful to my original collaborator, Dr Ann Hamilton, for help in the revision and for her chapter on sexual problems. I am also indebted to my friends and colleagues who have contributed chapters and those who have helped with their comments and criticisms, and in reading and revising manuscripts.

I particularly wish to thank Mrs N. Wright and Mrs E. Payne for all their hard work in typing and checking references.

P. J. R. N.

Contents

1 Organization of Rehabilitation Services

INTRODUCTION

In the early years of this century, the spa towns were centres for much of the physical treatment used in the management of patients. They specialized for the most part in the treatment of 'rheumatism' and other medical disorders of the locomotor system. In addition to hydrotherapy (or balneotherapy) the physical treatments employed included electrotherapy (heat, light and electrical stimulation), movements, manipulation and massage. In 1931, the Section of Balneology and Climatology of the Royal Society of Medicine fused with the Section of Electrotherapeutics and formed the Section of Physical Medicine, and the speciality of 'Physical Medicine' was created.

The majority of patients for whom physical treatment is prescribed are those suffering from 'rheumatic conditions' which are subject to natural remissions and exacerbations. The response to treatment will depend on the patient's motivation as well as the personality of the therapist.

Thus, the scientific evaluation of physical therapy is very difficult, and much physical therapy remains empirical in its use and unproven in value.

Partly because of the inexactness of diagnosis and treatment, and partly because physical therapy is only a part of the total management of patients, the term 'physical medicine' has fallen into disrepute. 'Rheumatology' has emerged as a clinical specialty with close links to General (Internal) Medicine. *Rehabilitation* is an appropriate term to embrace the many physical, social and organizational aspects of the after-care of most patients who require more than acute, short-term definitive care.

REHABILITATION

Principles

Although the term 'rehabilitation' has taken on many different meanings, in its widest sense it 'signifies the whole process of restoring a disabled person to a condition in which he is able, as early as possible, to resume a normal life'.*

*From Report of the Committee of Enquiry on the Rehabilitation, Training and Resettlement of Disabled Persons (1956), par. 5. Chaired by the Rt. Hon. Lord Piercy, Cmd. 987. London; HMSO.

There can therefore be no doubt that it is the concern of all clinicians but with a differing emphasis in different specialties.

There is a relative lack of interest among the medical professions in the problems of convalescence. Publications on the subject are scanty, little research has been undertaken, and little attention has been devoted to the medical aspects of recovery. The main interests of clinicians often lie only in diagnosis and acute definitive treatment. The doctor's role in the convalescent period is often considered of minimal importance, and the patient's attitude during the period is traditionally passive.

Rehabilitation is 'creative convalescence', and as such, represents that active contribution made by medical, paramedical staff and patient to the restoration of health during the recovery phase which follows the intensive definitive treatment.

The rehabilitation principles laid down by Robert Jones in his 'curative workshops' during the First World War were not widely taken up during the 20 years of peace, but in the Second World War, specialists of various clinical disciplines in the armed forces and emergency medical services combined to establish the modern approach of full-time intensive orthopaedic rehabilitation and converted 'convalescence' into 'rehabilitation'. The pattern was developed by grouping patients with similar disabilities, narrowing the remedial aims of each group, increasing the number of groups or classes and grading their activity to enable patients to make a graduated progression through the classes as functional improvement occurred. Each class had an activity programme based on a few simple, remedial exercises, e.g. 'quadriceps setting exercises' or 'walking exercises' or 'shoulder mobilizing exercises' or 'spinal extension exercises'. Management was augmented by specific physiotherapy, occupational therapy, and hydrotherapy where necessary.

Most patients admitted to hospital require little in the way of complex rehabilitation, *providing the supervising clinician clearly communicates to the patient, relatives and family doctor, the expected progress of the disease and the outcome of treatment.* The will to recover, which is inherent in most patients, is intensified where confidence in those who give medical care is shown to be justified by good treatment and manifest understanding of their problems.

Some patients, however, do benefit considerably from periods of intensive rehabilitation and a more closely supervised convalescence. Such patients need admission to a centre which is structurally and functionally orientated towards recovery; where a purposive atmosphere instils confidence; and where the individual skills of a rehabilitation team are integrated and co-ordinated to assist each patient to achieve maximal functional efficiency. Within the category of patients needing these special rehabilitation facilities are those with multiple injuries; those with complex lesions – such as crush injuries of the hands or injuries of the head or spine; and those requiring a high standard of physical fitness before return to work is possible.

The intensive full-time regime, and the later integration of retraining for work with the initial rehabilitative exercise programme are of the utmost benefit.

The majority of patients with illnesses and injuries which have had efficient primary definitive treatment can be rehabilitated within the organization of the District General Hospital as in-patients, as out-patients on a Day Hospital basis, or as residents in a hostel. With adequate rehabilitation, the incidence of prolonged morbidity can be significantly reduced, and the duration of disability

can be shortened, provided patients start their planned rehabilitation soon after the onset of disability.

There is considerable evidence that delay in *making* decisions and delay in *communicating* decisions can increase morbidity and delay return to work.

The advantage of organized rehabilitation lies in its ability to combine an integrated medical and functional assessment with the co-ordination of the activities of the many agencies (medical, social, educational and industrial) concerned with a patient's return to work. There is a particular advantage to be gained by combining the medical and industrial sections into a single rehabilitation unit, so enabling the patient's rehabilitation to progress smoothly without unnecessary delays.

Probably one in three patients discharged from hospital would benefit considerably from a period of 'rehabilitation' to speed recovery of function and confidence, and to allow for realistic planning of return to work. The benefits to the individual patient from such a rehabilitative period are complemented by the economic advantage to the community.

Rehabilitation after injury

If the patient has a residual disability, discussion between the doctor (either hospital or general practitioner) and the employer, directly or through a medical social worker or Disablement Resettlement Officer, is often sufficient to enable the patient to return to work. But too often, the appropriate decisions are not taken, or decisions depend too much upon personal idiosyncrasies or variations in organization of the local medical services.

Uncomplicated appendicitis is characterized by rapid and smooth recovery, but traditions, the patient's domestic convenience, the whim of the individual surgeon and the hospital bed state are the determining factors influencing the length of the patient's stay in hospital. For example, the period before returning to normal activities after uncomplicated appendicitis varies considerably: 10 days for housewives, 14 days for schoolchildren, and up to 70 days for insured men.

Fractures of the wrist or hand are relatively minor injuries, rarely associated with complications, requiring only a short period of immobilization of the hand and wrist and resulting in little interference with function. After such fractures, patients in manual work usually have considerably more time off work than those in sedentary occupations, and although litigation may be involved in about one third of the cases, there may be little evidence of impairment of motivation to return to work.

Although some patients could manage while in plaster, they often do not return to work as they may feel, not unreasonably, that the wearing of a plaster might interfere with work and render them unacceptable to an employer. Indeed, it seems clear that it is part of the hospital doctor's duty to dispel these doubts and make an authoritative recommendation as regards the patient's fitness for work. When such action is taken, there is a need for close and rapid communication between hospital and general practitioner so that the GP can back up the hospital's recommendation for return to work.

If rehabilitation is taken to mean the promotion of maximal possible recovery, then whenever there is a patient with a physical disability, appropriate physical rehabilitation service must be provided. In this context, one must not forget that recovery depends on the patient's mental concentration, endurance and motivation almost as much as his physical capability, and it is usually necessary

to stream patients so that the elderly, frail and those with chronic disability are separated from the young and vigorous with temporary disability.

Rehabilitation and medical conditions

Stroke patients and patients with rheumatic disorders make up a high proportion of those with chronic physical disability. The physical management of these patients differs from the rehabilitation of patients with injury both in tempo and in pattern of activity, and because their numbers are so large, they have shifted the emphasis of physio and rehabilitation departments from corrective treatment to preventive and restorative management.

In the case of rheumatoid arthritis, it has been shown that with early diagnosis and treatment and regular follow-up and intensive care during remissions and exacerbations, a high proportion of patients can be kept independent at home and at work.

In a retrospective survey of results of treatment in one Rheumatology Centre, over 60 per cent of the patients remained fit for full or restricted work over a follow-up period of 6 years. The majority of the patients with rheumatoid arthritis could be improved functionally by planned rehabilitation, although the men were often unable to continue in either heavy manual work or very skilled work. With increasing advances in surgical techniques for the management of rheumatoid arthritis, the proportion of patients remaining at work should increase (*see* Chapter 4).

Stroke is one of the commonest causes of locomotor dysfunction. With adequate rehabilitation, about 20 per cent of stroke patients will return to full work and a further 30 per cent will make a useful contribution about the home. Thus, approximately 50 per cent of those affected can achieve a working status. It is the impairment of intellectual function and speech defects which are usually the stumbling blocks to resettlement, and these are related (as with head injuries) to the extent of the original lesion and the subsequent brain damage (*see* Chapter 10).

Rehabilitation of amputees

The rehabilitation of the young patient with amputation of the lower limb presents problems which are usually readily solved or ameliorated (*see* Chapter 12). Nowadays, however, over 60 per cent of all amputees are over 60 years old and suffering from peripheral vascular disease; unfortunately, amputation is often carried out as an ablative procedure after many other procedures directed towards saving a gradually dying limb. The patient, being elderly, often responds poorly and is resigned to a severe physical handicap. A better approach would be to accept amputation as the first stage in regaining active function and as a necessary preliminary to satisfactory limb-fitting in all but the very senile.

The use of 'early walking aids' enables many lower limb amputees to be mobilized as early as possible while still in the surgical ward. With such aids, many patients can be returned home walking a few weeks after amputation.

A well-organized, integrated limb-fitting service, backed by the rehabilitation services, can ensure the provision of the appropriate appliance or prosthesis at the right place at the right time (*see* Chapter 13).

A similar dynamic approach can be applied to upper limb amputation. Intensive rehabilitation instituted soon after amputation, together with the use of temporary training devices, leads to early return to work and a greater acceptance of functional artificial arms.

Rehabilitation after surgery

Rehabilitation after surgery or amputation, or reconstructive orthopaedic surgery, is an accepted part of patient care. But there are many other surgical patients for whom the need for rehabilitation is less obvious. The rehabilitation services they require include counselling, provision of appropriate appliances and training in the use of these appliances. Two particular groups of patients for whom these services are essential are women who have had a mastectomy, and patients who have been given an ostomy.

Mastectomy is often as distressing as an amputation of a limb, and much of the distress and embarrassment can be avoided by understanding preoperative discussion with the surgeon or ward sister; immediate post-operative provision of a lightweight prosthesis which can be worn over dressings, and early referral to the Appliance Service for a more permanent breast prosthesis.

Ostomies too often are also the source of distress and embarrassment. Once again, early counselling, both general and detailed factual, is the basis of rehabilitation. Early fitting of the appropriate appliance and training in its use are the foundations of post-operative management. Some hospitals and some manufacturers employ a 'stoma therapist' who is usually a nurse specially trained in stoma care. Some areas have a panel of ex-patients with ostomies who will act as a source of information and help to potential and actual ostomates.

Training in management of the appliance, care of the skin and control and understanding of the behaviour of the gastro intestinal or urinary system are essential.

After an ostomy the patient needs understanding, efficient equipment, and considerable encouragement to achieve return to optimal independence in daily living.

Rehabilitation of spinal injuries

Spinal injury units were established because of the need to assess, treat, rehabilitate and initiate resettlement of patients suffering from paraplegia and other disabilities resulting from spinal injury. The clinical and rehabilitation needs of these patients were such that an integrated spinal injury organization was a natural solution.

Since the institution of Spinal Injury Centres, the results of treatment and rehabilitation have steadily improved, and now some Centres claim that 40–60 per cent of paraplegics return to work or domestic independence. Achieving these results depends on a high standard of initial definitive treatment and a co-ordinated and intensive period of rehabilitation; this involves training in bladder care, skin care and a wheelchair existence, and usually extends over a period of 6–9 months.

Ideally these Centres should be sited at District General Hospitals with adequate supportive facilities, and should form a focus for much of the rehabilitation services of that particular District General Hospital.

Head injuries

The majority of patients with head injury suffer a minor injury requiring only simple treatment. Good initial assessment followed quickly by a period of attendance at the rehabilitation department of the District General Hospital is all that post-concussion syndrome requires.

The more severe head injury patient requires a sophisticated system of progressive care involving physical rehabilitation together with educational,

speech and behaviour therapy. Intellectual impairment with loss of memory, loss of concentration, loss of sense of responsibility, and emotional lability and depression are the main adverse features.

There is considerable pressure for the provision of special Head Injury Rehabilitation Centres in association with Neurological and Neurosurgery Centres. Such Centres require residential accommodation and a high ratio of staff to patients.

Some patients with head injury tend to be aggressive and require close collaboration between neurological, psychiatric and rehabilitation staff. In severe cases, the process of rehabilitation may extend over many years; but with good facilities for physical, psychiatric and industrial rehabilitation and follow-up, many patients with head injury can be returned to work in the community.

RESETTLEMENT IN WORK

Resettlement may be defined as the process of returning the patient to the most appropriate social situation. Planning resettlement must start as soon as the immediate definitive treatment is under way, with the aim of returning the patient to his original work and way of life, while overcoming any residual disability as far as possible and reducing the handicap to a minimum.

Resettling a disabled patient in work depends on many factors besides the severity of the disability. Among such factors are: the age of the patient, the nature of the work, the patient's education and domestic background, together with social and economic factors. One of the most relevant points affecting the success of resettlement is the time elapsing from the onset of disability until the definitive plans for return to work or training are brought into effect.

For some patients, return to their original work is not possible, and a detailed reappraisal of their working capability is necessary as a preliminary to retraining and re-employment.

In 1974 the responsibility for the country's employment and training services was transferred from the Department of Employment to a public authority—the Manpower Services Commission (MSC); it had, until April 1978, two executive arms: the Employment Services Agency (ESA) and the Training Services Agency (TSA). Thereafter they became operating divisions of the MSC. The Employment Service Division is responsible for about 1000 employment offices and job centres; within this organization are about 500 full time DROs, all of whom have been trained as executive officer employment advisers (up to 25 weeks) followed by 10 weeks special training. During the past few years a limited number of DROs have been attached full time to hospitals. The DRO's main task is to place disabled people in suitable work, if necessary after employment rehabilitation or vocational training. He is envisaged as playing the key role, acting as an intermediary between industry and the client and as an employment adviser to the disabled person in co-operation with the health services. There has been some pressure for integrating the work of DROs within the health and social services, but the current policy is that they should be part of the MSC staff who take up the resettlement of disabled people as a temporary role. Their success will depend upon early intervention to help prevent the disabled person relapsing into attitudes which delay return to work and employers from developing resistance to re-employment of the employee as a disabled person. But it is equally important that the DROs advise the clinical and social team about the possibilities and suitability of employment for the patient, and this

will depend upon factors far beyond the clinical one – e.g. the patient's work record, job availability, and work requirements of specific jobs. The great advantage of the DRO system is that it could provide the vital link between patient, health services and industry, but currently it only provides this in a very limited capacity.

Unemployment in 1976 increased continuously at 10 000 per month and in June 1977 the seasonally adjusted figure reached the highest figure since the war at nearly 1.3 million in a total working population of about 22 million.

In 1977, the ESA, through its resettlement service for disabled people, with its staff of about 1800 placed about 50 000 disabled people in employment. Through the employment rehabilitation service, about 14 000 undertook courses of training at 26 centres (Brown, 1977). At the same time, 13 000 employees were in sheltered employment (MSC, 1977). It is difficult adequately to evaluate the effectiveness of this system for the ESD are now begining to take a more detailed look at the workings and aims of ERCs and are improving the follow-up of trainees. Most patients have temporary disabilities and those hospitals with access to well developed rehabilitation services usually succeed in getting patients back to their own jobs or other jobs closely related to the previous work. When necessary they re-assess, organize training, and arrange placement, seldom finding it necessary to call upon the full panoply of the ESA services. However, the patient who fails to respond, the patient who drops out from hospital rehabilitation services, patients who are not under close hospital supervision, the patient with major psycho-social problems, and the patient with a disease of chronic unpredictable course, are the most likely ones to be referred to the ESA service. Many of the patients representing a high proportion of those remaining unemployed at follow-up, are those with chronic low back pain.

The great value of the ERC is that it can provide a more realistic work simulation than a hospital rehabilitation department, and can offer an assessment of work readiness which cannot otherwise be obtained except by sending the person into open employment. These advantages are particularly relevant to the rehabilitation of the psychiatric patient (Spry, 1977). But for both psychiatric patients and those with chronic physical disorders, a close integration between medical and industrial rehabilitation programmes is essential. Much depends on the individual patient's attitude towards work. It is often suggested that even for the most severely disabled person work is valuable in bringing him into a 'normal' environment and allowing him to consider himself as part of the community. Even tedious repetitive work such as sorting small components – the type of sub-contract work carried out at work centres – has a 'therapeutic' or self-satisying effect. But for others, even highly paid repetitive work is 'soul destroying'.

REHABILITATION DEPARTMENTS

Good rehabilitation requires careful organizing, and each District General Hospital should provide a rehabilitation service.

Patients will initially be the responsibility of consultants of many different disciplines, but when the immediate (definitive) care is over, facilities for long-term management are often best handled by the co-ordinated efforts of the general practitioner and his team of paramedical workers in co-operation with the social services.

A Department of Rehabilitation should:

(1) Be an organization for the provision and co-ordination of the physical therapy services of the hospital and its dependent clinics.
(2) Be an advisory service on all problems of rehabilitation and resettlement:
  (a) By direct clinical referral of patients to the consultant in charge of the Department.
  (b) By referral to clinics devoted to special aspects of rehabilitation: e.g. Functional assessment unit; Wheelchair (and other appliances) clinics; and Resettlement clinics for advising and co-ordinating medical, social, industrial and training aspects of a patient's return to work.
(3) Co-ordinate and correlate all services concerned with rehabilitation and resettlement in the community.
(4) Provide a continuous programme of teaching and research into problems of rehabilitation and physical handicap.

Such a Department requires some beds, at least of a hostel nature, if it is to serve its purpose adequately.

SPECIAL REHABILITATION UNITS

There will always be a need for some specialized units for managing the more severely disabled (for example, patients with head injuries, spinal cord lesions, or the very severely disabled), and these are likely to be organized on a regional basis, drawing patients from a group of District General Hospitals. At these units, there will usually be a consultant who devotes all or most of his time to medical rehabilitation.

Apart from providing special facilities for management of the more severely disabled patients, a regional residential rehabilitation unit might be expected to provide all or some of the following facilities:

(1) Short-term in-patient rehabilitation for patients unable to return home immediately because of social problems or travel difficulties.
(2) Detailed functional assessment and long-term supervisory care of the severely disabled.
(3) Development and manufacture of special appliances and equipment for the severely disabled.
(4) Accommodation of patients needing prosthetic services, including amputees for limb-fitting and rehabilitation.
(5) Facilities for assessment and training of disabled persons and their relatives.
(6) Wheelchair appliance service.
(7) Information service dealing with all aspects of equipment and facilities for the disabled.
(8) Advice, help and training for professional workers on rehabilitation or resettlement.
(9) Facilities for early industrial assessment and retraining.

THE CONSULTANT IN CHARGE OF REHABILITATION SERVICES

The clinician directing rehabilitation services must be first and foremost a physician. He must be able to unravel the complexities of physical disorders of

the locomotor system whether neurological, rheumatological, orthopaedic or psychological. Whilst not required to be a diagnostic virtuoso, he must have a working understanding of these specialties which can only come from a thorough grounding in internal medicine and orthopaedic medicine. Without such a grounding, his collaboration and consultation with colleagues, and his ability to derive the optimal return from the rehabilitation services will be restricted. In these circumstances, he will tend to become an administrative technologist rather than a consultant adviser with wide-ranging interests; for the management of patients must always be comprehensive and include the use of drugs, physical treatment and appliances. Full rehabilitation implies clinical, functional, social and welfare assessment and a co-ordinated approach to the patient's total management.

A consultant with responsibilities for directing the rehabilitation services of a District General Hospital should have his own particular clinical interests. Often he will be concerned with the diagnosis and treatment of rheumatic disorders but he may well have other clinical interests such as neurology or orthopaedics. He may also collaborate very closely with colleagues in geriatric medicine and mental subnormality, where there is a pressing need for rehabilitation services.

The prescribing of physical therapy can be as precise as the prescribing of drugs, but detailed prescribing pre-supposes detailed knowledge of the agencies employed, and a willingness to monitor the patient's progress very closely and to re-prescribe at very frequent intervals, for response to physical treatment can vary considerably and rapidly. This entails frequent attendances by the patient at out-patient clinics or frequent visits by the doctor to the physiotherapy department in the hospital and is time-consuming to both.

A possible and probably more logical alternative is to encourage the physical therapists to develop a deeper understanding of their subject and so to become more able to assume a greater responsibility for the day-to-day variations in therapy, and for the management of the departments in which they work. The training and experience of physical therapists varies considerably, and indeed the training given in different countries also varies considerably, particularly in the proportion of practical to theoretical knowledge imparted. In the United Kingdom, the training is orientated towards the practical aspects of physical therapy, and the qualifications to practise this are granted in a Diploma. In many other countries, although the therapists complete a Degree Course, their practical experience may be very much less.

As a general principle, physical therapists should be primarily practical in their approach and their training, and their work should be directed towards practical assessment and practical treatment. The patient's individual response to the therapist determines the therapist's choice of treatment and the response she expects from the patient. The clinician's function is to establish the overall guidance and direction of the patient's management.

The consultant in charge of rehabilitation can give the therapist the best chance of achieving the results he wants by:

(1) giving an accurate diagnosis;
(2) giving clear indications of the aims of treatment;
(3) giving a clear indication of the likely outcome;
(4) specifying where drug therapy or disease characteristics may necessitate particular care in the administration of various treatments.

He should remember that short, intensive periods of therapy are more likely to have a therapeutic value than the prolonged intermittent attendances for palliative treatment which rapidly become more of a social outing than a therapeutic activity.

He should encourage the therapist to record details of the nature and effect of treatment so that feed-back information from her trained observations may substantially influence future management and enable her to contribute fully to its outcome.

SUMMARY

The foundations of good rehabilitation lie in good medicine–accurate diagnosis, careful prognosis, and early, appropriate and adequate definitive care. The superstructure of rehabilitation depends considerably upon the bricks of physical therapy: physiotherapy (including remedial exercises); occupational therapy; industrial rehabilitation; and the various aspects of the social services.

Unfortunately, responsibilities tend to become separated, and it is often necessary to have one consultant who can bring about the integration of the provisions of the Department of Health, the Department of Education, the Department of Employment and Productivity, the Local Authorities and any other organizations involved. This integration calls for good organization and management and clearly defined lines of communication and areas of responsibility.

There is a need in every hospital for one consultant to be responsible for co-ordinating these services. In some instances, he will undertake this only in a supervisory role, but in other instances, particularly where the rehabilitation service plays a large part in the hospital activities, he may make this his special interest. As a corollary to this approach, the paramedical professions should be more closely concerned with the management of rehabilitation services and take a greater part in the co-ordination of various aspects of rehabilitation.

BIBLIOGRAPHY AND REFERENCES

Brown, A. W. (1977). 'The employment service agency'. *Proc. Roy. Soc. Med.* 70, 9, 647

Buckinghamshire County Council (1970). Report of the Working Group on Services for the Physically Handicapped and Rehabilitation in Milton Keynes

Department of Health and Social Security (1972). Statement by the Committee on the Remedial Professions. London: HMSO

Department of Health and Social Security (1973). 'The remedial professions.' A report of a Working Party set up in March 1973 by the Secretary of State for social services. London; HMSO

Ministry of Labour and National Service (1956). Report of an enquiry of the rehabilitation, training and resettlement of disabled persons. London: HMSO

McKenzie, M., Weir, R. D., Richardson, I.M., Mair, A., Harnett, R. W. F., Curran, A. P. and Ferguson, T. (1962). *Further Studies in Hospital and Community.* Oxford; Nuffield Provincial Hospitals Trust

MSC Review and Plan (1977) Manpower Services Commission

Nichols, P. J. R. (1969). 'Physical medicine.' *Br. J. Hosp. Med.* 2, 1152

Nichols, P. J. R. (1974). 'Rehabilitation in the reorganised National Health Service.' *Occupational Therapy* 37, No. 7

Oxford Regional Hospitals Board (1973). *Community Hospitals Research Programme: Day Care in the Community Hospital*

Scottish Home and Health Department: Scottish Health Services Council (1972). *Medical Rehabilitation: The Pattern of the Future.* London; HMSO

Spry, W. B. (1977). 'Problems in the rehabilitation of psychiatric patients.' *Proc. Roy. Soc. Med.* 70, 658

2 Physiotherapy

INTRODUCTION

The origins of physical therapy are shrouded in antiquity, and many forms of treatment referred to in the earliest medical records include the use of heat and hydrotherapy for the alleviation of discomfort from diseases of the locomotor system. Over the years, the pattern of medical practice has changed considerably, as more and more specific treatments have been discovered. Before the discovery of specific treatments such as antibiotics, the only available therapy for many patients was palliative and supportive. As the effectiveness of therapy has advanced, so early mobilization and early discharge of patients have become the rule, and the pattern of hospital in-patient physiotherapy has changed, with less treatment of patients in bed and a wider use of mobilizing techniques and general rehabilitation.

Treatment evaluation

Most physical treatments involve dramatic situations – electric currents, heat, light and direct personal contact of patients with the therapists. Such conditions favour the placebo factor, and the role of the physical therapist is partly to exploit the empirical placebo response and partly to apply rational remedial therapy.

Many of the conditions traditionally treated by physical methods are degenerative, chronic and episodic. They are also subject to unpredictable remissions and exacerbations. No treatment is likely to produce dramatic results in the chronic degenerative locomotor disorders, but most of the patients respond to care and attention. This is what so many physiotherapy departments provide. Unfortunately, there has been remarkably little scientific evaluation of either the disorders or the treatments. It has been well shown in other fields that it is only when clinical problems are correlated with their underlying pathological mechanisms that therapeutic advice can be given on a rational basis. At the present time, there is still too much that is taught and practised in physiotherapy departments which is based upon an amalgam of tradition, personal experience and subjective patient response. Consequently, physiotherapy in the chronic locomotor disorders has remained until recently a part of medical practice has built up its own folklore and pseudo-science.