Needs and Opportunities in Rehabilitation

Introduction and a look at some short term orthopaedic rehabilitation

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"A niche of usefulness and self-respect exists for everyman however handicapped, but that niche must be found for him. To carry the process of restoration to a point short of this is to leave the cathedral without a spire." So said John Galsworthy in 1918,¹ very much in the spirit of modern ideas on rehabilitation. The Mair Report of 1972² goes further: "Rehabilitation implies the restoration of patients to their fullest physical, mental, and social capability"—usefully encompassing all degrees of disorder. With chronic conditions we could well add "maintenance of the fullest capability"—though not everyone would accept this as rehabilitation. Looked at another way, rehabilitation is sometimes described as a planned withdrawal of facilities or support; and it is very much concerned with the "behavioural aspects of recovery from any illness or injury or of response to deformity."³

All this is needless to say a wild overstatement of what generally happens. But at least there is more interest in these ideals, and the tendency to keep people out of hospital so far as possible is a stimulus to rehabilitation. At the same time occupational therapy is now geared to the activities of daily living rather than to recreational craft work; physiotherapy has shifted its emphasis in the past two decades from passive to active methods; and the team approach to a patient's problems is widely accepted. Technology too can provide a path back to life. Personal stories of disability published in the *Lancet* over 30 years ago⁴ are a reminder of how far the climate has changed. Nevertheless, implementation of the recommendations of 1972⁵ has a long way to go, and there is a vast amount of unmet need: a recurring theme of the first meeting of the new Medical Disability Society.^{5a} There is much ignorance, among professionals and consumers alike, about what is possible and available (*Rehabilitation Today in Great Britain*⁶ provides a good introduction); and coordination is often poor between different parts of the services and between the many different agencies. More fundamentally, good services have often developed as a result of the enthusiasm of individuals rather than according to an overall strategy. There is not, for example, an intensive multidisciplinary rehabilitation centre in every region, and there are many people with severe neurological disabilities who have no contact with first class intensive rehabilitation and may remain more handicapped than they need be.

Evaluating rehabilitation procedures and services is clearly important but has many pitfalls.³ The need for evaluation is especially emphasised in the rehabilitation of brain damaged patients.⁷ The multidisciplinary Society for Research in Rehabilitation was founded in 1978 to encourage and publicise research. For the teaching of good practice in rehabilitation 25 hospitals and rehabilitation centres were designated by the DHSS in the 1970s as demonstration centres.⁶

We are defining rehabilitation not merely in terms of a professionalised and skilled process, but as a "striving for well-being"; a process in which we all play a part, with the professional contribution seen as one among many. We are also defining it as a process which calls into account the myriad of interacting factors which affect our health and well-being. . . . We have chosen to think . . . in terms of solutions, because we are thinking of people striving to solve problems. This does not imply that solutions can always be found, it is merely a framework for thinking. Nor does the concept of problem-solving which we use throughout imply that disabled people have nothing but problems. Rather it can be seen as an attempt to convey the similarity between man's universal concern to resolve difficulties and the process known as rehabilitation.

From *Look at it This Way: New Perspectives in Rehabilitation* by A Brechin and P Liddiard.³¹

In this series I shall be looking at needs and at stimulating ideas and practices I have come across, starting with a general introduction on some of the services and then touching in the later part of the article on short term and "one off" rehabilitation, mainly orthopaedic. I hope to write more specifically about organisation of services at the end of the series.

Local resources and special centres for intensive rehabilitation

All specialists should organise rehabilitation for their own patients and few people should need to go to special centres except for severe neurological problems. This is a widespread doctrine but the reality is rather different. Perhaps the most important message to come over to me in the course of the visits I have made and the discussions I have had concerns the often untapped potential of rehabilitation and the often unnecessarily unmet need^{5a}: the message that professionals dealing with patients should be well informed about the possibilities and support and press for rehabilitation facilities of all kinds in hospital and community. At the same time there needs to be one person who has overall responsibility for services in each district—whether a rehabilitation consultant or someone else with the right drive and enthusiasm—but many districts are without such a post.

Intensive rehabilitation, however, usually for five days a week, may be given in mixed or specialised rehabilitation centres and in regional centres for particular conditions such as head and spinal injury. Apart from these special regional units there are 23 medical rehabilitation centres,⁶ most residential or partly so, together with a

few in the voluntary sector such as the rehabilitation unit of the Royal Hospital and Home for Incurables, Putney, and Heenan House in East London.⁷ Although employment rehabilitation, which I hope to look at later in the series, is largely the province of the Manpower Services Commission, most rehabilitation centres and some hospitals do attend to occupational problems and resettlement, often with the help of disablement resettlement officers. Rehabilitation centres have been described as providing "last ditch" or last point of referral rehabilitation.⁸ Of 40 patients with varied disabilities who had been out of work for two years or more, 28 were back at work within six weeks of admission to one rehabilitation centre.⁸ This is clearly important as with the passage of time the unemployed become increasingly unemployable. Anecdotal evidence such as this illustrates the potential of intensive rehabilitation.

If we leave aside specialist centres for neurological conditions (which I look at later in the series), are the right people getting intensive rehabilitation? At Camden Road day rehabilitation centre, I was told, half the patients (with various conditions) could have been treated in hospital departments, but earlier help had not been intensive enough. Of the other half, some had purely physical problems, mainly orthopaedic, needing intensive help; but many also needed careful definition and analysis of their total problems as people that prevented their effective recovery. For them the answer was not just more remedial therapy but specialised help from psychologists and counsellors, and perhaps disablement resettlement officers, as well as remedial therapy as appropriate. The milieu of a unit such as this also encourages mutual support and self help. In addition, some people go to these centres because they need to be rehabilitated speedily to a high level of fitness.

A residential centre especially may have something of the effect of a therapeutic community, and any centre will have a good potential for attending to the patient as a total person. At the same time places may be relatively cheap.⁸ But DHSS policy is to concentrate resources on district general hospitals and away from intensive rehabilitation centres. Without such centres, however, the few patients needing intensive help five days a week in any one hospital either would not get it or would have an uneconomic and perhaps inefficient service.⁸ Thus rehabilitation centres, it can be argued, far from being reduced should be extended to provide adequate facilities for intensive multidisciplinary rehabilitation for every region—backed up by proper facilities for most of the patients needing rehabilitation in every district general hospital and by professionals at all levels who take rehabilitation seriously from the point of view of the total person. The Tunbridge report in 1972 urged the establishment of rehabilitation departments on similar lines to rehabilitation centres in district general hospitals.⁵ With the increasing scarcity of resources this is not likely to happen widely; but it is important that the ethos of these centres should spread more widely.

Physiotherapy

Half an hour's physiotherapy three times a week for someone needing comprehensive treatment is not, say Molloy and Wynn Parry, rehabilitation.⁶ But how can more be done with the present meagre resources?

Although comprehensive rehabilitation includes much besides, I confine myself for the moment to some aspects of physiotherapy. It is often said that physiotherapy may be indiscriminate, too dilute, and a waste of resources. Twelve years after the criticism of the Tunbridge Committee,⁵ treatments of doubtful benefit for the patients concerned are continued for too long and without proper review: it would be best given, many believe, for shorter periods more intensively, prescribed much more precisely, and revised more often.⁹

Some hospitals do manage to give physiotherapy courses for up to two hours and up to five days a week, with reasonable individual tailoring, by running classes of the circuit variety rather than group exercises for patients with related conditions. In rheumatic diseases (to be discussed in the next article) and other chronic conditions

intermittent physiotherapy may be given. But it is the educational role of the physiotherapist that is increasingly emphasised: not only instructing patients and relatives but also running courses for district nurses, health visitors, care staff, and others. Compliance with home exercises varies—it may be greater if the patient has to return regularly for assessment, according to a study in Leeds.¹⁰ Written instructions are often given, and a small study on back and neck pain showed the best compliance, and also a good clinical outcome, in the group who were both instructed in home exercises and given a booklet.¹¹

Partridge and Warren have argued the case for developing a strong community physiotherapy service, provided that it is run by the hospital service.¹² By 1982 three quarters of health districts had a community service.¹³ Physiotherapy in the home is an important part of this. Northwick Park Hospital, Harrow, for example, runs a successful domiciliary service¹⁴; while Forster *et al* describe a home physiotherapy scheme based on general practice.¹⁵ In this scheme physiotherapy reached patients whose condition would have precluded their going to the outpatients department. For those who would otherwise depend on the ambulance service home visits were much cheaper. Open access to physiotherapy services for general practitioners is increasingly recommended,¹² to save unnecessary and long delayed visits to consultants; in 1982 some degree of direct access was available in two thirds of health districts,¹³ and successful schemes have been described.^{15 16}

Both doctors and physiotherapists are talking of the need for objective evaluations of time honoured treatments for various conditions. One study showed that home exercises for osteoarthritis were just as good as outpatient physiotherapy.¹⁰ In another study a meniscectomy group that had about 12 outpatient physiotherapy sessions of 30 minutes each, as well as being taught exercises to be done at home, did no better than those instructed in home exercises but having no outpatient physiotherapy—in terms either of knee function or of returning to work.¹⁷ But the authors emphasise that this conclusion does not necessarily apply to other age groups and conditions—and clearly it has nothing to do with intensive rehabilitation.

Industrial therapy

Industrial therapy deserves a brief word here as it should be an important part of general rehabilitation services and contribute to intensive rehabilitation programmes. Occupational therapy can be provided through industrial processes serving specific therapeutic purposes—for example, increasing muscle strength or mobility of joints, and helping coordination and concentration.¹⁸ As a course proceeds the emphasis often shifts to improving physical and psychological work tolerance and work assessment. Four workshop places per 100 000 population have been recommended—at least 15 places being required for therapeutic and commercial viability.¹⁸

Injury

Trauma (even if we exclude the head injuries and other complex injuries) accounts for much rehabilitation work, and the Tunbridge Report recommends that all accident centres should be supported by adequate rehabilitation facilities.⁵ They have still to become adequate if this means helping everyone to achieve the best possible recovery.

"However brilliant the surgical solution to trauma, the end result cannot be satisfactory unless the patient is rehabilitated to function at his maximum," say Molloy and Wynn Parry,⁶ arguing that anyone with a leg fracture or crushed hand, as well as those with more complex injuries, should have intensive rehabilitation—at the expense, if necessary, of those who attend for palliative treatments or for more social reasons. Much the same applies to patients who have had orthopaedic surgery—who in addition may have had a long time in which to deteriorate before operation. One third of injuries treated in hospital, according to one estimate,⁶ need formal rehabilitation. Clearly many of these patients do not need anything

Man with bilateral amputations at the walking school of the DHSS limb fitting centre at Roehampton.

intensive. "Most people can rehabilitate themselves," it is sometimes said. But this is true—in the sense of recovering maximum function—only if they have proper advice, instruction about exercises to restore range of movement and strengthen muscles, and careful follow up, and then only if they are well motivated.

In an era of "sport for all" many bemoan neglect of sports injuries. The quality of attention to sport related injuries clearly reflects the quality of services for injuries in general—just as new approaches to, say, the problem of muscle atrophy after knee injury and surgery in sportsmen are hoped to benefit other patients eventually.¹⁹ Sports injuries sufficient to keep the victim off work for at least a week number 200 000 a year.²⁰ Apart from precise diagnosis, prompt treatment if any is needed, and instruction in exercises to be practised intensively to counter muscle wasting, anyone injured in sport may need knowledgeable advice on training routines, techniques, and equipment. This really calls for a wider spread of interest in the subject among doctors. Advice to rest is not enough. Special provision for sports injuries is controversial—some believe that much more is needed and others that special facilities are not necessary but that the level of care should be raised for everyone. A survey suggested that just a third of patients at sports injury clinics needed management by clinicians with specific training in sports medicine, perhaps at regional clinics.²¹ For less serious but possibly recurrent injuries clinics at sports centres offering prompt physiotherapy are a good idea. More guidance from sports physiologists, it is thought, would be helpful. Perhaps the most important point in all this, however, is that good rehabilitation may save some serious sportsmen from later osteoarthritis.²²

Amputation

There are some 66 000 people in England with amputations, about 5000 a year being performed; 90% of these are leg amputations, mostly for peripheral vascular disease in elderly people.^{6, 23} Rehabilitation after amputation illustrates some more general issues of rehabilitation in an extreme form.

"They were pleased to be able to walk, but they wanted to run" sums up the feeling of many younger amputees, and it has been suggested that rehabilitation services may aim too low with such

patients.²⁴ Some indeed can run, and various specialised prostheses are available—certainly astonishing achievements are possible. A man with an above the knee amputation is a ski instructor and another an Army helicopter pilot, while others are proficient in various taxing water sports and squash; a middle aged woman did well on a Ramblers' holiday in the Dolomites despite her leg prosthesis, and a man with bilateral leg amputations, active in promoting outdoor activities for the disabled, has returned to rock climbing. Adjustment to disability, with the help of new attitudes and revision of activities, is a central aim of rehabilitation at all ages, and in one study many amputees had experienced positive change in their lives—they were proud of their achievement. In this series the more self conscious people adjusted less easily; counselling and social skills training could help here.²⁴ Elderly patients can easily lose heart and give up the idea of walking; younger amputees may become more vulnerable to depression and other psychological symptoms as time goes on and may need long term follow up for detecting such distress.²⁵

A survey of 80 patients with bilateral leg amputations—admittedly an extreme group—found that prostheses were actually used by only 23 of the 65 who had had artificial limbs at some time.²⁶ There had been little rehabilitation, not enough information given, and inadequate assessment and thought about the patients' life style and wishes. In a series of patients with unilateral leg amputations, from the limb surgery unit²³ of Queen Mary's Hospital, Roehampton, all who had been supplied with prostheses were using them at follow up (B Engstrom, unpublished findings). This is the only purpose built unit in England providing care by the same specialist team of doctors, therapists, and others throughout—from the time amputation is decided on until patients are discharged fully rehabilitated for the maximum independence of which they are capable. The multidisciplinary team approach is coordinated by frequent conferences that consider the patient's likely achievement, personality, social circumstances, physical environment, and whatever other factors emerge when his or her whole way of life is considered in depth; all these things are taken into account in the making of surgical decisions.

"To succeed with a prosthesis," said a physiotherapist, "takes determination and sheer bloodymindedness"; and I met a man whose tissues were prone to breakdown from steroid medication who was succeeding against all the odds. But older people may not be able to use a prosthesis (in the best hands three quarters of these patients, it is claimed, can walk again²⁷). Staff of limb surgery units emphasise the need for realism, and for rehabilitation aiming at mobility of whatever kind—walking, proficient wheelchair use, or both. At Roehampton patients stay in hospital until they are fully mobile, and until an occupational therapist and social worker have made a home visit to see whether conditions are suitable. This is immensely important. Discharge may be delayed because the local authority is slow to make adaptations to the home or arrange rehousing—one patient had to wait a year for new accommodation. A bilateral amputee not kept in hospital was virtually a prisoner for five months in an upstairs maisonette.

In the provision of services there are three main problems from the point of view of rehabilitation. Firstly, very many patients do not have their amputations done at hospitals where there is a specialist multidisciplinary team. Secondly, the nearest DHSS artificial limb and appliance centre may be too far away from the hospital for the early provision of an interim or primary prosthesis that is now possible²³; this may jeopardise the chance of walking. Thirdly, many patients have their walking training in a fragmented and therefore less effective fashion in the non-specialist physiotherapy department of their local hospital, to avoid long ambulance journeys.

Every major district general hospital, according to a surgeon I met, should have its own specialist team for amputation patients—including therapists, rehabilitation physician, social worker, and a prosthetist from the nearest limb fitting centre—and this team should meet weekly to assess and review all actual and prospective amputees to make sure that they are having the best possible management. Ideally a limb fitting centre should be adjacent to such hospitals. Then the centres of excellence would deal with the most

difficult cases and also teach; but to rely only on regional centres for the majority would mean taking many patients too far from home.

More generally, actual prostheses tend to fall short of what is technically possible.²⁸ A working group has made recommendations about services for prostheses²⁹ and a working party is now considering evidence on the artificial limb and appliance centre services.

Conclusion

It is being said increasingly that rehabilitation must be the concern of all specialties and of primary care. Rehabilitation services do need strengthening, but there is unlikely ever to be enough to go round, and anyhow many who need guidance or counselling do not need special facilities. But the ethos of recovery and fitness that prevails in the best rehabilitation departments and centres is clearly far from universal in the population at large, where struggling on or becoming resigned to lengthy incapacity are all too common. At a simple level, might not doctors and others encourage people much more widely to pursue some kind of fitness training or whatever activities are appropriate (not just physical ones) when they are recovering from injury or illness?

Often what is needed is not so much vast tracts of time as the right attitudes and interest. The Tunbridge Report in 1972⁵ deplored a lack of interest in rehabilitation among doctors and others; this can still be said even though awareness of the need for it has grown considerably since then. The subject needs more emphasis during undergraduate as well as postgraduate training⁵ and should be part of the stock in trade of general practitioners,³⁰ many of whom are not thought to be well enough informed at present about resources and possibilities.

Finally, patients often need precise short term goals, whether getting dressed or running a mile, rather than more diffuse aims of independence and activity. But unrealistic goals help no one, as many have pointed out. Patients and relatives moreover as well as staff must feel the force of them. Perhaps helping an unmotivated, dispirited patient to make a goal his own is the most important task of rehabilitation.

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Addresses

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Will rain water from an unpolluted atmosphere collected from asbestos roofs be harmful for drinking and other domestic uses such as cooking and washing of clothes?

There is inconclusive evidence that asbestos workers are at increased risk of developing primary cancers of the gastrointestinal tract. If the risk is real it is probably secondary to migration of fibres from the lungs to the tissues affected (through the lymphatic system) and not to the passage into the gut wall of ingested fibres. Several published studies bear witness to the lack of hazard from ingested asbestos. Thus it would be safe to assume that the contamination of drinking water with fibres during its collection via an asbestos roof is unlikely to pose any threat to health. By contrast there are undoubted health hazards, such as asbestosis, mesothelioma, and lung cancer, from inhaling airborne fibres. Such hazards might arise from an asbestos roof that was in a poor state and crumbling. Also, theoretically, clothes washed in heavily asbestos contaminated water might, as they dried, release dangerously large numbers of fibres into the atmosphere. Clearly the state of the roofing is the key determinant of risk. I would expect no detectable health risk from roofing in good condition but would be concerned about direct, and possibly indirect, health risks from asbestos roofing that is in a poor state.—F J C ROE, independent consultant in toxicology and cancer research, London.

Is there any association between high nitrate content (15.2 mg/l) in drinking water obtained from a spring and neutropenia?

There is unlikely to be any association between the nitrate in spring water and neutropenia. Nitrates act as oxidising agents after conversion to nitrites in the gastrointestinal tract and cause methaemoglobinemia, especially in infants. The concentration of nitrate here (15.2 mg/l) is not high enough to produce this effect. Neutropenia is not described with this dose of nitrates. Neutropenia may have a genetic basis or be associated with different diets. People of African origin often have neutrophil counts of $1.0\text{--}1.5 \times 10^9/\text{l}$. An environmental factor may play a part in the neutropenia—for example, a virus or a toxin—but it is probably not nitrate.—E C GORDON-SMITH, reader in haematology, London.