REHABILITATION AND RETURN TO WORK OF PERSONAL INJURY CLAIMANTS

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ABBREVIATIONS

ABI	Association of British Insurers
ACE	Asymptotic covariance estimate
AIS	Abbreviated Injury Scale
AOA	Accident Offices Association
BMA	British Medical Association
BMDP	Biomedical Computer Programs
DAS	Disablement Advisory Service
DE	Department of Employment
DHSS	Department of Health and Social Security
DRO	Disablement Resettlement Officer
EL	Employers' Liability
ERC	Employment Rehabilitation Centre
GP	General Practitioner
HGV	Heavy Goods Vehicle
HSE	Health and Safety Executive
ICD	International Center for the Disabled, New York
ICIDH	International Classification of Impairments, Disabilities, and Handicaps
IRU	Industrial Rehabilitation Unit
ISCD	International Statistical Classification of Diseases, Injuries, and Causes of Death
MIB	Motor Insurance Bureau
MLR	Maximum likelihood ratio
MSC	Manpower Services Commission
NACEDP	National Advisory Council on the Employment of Disabled People
NS	Not statistically significant
OPCS	Office of Population Censuses and Surveys
PHI	Permanent Health Insurance
VR	Vocational Rehabilitation
VR Index	Vocational Rehabilitation Index
WHO	World Health Organization

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This study reports one aspect of a more widely ranging research and development programme, funded by the Association of British Insurers. That programme, which is outlined briefly in the first Chapter of this thesis, has been carried out under the general direction of Professor Cairns Aitken of the Rehabilitation Studies Unit, University of Edinburgh and Mr James Tait, an Honorary Fellow of the Unit, to both of whom I am most grateful for the opportunity to contribute to the research. Professor Aitken has also acted as Supervisor for this study. His advice and guidance throughout the period of study have been invaluable and the support and encouragement he has given are very much appreciated.

The study itself, however, would not have been possible without the collaboration and enthusiastic co-operation of the General Manager and staff of the insurance company on whose records it is based. I am indebted to them not only for the opportunity to study personal injury claims files but also for much practical advice and assistance received while conducting the research. Equally, data gathering from these files absorbed over five thousand man hours and was not a practicable undertaking for one person. I am also grateful therefore to my Research Associate, Mr Hugh Bochel, for assistance rendered with the collection and processing, under my direction and supervision, of data for the analysis reported in Chapter Five.

Others to whom I am indebted for information, inspiration or advice include Dr Robin Prescott of the Medical Statistics Unit, University of Edinburgh, for guidance on the multivariate analysis reported in Chapter Six; Dr Edward Hester of the Menninger Foundation Rehabilitation Research and Training Center, Topeka, Kansas and Dr Joseph Stubbins, Emeritus Professor of Rehabilitation Counseling, California State University, San Francisco. Lastly, I wish to acknowledge the many and varied ways in which colleagues from the Rehabilitation Studies Unit have contributed to completion of the study - in particular, Miss Elaine Grieve, whose wordprocessing skills have been especially appreciated.

DECLARATION

I declare that I have composed this thesis and that, apart from the help and guidance acknowledged above, it is entirely my own work.

.....May 1987

ABSTRACT

This study examines the rehabilitation and return to work of patients who received severe injuries at work or in road traffic accidents and whose subsequent claims for compensation for personal injury were settled by one insurance company for £5,000 or more. The study has two anchoring points - an evaluative account of the development, scope and effectiveness of vocational rehabilitation in Great Britain and a review of the operation of the British medicolegal system.

Against this background, three analyses are reported. The first, based on a review of insurance company claims files, comprises a comparison from relevant personal, medical, occupational and procedural perspectives of (a) 209 employers' liability (EL) claimants and (b) 609 third party motor claimants who were of working age and in employment when injured. The second, based on representative samples of 93 EL and 101 motor claimants, uses stepwise logistic regression analysis to develop a model to predict return to work by settlement. It also describes the construction in accordance with basic psychometric procedures of a Vocational Rehabilitation (VR) Index to identify, amongst claimants who have not returned to work within a year of injury, those who might be helped to do so by referral to appropriate rehabilitation services. The third analysis, based on a series of 602 medical reports prepared by 388 consultants and 12 GPs on representative samples of 94 EL and 109 motor claimants, switches attention to medical contributions to the medicolegal system. Two evaluations are reported, one of consultants' compliance with published guidance on medicolegal reporting and the other a content analysis of reporting on individual claimants, paying particular attention to coverage of such occupationally relevant topics as assessment of residual disability and advice on employment handicap.

Results show that the majority of personal injury claimants return to work before settlement. Involvement in litigation therefore is not the deterrent to return to work it is sometimes held to be.

Nevertheless, a substantial minority whose medical treatment is completed successfully do not re-enter the labour market before their claims are settled. Very few of the latter have any contact with relevant rehabilitation services, despite the opportunities for referral during an interval of two years, on average, between completion of medical treatment and settlement. Psychological variables highlighted by previous research, however, may be less powerful determinants of outcome than iatrogenic factors, including some medical management of disability practices. Statistical analysis of determinants of employment outcome at 12 months and at settlement suggests that clinical variables generally are poor predictors of return to work. Evidence that time away from work is the most powerful predictor of employment outcome reveals a window of opportunity around one year after injury when rehabilitative help could be most beneficial. Evaluation of the VR Index suggests that it can be used at this stage to identify which claimants might benefit most from referral to rehabilitation and, possibly, the kind of assistance they require. Analysis of medicolegal reporting reveals a high standard of coverage of clinical topics, but considerable scope to improve such other aspects as assessment of residual disability and advice on employment handicap and/or to involve other professions or services which can help with these aspects.

The study poses questions about coverage of occupationally relevant topics in medical reports and about the incorporation of early intervention strategies in the medical management of disability. In view of a continuing gulf between medical and vocational rehabilitation services in Great Britain, however, its main implications concern the need to inject new, vocationally oriented, case co-ordinating expertise into the medicolegal system, and the part that insurers can play by introducing at the earliest opportunity appropriate rehabilitation counselling services for claimants.

CHAPTER ONE

Developments in Rehabilitation Studies

BACKGROUND TO THE STUDY

The ABI research programme

This is a study of the rehabilitation and return to work of patients who were injured at work or in road traffic accidents and who subsequently pursued third party claims for compensation for their injuries and other related losses. As the study comprises one aspect of a wider, ongoing research programme that has been undertaken since 1980, a brief account of the origins and development of the programme as a whole is needed to set the work reported here in context.

In July 1980, the Association of British Insurers(1)* awarded a substantial grant to Professor Cairns Aitken of the Rehabilitation Studies Unit at the University of Edinburgh and Mr James Tait, former UK General Manager, Commercial Union Assurance and Honorary Fellow of the Rehabilitation Studies Unit. The purpose of this funding, which was extended in 1984 and currently covers the period to December 1988, was to support a research and development programme 'Developments in Rehabilitation Studies'.

The Rehabilitation Studies Unit was established earlier, following

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* All notes for this and later Chapters are located in Appendix 1

Professor Aitken's appointment to the Chair of Rehabilitation Studies in the University of Edinburgh in 1974. Since that time, the Unit has provided various clinical services in the specialty of Rehabilitation Medicine as well as undertaking teaching and research. In all its activities, particular emphasis is given to development and deployment of multi-professional approaches. Research supported by the Association of British Insurers exemplifies this operational policy - with past and present research team members drawn from medicine, insurance, law, occupational therapy, physiotherapy, social policy and psychology.

The first appointment to the ABI research team was made in 1980, when a series of studies of patients with hand injuries was launched in collaboration with colleagues from the University Department of Orthopaedic Surgery. The author was appointed to the team in 1981, as the Senior Research Fellow, with a brief to conduct research into the vocational rehabilitation and employment problems encountered by insurance claimants, and to oversee the design, development, supervision and analysis of other projects.

Completed and ongoing work in the Developments in Rehabilitation Studies programme can be described under four general headings. These are:- (i) studies of particular clinical populations, including patients with hand injuries, lower limb fractures and catastrophic injury involving some degree of brain damage; (ii) studies of insurance claimants; (iii) research into medicolegal assessment and reporting practices and procedures; and (iv) background research, including reviews of relevant literature, policies and services.

Clinical studies

By the end of 1986, when principal outcomes were reported in a leading article in The Lancet(2), the hand injury research was effectively completed. This research, based on prospective studies of out-patient and in-patient samples, yielded data on the epidemiology(3) and clinical management(4) of such injuries. Follow-on studies yielded a computerised system for recording details of hand injuries in busy clinical settings(5) and an evaluative review of different techniques for assessing residual function in injured hands(6). Other studies of patients with lower limb fractures or who have suffered catastrophic injuries commenced later and therefore are less advanced. Nevertheless, by the end of 1986, both were nearing completion, with final reports to be completed during the following year. As with the hand injury research, these studies are also paying attention to longer-term functional, psychological, social and occupational outcomes.

Studies of insurance claimants

At the outset of the Developments in Rehabilitation Studies programme, it was assumed that clinical populations, as defined by relevant sources of medical records, would provide satisfactory frames of reference within which to identify and address various medical topics of concern to insurers. However, it soon became apparent that this was not the case and that, for some purposes, it would be necessary to sample insurance claimant populations. The main reason for this came to light in the epidemiological aspects of clinical studies which showed that only a very small proportion of patients with particular types of injury are injured in circumstances that entitle them to

proceed with a claim for compensation. Despite the recent surge in medical negligence claims(7), almost all personal injury litigation is concerned with injuries sustained at work or in road traffic accidents. However, such injuries do not account for the majority of accident victims referred to hospital for treatment: injuries received at home or at leisure jointly account for a higher proportion. Moreover, only a proportion of injuries are attributable to third party negligence - the grounds on which legal action can be brought under the law of tort - and this reduces still further the chances of developing an accurate picture of, for example, the range of medical problems experienced by insurance claimants by sampling only clinical populations.

To remedy this potential shortcoming, and to augment and complement the data obtained from clinical studies, three studies of insurance claimants have been undertaken. The first(8) comprised a review of the scientific literature on compensation neurosis, the psychological reaction to an accident which is thought to be produced or maintained by the patient's involvement in litigation, and the topic that has received most attention in medical literature on insurance claimants (see Chapter Three). The second study(9, 10) was a review of files held by a leading company in the British accident insurance market on all employers' liability claims settled over a two year period in which damages paid to the claimant (or his/her representative/s) amounted to £5,000 or more. The third, reported fully for the first time in this study(11), took the form of a similar review of a much larger sample of third party motor insurance claims settled by the same company over a similar two year period.

Medicolegal assessment and reporting

Responding to requests for medical examinations and reports comprises one of the principal links between the medical profession and insurers. Because the information and advice contained in medicolegal reports is of paramount importance to the settlement of claims, this too has been the subject of research. In this case, all medicolegal reports contained in representative samples of the employers' liability claims files reviewed for other purposes have been subjected to detailed content analysis(12-14). A similar analysis of medicolegal reporting on motor claimants is reported fully for the first time as part of the present study. As a result of this research, linked with a more general concern to exemplify and foster good practice, two booklets have been prepared for the guidance of insurance claims staff and doctors, respectively(15,16).

Reviews of policy and services

The fourth prong of the Developments in Rehabilitation Studies research programme is represented by various efforts to highlight and discuss key issues affecting the organisation and effectiveness of rehabilitation services and policy on the vocational rehabilitation and employment of people with disabilities. Subjects addressed in this context have included the compatibility of clinical and social (ecological) rehabilitation strategies(17,18); liaison between medical, social and vocational rehabilitation services with particular reference to the needs of personal injury claimants(19,20,21); the effectiveness of employment rehabilitation centres(22,23); and techniques of occupational assessment(24,25). Finally, some attention has been paid to the wider context of rehabilitation service delivery, to the changing labour market and to the impact that new technologies

may have on vocational rehabilitation services and the employment of people with disabilities(26-29).

OUTLINE OF THE STUDY

The present study draws on the last three topics. It is concerned with the rehabilitation and return to work of two groups of insurance claimants who succeeded in obtaining damages of £5,000 or more for personal injuries received either at work or in road traffic accidents. Such persons may represent only a relatively small proportion of any given clinical population. In their own right, however, they also comprise a comparatively large group, linked by a common bond of exposure to, and involvement in, a social system(30) - the medicolegal system - which potentially could exert a profound influence not only on their response to medical treatment but also on other longer-term outcomes.

The formal and informal operation of this social system, and its interfaces with other sources of support for people with disabilities, are described in Chapter Three. Chapter Four presents the aims and methodology of the three analyses which comprise the study:- (i) a description and comparison of employers' liability and third party motor claimants from relevant medical, social, occupational and procedural perspectives; (ii) an analysis of factors influencing return to work before settlement of claims in representative samples of claimants drawn from these two populations; and (iii), for the same two samples, a content analysis of medicolegal reporting, paying particular attention to information about patients' occupations and advice on residual disability and employment handicap. Results of these analyses are reported in Chapters Five, Six and Seven,

respectively, with conclusions and perceived implications for practice and policy presented in Chapter Eight.

While relevant medical, legal and social considerations cannot be overlooked, the overarching theme of this investigation is vocational, exploring the interactions between such variables and return to work. For this reason, and because any recommendations would need to bear in mind existing vocational rehabilitation policy, practice and provision, the starting point of the study is an examination of the development, organisation and effectiveness of British services for the rehabilitation, training and employment of people with disabilities.

CHAPTER TWO

Vocational Rehabilitation in Great Britain

INTRODUCTION

Most people of working age who experience illness or accidents are able to resume their former occupation or find alternative employment quite quickly. Any help or advice they may require can be obtained from doctors, as an integral aspect of clinical case management, employers or employment services. Nevertheless, a substantial minority of people with disabilities(1) find that re-entry into the labour market is more difficult to achieve. Some, of course, remain too ill or disabled to work, while others are capable only of part-time, sheltered or diversionary employment. Yet others, in spite of being deemed capable of full-time, open employment, are unable to obtain suitable jobs. As a result, people with disabilities experience higher rates of unemployment than their non-disabled counterparts and, once employed, tend to take much longer to find new jobs(2).

In this country, as elsewhere, a complex array of remedial, rehabilitation, training and resettlement services has been set up to meet the needs of those people with disabilities who require specialist assistance to enter or resume employment. Most operate under the auspices of central or local government, although some are based in the voluntary sector or are provided in-house by employers.

These services are staffed by many different professions, whose members may work independently or in multi-professional teams. Some are medically-orientated, providing remedial, occupational or industrial therapy or, where necessary, prostheses, aids or adaptations for the home, the work place or to enhance communication or mobility. Some deal with the various personal, social, financial or legal problems that can beset recovery and return to work. Others are vocationally-orientated, providing help with occupational assessment, vocational guidance, employment rehabilitation, training or retraining and placement into suitable employment. This Chapter examines the development, scope and effectiveness of such vocational rehabilitation services in Great Britain.

ORIGINS OF VOCATIONAL REHABILITATION

State provision of specialist vocational rehabilitation services in this country is of comparatively recent origin. During the nineteenth century(3), the emergence of an industrialised society brought in its wake a variety of social problems whose magnitude rapidly outstripped the resources of traditional "caring" institutions - the family, the parish, the church. Successive governments did much to legislate against the worst excesses of poverty, poor housing, inadequate sanitation and bad working conditions. Observations by contemporary commentators(4), however, confirm that these harsh conditions were not readily ameliorated. They also suggest that special provision for the disabled was left almost entirely to the voluntary sector where, for example, humanitarian concern over the welfare of groups like the blind did result in some limited provision for their training in simple craft skills and employment under sheltered conditions(5).

Generally, though, the only help available to those who suffered illness or disablement during, or as a result of, their employment, and who wished to avoid the workhouse, was obtainable through membership of Friendly Societies or trades union organisations. But most workers had no such protection. They were obliged to seek assistance in the form of out-relief or charity or, as often happened, do without. Thus, despite pressure from conscientious Members of Parliament, from philanthropic lobbies and from organised labour in its various guises which, together, succeeded in securing some small gains of universal benefit in such areas as health and safety at work, working conditions in certain industries, employers' liability and workmen's compensation, specific provision for the disabled was not made in any significant measure until after the first World War.

One consequence of the carnage of the first World War was that the rehabilitation, training and resettlement needs of disabled ex-servicemen far exceeded the available resources of voluntary agencies. An onus to make some formal provision for their needs was therefore laid upon central government. Its response was marked, at least in part, by the opening of government instruction factories and the introduction by Royal Proclamation in 1919 of the King's National Roll, which aimed to encourage employers voluntarily to include in their work force a quota of disabled ex-servicemen who were in receipt of disability pensions for war injuries.

The needs of ex-servicemen were further considered by Inter-departmental Committees which reported in 1920(6) and 1923(7) and by a Parliamentary Select Committee which reported in 1922(8). In

contrast, the needs of the civilian disabled were relatively neglected. It is true that the general problem of retraining for more suitable employment persons who, as a result of industrial accidents, could no longer follow their previous occupations was considered in 1920 by a Home Department Committee on Workmen's Compensation(9), but its deliberations were less productive than its counterparts for ex-servicemen. In particular, the principle implied in its recommendation that the industrially disabled should receive the same treatment as the war disabled, and therefore should be similarly eligible for places in the government sponsored industrial training centres, proved unworkable in practice, owing to the relative scarcity of course places.

As it happened, the deeply-rooted economic and social problems associated with the years of the General Strike and the following depression diverted attention from the needs of the disabled. Little more was achieved on their behalf, at least at the instigation of central government, until the outbreak of the second World War(10). Major landmarks in the development of vocational rehabilitation services for disabled persons during the inter-war years therefore were located mainly in the voluntary sector. Here, for example, progress was marked by the creation in 1935 of the Queen Elizabeth Training College for the Disabled at Leatherhead and the opening in 1937 of the St Loyes College for the Training and Rehabilitation of the Disabled at Exeter.

After the outbreak of war in 1939, mobilisation of personnel into the armed forces created vacancies in industry and commerce. These were filled eventually by sections of the population who had not been so

called upon in peace time. Many of these vacancies, and those in war industries, were filled by women and by previously unemployed disabled persons. In the case of the disabled, the Ministry of Labour and National Service, in conjunction with other government departments, inaugurated in 1941 an Interim Scheme for Training and Resettlement of the Disabled. One significant aspect of this scheme was that it did not discriminate between disabled ex-servicemen and the civilian disabled, a development which is generally considered to have reflected the war time manpower shortage and partly also the fact that there were, as a result of the war, substantial numbers of civilian casualties whose needs could not be treated separately from those of personnel from the armed forces. Inauguration of the Interim Scheme therefore marked the very first attempt to launch a comprehensive system to provide for the training and resettlement needs of all disabled persons.

Once such requirements were recognised, other steps were taken to determine if the new arrangements needed to be backed up by other measures or specialised services. This task was given to an Inter-Departmental Committee - the Tomlinson Committee(11) - whose report and recommendations provided the blueprint for the subsequent development of vocational rehabilitation policy and services in Great Britain.

THE SCOPE OF VOCATIONAL REHABILITATION

The Tomlinson Committee was invited:-

> "to make proposals for the introduction at the earliest possible date of a scheme for the rehabilitation and training for employment of disabled persons not provided for by the Interim Scheme; to consider and make recommendations for introduction as soon as possible after the war of a comprehensive scheme for (i) the rehabilitation and training

> of and (ii) securing satisfactory employment for disabled persons of all categories; to consider and make recommendations as to the manner in which the scheme proposed for introduction after the war should be financed"(12).

Because, 40 years on, there are few aspects of policy or services which do not comply with the spirit, if not the letter of its guidelines, an examination of its assumptions, analysis and recommendations is a natural starting point from which to review today's provision for vocational rehabilitation.

The Tomlinson Committee considered that, given continuity of treatment between medical and other rehabilitation and resettlement services, most people who experienced illness or injury could either resume previous occupations or take up some other suitable employment on completion of medical treatment. Although such patients would not require further specialised assistance, it was anticipated that, where necessary, employers might assist their return to work, either by providing light duties leading to a graduated resumption of full productivity or by re-allocating them to different jobs that were suited to residual skills and abilities.

However, the overarching aim of the Committee's proposals was "to secure for the disabled their full share, within their capacity, of such employment as is ordinarily available"(13). Recognising that there was a substantial minority who required additional assistance to help them bridge the gap between medical treatment and the point at which they could be regarded as fit for employment, the Committee drew attention to the need for a variety of specialised services. In some cases, needs would be met by referral to a prosthetics service. In others, a course of physical and mental reconditioning or vocational training to acquire new skills or to re-learn old ones was required.

It was also recognised that disabled people who needed to change jobs or find new employment might require help of a different kind. This would take the form of a specialised service, provided in the national network of Employment Exchanges, to assess individual capacity and to advise on the selection of suitable employment.

The Tomlinson Committee's recommended package included two further proposals. Firstly, special measures were needed to secure for disabled people their full share of available employment opportunities. It was proposed that employers with less than a set proportion or "quota" of disabled employees should not be allowed to engage a non-disabled person without a special permit to do so. Secondly, other special measures were needed for those disabled people who were unable to hold their own under competitive conditions in open employment. It was anticipated that a limited range of sheltered workshop places would cater for the needs of the comparatively small number of people expected to comprise this group.

Public concern to ensure that both civilian and military casualties of the second World War received every possible assistance with their rehabilitation and resettlement created a very favourable climate for the Disabled Persons (Employment) Act, 1944. The forerunners of today's range of specialist rehabilitation, training and resettlement services for disabled people, all clearly bearing the imprint of the Tomlinson Committee's analysis and recommendations, were therefore quickly established in the post-war years, as part of a broader package of measures designed to stimulate economic recovery, requiring the fullest mobilisation of the labour force, and to lay foundations for a welfare state. They included the appointment of Disablement

Resettlement Officers (DROs) in Employment Exchanges and the establishment of national networks of Employment Rehabilitation Centres (ERCs)(14) and sheltered workshops. The Act also empowered the Minister to establish a register of disabled people, to introduce a quota scheme and to set up advisory committees at national and local levels to advise on the development and operation of those services. Training requirements were treated differently. Because it was considered that, whenever possible, disabled people should receive training alongside their non-disabled counterparts, special provision was limited to support for a small number of residential training colleges, with all other vocational training opportunities for them provided by mainstream further education or training establishments.

That other professions and industry also responded to the Tomlinson Committee has tended to receive much less recognition. Such oversight is regrettable because, without the contributions made by members of the medical profession, occupational therapists and both sides of industry, Britain's vocational rehabilitation track record certainly would have been less impressive. Evaluation of the Tomlinson Committee's achievements therefore should acknowledge its role in stimulating doctors to include concern for rehabilitation and return to work as a normal aspect of clinical case management and in encouraging the development of occupational therapy as an integral aspect of medical rehabilitation. It should also acknowledge the immediate response of industry, in both the public and the private sectors. The provision of industrial rehabilitation facilities for employees at Vauxhall Motors at Luton, the Austin-Morris car assembly plant near Oxford, Pilkington's glass manufacturing plants in Lancashire and in various locations throughout the (then) recently

nationalised coal and steel industries, for example, all date back to this post-war period. Tomlinson's influence can also be traced in industry and other places of employment, in the extent to which progressive personnel and occupational health policies include special consideration of the needs of employees returning to work following illness or injury.

THE EFFECTIVENESS OF POLICY AND SERVICES

The Tomlinson Committee's package of services has been refined and expanded over the years. However, the underlying rationale and operation of constituent services have remained relatively unchanged. Indeed, up to the early 1970s, there was little reason to alter a pattern of provision which appears to have been reasonably effective. Throughout this period of post-war reconstruction and boom, the network of sheltered workshops, including Remploy factories, gradually expanded. Also official reports in the Ministry of Labour Gazette show that Disablement Resettlement Officers and Employment Rehabilitation Centres were quite successful in placing a majority of their clients in employment - even though most of the jobs found were of an unskilled or semi-skilled kind in manufacturing industry, in lower level "white collar" occupations or in the more menial and less well paid types of work available in the service sector. While, as might be expected, all aspects of Tomlinson's provision were criticised occasionally, only the quota scheme was subjected to such critical appraisal on a regular basis, not only by employers and disabled people but also by the DROs who were responsible for its enforcement.

From time to time, higher officials also expressed disquiet about

particular aspects, for example, the rising costs of sheltered employment or the problem of enforcing the quota scheme. The potential for improvement of individual services or co-ordination between them also received some attention. On balance, though, such concern was outweighed by the mainly reassuring tone of official reviews like those conducted by the Piercy Committee in the mid 1950s(15) and the Department of Employment Research and Planning Division in the early 1970s(16). These concluded that arrangements generally were satisfactory and that major changes in policy, practice or the allocation of resources to services were not necessary.

A similar assessment was made as recently as 1978, in an official report which outlined a five to ten year development programme for employment and training services for disabled people(17). Although this report anticipated that it might be necessary on some future occasion to re-examine basic principles(18), and acknowledged that scope for future development might be limited by resource constraints, it did not envisage a need for more fundamental changes in policy, practice or provision. The main proposals - to further improve the effectiveness of existing services and to take additional steps to persuade employers to adopt more progressive and positive policies on the employment of disabled people - were to be achieved without changing the basic pattern of services or the legislative framework on which they were based.

Recent proposals first to abolish then to amend the quota scheme(19-21); to enhance the effectiveness and scope of employment rehabilitation services (22-23), and to change the Disablement Resettlement Officer Service(24), however, had their origin in other

developments, of longer standing, but which became more prominent in the late 1970s.

The first was a growing recognition that the country was moving into deep recession of unparalleled proportions in the post-war years. This recession triggered off a dramatic rise in unemployment and has also accelerated a number of other changes in labour market conditions(25). The most important of these have been a dramatic loss of jobs in an already shrinking manufacturing sector and a substantial shedding of unskilled labour. These, of course, were the very areas in which previously vocational rehabilitation services had enjoyed most success in placing their clients into employment. Consequently, job opportunities for disabled people have become much more difficult to find and the number of unemployed disabled people (whether registered or not) has increased.

The second development was pressure to respond to the results of research into the efficiency and effectiveness of rehabilitation and resettlement services. Independently conducted evaluations, undertaken throughout the 1970s by professional and academic researchers and by disabled people or organisations representing their interests, were much less sanguine about the continuing relevance and effectiveness of Tomlinson's policy and package of services. Research confirmed the decreasing effectiveness of these arrangements over the years, including a marked decline from the mid-1970s, coinciding with the onset of recession(26-28). It also highlighted other general problems. For example, although the Piercy Committee identified a need to improve liaison between medical and other rehabilitation and resettlement services, subsequent professional reviews(29-32) and

research(33) concluded that effective steps had yet to be taken to improve co-ordination in the delivery of services required by individual patients or clients. Other studies of the employment rehabilitation(34) and resettlement services(35) suggested several reasons for their generally poor performance. These included service providers' lack of an accurate appreciation of clients' problems and need for services; inflexibility and ineffectiveness of established procedures for meeting such needs and poor housekeeping of relevant professional and technical expertise. Considerable scope to improve the efficiency and effectiveness of existing services was therefore identified. A further outcome of research was the identification of groups of disabled people who failed to benefit from existing arrangements. Particular examples included those with such disabilities as mental illness(36-39) and those who are only capable of part-time employment, and who are currently discouraged from seeking such employment because it would prejudice their entitlement to Invalidity Benefit payments(40,41). Research therefore posed questions about both the scope and the effectiveness of provision.

A third source of pressure to review policy and services came from the disabled lobby. In a celebrated lecture delivered before the Royal College of Surgeons of London in 1967, Townsend(42) drew attention to the lack of fundamental knowledge concerning the true extent of disablement in society and the related tendency, in the absence of such knowledge, for provision for the disabled to be settled almost capriciously upon some groups to the exclusion of others. Those observations undoubtedly stimulated the undertaking of survey research like that of Sainsbury(43), Harris and Buckle(44) and the many studies made by local authorities in response to the statutory requirements

upon them to do so under the Chronically Sick and Disabled Persons Act, 1970(45).

In turn, this work sharpened the awareness of disabled people and organisations representing their interests regarding the adequacy and effectiveness of various services, and also the very limited extent to which they had been consulted over their development and operation. As a result, the decade leading up to the International Year of Disabled People in 1981 was a period in which disabled people became much less inclined to see themselves as passive recipients of official prescriptions for their health, welfare and employment and much more conscious of their rights and entitlement to equal consideration with their non-disabled counterparts in all areas of life, including the work place.

In general terms, this awakening of consciousness helped to shape later efforts to introduce anti-discrimination legislation(46). In the area of employment, such concern was voiced in a series of reports which were very critical of existing services, which suggested ways in which existing services and policy could be made more effective and which identified several new lines for the development of policy and practice(47-52). These reports clearly conveyed disabled people's disappointment over the failure of Tomlinson's policy and package of services to help them achieve a fair share of employment opportunities. They also revealed their conviction that this objective could only be achieved by measures to strengthen the quota scheme, to expand provision for sheltered and other forms of subsidised employment and to remove other barriers which presently prevent disabled people from obtaining a fair share of part-time jobs.

Although each of these developments contributed to the backdrop against which the Manpower Services Commission has conducted its recent reviews of policy and services, it does not follow that all have been reflected in new developments or other proposed changes. It is also arguable that proposed changes in policy and practice do not take into account fully other developments which have taken place since Tomlinson first considered these problems. In forty years, there have been significant changes in the types of disablement experienced by people of working age, major advances in the clinical management of illness and injury and quite dramatic changes in the composition of the labour market. Despite these developments, the Manpower Services Commission's initial proposals appeared to be more concerned with refining definitions of eligibility for services than with changing the pattern of services available since Tomlinson. To set them in perspective, and to judge their appropriateness to changing social and economic conditions, it is necessary to consider the extent to which Tomlinson's conception of the labour market for disabled people still applies.

This task is made difficult by the fact that, as yet, we still lack a comprehensive model of the labour market for disabled people. One reason for this is that relevant government departments do not collect the kind of data needed to construct a model of this kind(53). It is necessary therefore to fall back on other sources, including what has been learned from the limited amount of survey research conducted in this area. The "guesstimates" of the number of disabled people of working age produced by these methods vary considerably. At one end of the scale, official sources (54,55) suggest that between one and

one and a half million people should be included in this group. In contrast, Townsend's survey research(56), suggests that the figure may be as high as three million. Estimates of the proportion of this group who are unemployed are equally variable. In this case, official statistics suggest that the rate of unemployment amongst registered disabled people is about twice as high as the rate for the labour market as a whole, and assume that a similarly higher proportion of unregistered disabled people are also out of work. Townsend's research(57), however, suggests that as many as three out of ten males and one in two females with some appreciable or severe incapacity are unemployed. The latter figures, of course, include a small proportion who are more or less permanently out of the labour market and a further proportion who are only capable of part-time work. Wood and Badley's(58) research suggests that the former may comprise approximately three per cent of the adult population. There is no satisfactory estimate of the size of the latter group(59). It is significant that both of these groups are currently excluded from official statistics, which continue to focus only on those who are available for full-time employment.

Research has also begun to tell us a little about the kinds of people involved. The most important finding here is a very clear suggestion that there are important differences between the characteristics of disabled people in employment and those who do not have a job. Those in employment have a similar age range to the work force as a whole and perform a fairly representative cross-section of all available kinds of work(60). It would also seem that employed disabled people do not differ from their non-disabled counterparts as regards their records of time-keeping, attendance and safety in the workplace(61).

Unemployed disabled people, who comprise the clientele of the specialised services provided by the Manpower Services Commission, do not share these characteristics. Such people are generally older and much more likely to lack marketable job skills. As a group, they are also significantly more likely to include people with disabilities that would make them hard to employ under almost any circumstances - including, for example, histories of psychiatric illness. Their number is also more likely to include a significantly higher proportion of people with extremely poor employment histories(62-63).

It was evidence of this kind about the present clientele that led officials in the early 1980s to conclude that the majority of disabled job seekers may have more in common with other groups of long-term unemployed people than they do with disabled people in employment; that specialist services devoted to all members of this group led to dilution and ineffectiveness and that they would be much more effective if concentrated on a smaller number of recently disabled people. These themes dominated the reviews of employment rehabilitation and of other forms of assistance to disabled people, published in 1981 and 1982 respectively(64, 65) and, for a short time, clearly coloured the Commission's thinking about the future development of services(66). But while it is undoubtedly true that the disabled clients of these services do seem to share a number of characteristics with other disadvantaged groups in the labour market, it is open to question whether a decision to treat them as similar is in fact justified. To do so overlooks two important considerations.

In the first place, this assumption overlooks or plays down the part that disablement plays in leading disabled clients into situations

where they share the disadvantages of long-term unemployment with other groups. For them, disability can be an additional handicap. To the extent that it is, unless new measures are taken to reduce or remove those aspects of disadvantage attendent on disablement itself, any improvement in labour market conditions could see the earlier return to work of other long-term unemployed people, leaving the comparatively disadvantaged position of disabled people unchanged.

Secondly, policies that concentrate on the similarities between disabled people and other disadvantaged groups rather than on any differences are in effect a denial of the case that disabled people are entitled to specialised assistance in the labour market. This would certainly seem to be the intention, as outlined in the Manpower Services Commission's review of assistance for disabled people(67). This proposed a transfer of responsibility for the majority of clients currently on Disablement Resettlement Officers' caseloads to the general Employment Service, where they are now treated along with the generality of long-term unemployed people. It is arguable that the justification for this transfer is also open to question. Such clients, who in many instances may not have been submitted for vacancies for two or more years, are not only handicapped by their disabilities but also by the patent ineffectiveness of the specialised assistance provided to help them overcome such problems.

It is significant that, with the exception of employment rehabilitation, where a comprehensive five year evaluation was undertaken(68), lack of effectiveness of specialist services over the years has not been a main feature of official reviews of policy and services. And yet it is quite possible that it is this very lack of

effectiveness in some of the services set up on the Tomlinson Committee's recommendation which has perpetuated the (currently masked) comparative disadvantage of disabled people in the labour market and, hence, which has contributed to those changes in labour market participation by disabled people with which current proposals seek to deal. In other words, a more comprehensive analysis might suggest that Tomlinson's conception of the labour market for disabled people has been overtaken by more recent events.

Although this aspect tends to be overlooked, re-examination of Tomlinson's assumptions and expectations would confirm that the majority of disabled people still manage to obtain and retain employment on their own efforts and without specialised assistance beyond that provided by their doctors and/or employers. It would also confirm that there are still significant minorities of people who are more or less permanently out of the labour market or who are currently capable only of part-time employment and therefore who are ineligible for official services, which theoretically are still available only to those who are deemed capable of full-time employment. There is also a continuing need for sheltered employment for those who are unable to compete in the open labour market on equal terms with non-disabled people, although it is increasingly doubtful whether the modestly expanded provision of sheltered workshop places caters adequately for all needs of this kind.

What has changed, and dramatically so, is the number of people who are judged unable to return to work without some specialised assistance of the kind provided by Disablement Resettlement Officers, employment rehabilitation centres or training services. This group has increased

substantially in number over the years and has also changed in composition. Research into the characteristics of ERC clients and official reviews of Disablement Resettlement Officers' case records have shown that, at the present time, recently sick or disabled clients, for whom Tomlinson envisaged services would be mainly provided, comprise only a fifth of the total number of disabled people registered for employment with the Manpower Services Commission(69,70). As previously noted, most clients are people whose disabilities are of much longer standing, who have few or no special skills and who have been out of work for considerable periods. In many cases, therefore, they are those people whom specialised services have failed to place in preceding years.

The accumulation of a large pool of long-term unemployed disabled people was certainly not anticipated by Tomlinson, whose blueprint assumed that most, if not all, of those needing special help would benefit from it. Responding to their needs therefore may require new measures. These will need to respond to the effects of recession which have been felt most keenly in those labour market sectors in which, previously, vocational rehabilitation service clients have been most readily placed. They will also need to take into consideration the evidence that policy and services have not adapted well to the needs of a changing labour market and the somewhat limited scope of recent official reviews of policy and services, which have tended to tinker with the system rather than ask more fundamental questions about its effectiveness and ability to respond to future changes. A more searching and embracing review should look beyond the Tomlinson inheritance to identify the kind of provision required in a post-industrial context. The concluding part of this examination of

British vocational rehabilitation policy and services attempts to identify some of the practical issues that might be of concern to more searching reviews of this kind.

OPTIONS FOR FUTURE POLICY AND PRACTICE

When looking to the future, it should not be forgotten that some existing approaches are still quite successful and may merit inclusion in any new policy or package of services. The job introduction and employment rehabilitation centre job rehearsal schemes, which allow potential employers and prospective employees opportunities to assess the latter's suitability for particular vacancies, are both good examples of this type. Another example is the recently formed Disablement Advisory Service, which is already succeeding in its appointed task of establishing more effective links with employers by promoting the recently promulgated Code of Good Practice on the Employment of Disabled People(71) and increasing significantly the rate of uptake of technical aids to employment, adaptations to equipment or premises and other workplace accommodations for disabled employees.

Nor should it be overlooked that, in comparison with the record of some other countries, Tomlinson's complete package of policies and services has been quite effective over the years. Although disparities between the proportions of disabled and non-disabled people in employment suggest that its objective of equity has never been achieved, Townsend's evidence(72) suggests that some two thirds of British people under pensionable age who also have a moderately severe or severe incapacity are in employment. This is a much higher proportion than is found in many other countries including, for

example, the United States, where the most recent statistical analysis estimates that only one third of its disabled people of working age are in employment(73).

Given that the job placement records of specialist vocational rehabilitation services in the two countries are quite similar (once allowance has been made for the use of different criteria in the definition of what constitutes an effective placement), it is unlikely that the markedly higher level of labour market participation by people with disabilities in Great Britain is especially attributable to the specialist services established on Tomlinson's recommendation. But two other aspects of Tomlinson's overall package, either singly or in combination, could account for the difference. These are, firstly, the fact that the United States has no quota scheme and, secondly, the fact that generally, at least until quite recently, American employers have tended to avoid involvement in industrial rehabilitation, preferring to leave such matters to, for example, state-federal vocational rehabilitation services(74).

Despite its well documented shortcomings, therefore, the British quota scheme may have helped to create a more favourable climate for the retention or hiring of disabled employees than is sometimes recognised. Employers' response to Tomlinson's clearly stated expectation that the majority of disabled people would be able to enter or re-enter employment without assistance from specialist vocational rehabilitation services may have been similarly underestimated. This possibility is clearly suggested by the results of two recent studies, conducted in Scotland and the West Midlands(75,76), which found that assessments made by occupational

health and personnel department staff indicate that, on average, between seven and nine per cent of the employees of four public sector and three private sector work forces had disabilities that would qualify them to register as disabled, if they so wished. This contrasts with official records which showed all these organisations as barely complying with the set quota of three per cent or, in some cases, falling below that level.

It would appear that, in focusing attention on the Manpower Services Commission's responsibilities for policy and services, official reviews may have attached much less importance than was merited to the two most positive and effective aspects of Tomlinson's package. Reasons for this might include a heavy reliance on evidence provided by officials responsible for particular policies or services rather than a more open system of review since the Piercy Committee reported in 1956. They might also include the fact that, since the DE Research and Planning Division review of 1972, all reviews and policy decision making have been guided by resource constraints aiming to contain the rising costs of sheltered employment rather than by any assessment of need. As a result, attention has been focused on the efficiency and effectiveness of services, with little analysis of how disabled people in general cope in the labour market or of employers' policies and practices. Nor has there been any serious review of the adequacy of funding for this aspect of employment policy or its allocation between the various officially provided services.

Neglect of these wider aspects and more fundamental questions may have resulted in underestimation of employers' contributions. More importantly, it may also have resulted in underestimation of the

marginality of a high proportion of vocational rehabilitation service clients. The truth is that only a minority of clients now benefit from such assistance and that, normally, these are the most able or potentially employable ones, casting a shadow of doubt on the employability under competitive conditions of many who are not so placed. The apparently marginal status of many vocational rehabilitation service clients is underlined by evidence on the low resettlement rates of former employment rehabilitation centre clients(77-80). It is further underlined by the Manpower Services Commission's review of other forms of assistance for disabled people which revealed that 40 per cent of Disablement Resettlement Officers' clients had not been seen for six months and that 65 per cent had not been submitted for a vacancy for at least two years(81).

That such clients are not representative of all people with disabilities of working age was not anticipated by Tomlinson. Nor has it been a major point of reference in subsequent reviews of policy and services. Like Tomlinson, these have tended to assume that a sharp distinction can be made between suitability or unsuitability for open employment. Undoubtedly, future policies will need to take into consideration much more effectively than those they supplement or replace not only the changing nature of the labour market but also the evidence that a considerable proportion of clients may not match up to Tomlinson's assumptions regarding their suitability for competitive employment. Given employers' moderately effective track record of retaining or engaging disabled workers and the apparent reasonableness of their insistence on concentrating such efforts on those who are suitable for the vacancies they wish to fill, it is possible that, by not acknowledging fully the marginal labour market status of many

disabled people, many recent initiatives may not bring much additional benefit to the majority of employment rehabilitation centre and Disablement Resettlement Service clients, even if they do benefit other people with disabilities, whether employed or unemployed.

Such new initiatives cover a wide range of different options including "marketing" strategies to promote the abilities of disabled people(82) and a scheme to identify and reward examples of good practice(83). They also include proposals to "reinforce" the quota scheme, linked to promulgation of a code of practice on the employment of disabled people for the guidance of employers(84,85); the previously mentioned reorganisation of the Disablement Resettlement Service(86); and experimentation to enhance the effectiveness of employment rehabilitation centres(87-89). To these can be added recommendations (which have yet to be acted on) from other bodies to strengthen the law relating to the employment of disabled people, both specifically in relation to the quota scheme(90) and more generally through anti-discrimination legislation(91); to improve the professionalism of vocational rehabilitation service personnel(92,93); and to improve disabled people's access to education and training opportunities, again both generally(94) and specifically for young disabled people(95).

Apart from employment rehabilitation centres, in whose case recent statistics reveal some gradual improvement(96), new initiatives involving existing services have not as yet resulted in higher resettlement rates. But it might be unrealistic to expect developments which are limited to the organisation and operation of services rather than the wider social and economic climate in which

they are provided to have a marked influence on placement statistics. Other research(97-99) has clearly indicated that vocational rehabilitation service efficiency and effectiveness is only one element in a complex equation embracing at least a dozen other major variables which can influence clients' success in obtaining employment. Given both the marginality of many clients and the parlous state of the British economy in recent years, a fairer evaluation might reflect on the extent to which extra staff effort and more effective programmes have been needed simply to mark time in an increasingly adverse labour market.

If some of the Manpower Services Commission's recent initiatives do not prove to be all that helpful to vocational rehabilitation service clients in the years ahead, are there other measures which might be more effective? A closer examination of employers' reasons for retaining or engaging people with disabilities suggests several alternative possibilities for consideration. Few do so out of charitable motives or because they fear prosecution. Rather, disabled workers are retained if the cost of finding and training replacements exceeds that of retention, and disabled workers are hired only if it is believed that their productivity will equate with that of non-disabled co-workers. In a world in which the majority of vocational rehabilitation service clients have a marginal labour market status and in which a commitment to equity in the labour market for people with disabilities is retained, the policies that will be found effective might well be those with which employers can identify a little more readily than those pursued at the present time.

For example, the clients who have most difficulty in finding

employment are those whose capabilities are deemed to be too good for sheltered employment but not good enough for the open labour market. Such people are unlikely to be helped by the Manpower Services Commission's recent decision to transfer responsibility for their cases from the Disablement Resettlement Service to the general Employment Service. Nor are they likely to be helped by a policy of persuasion aiming to encourage employers to adopt more progressive personnel policies. At best, such steps may benefit disabled people who already have jobs or other people who become disabled whilst in employment, by encouraging employers to take steps which otherwise may not have been contemplated to retain their services.

Disabled people themselves and organisations representing their interests are well aware of the problem. They recognise that more effective policies will be those which stimulate demand for their labour. But they also recognise that, in the present economic climate and in a rapidly changing labour market, significant gains in employment opportunities are unlikely to be found in the open employment sector. While they are concerned to retain the quota scheme in order to preserve a measure of protection for disabled people in open employment, they are now equally concerned to achieve a marked expansion in sheltered and part-time employment opportunities(100).

It is both significant and disappointing that developments of this kind are not envisaged. Sheltered employment, at least that part of it which is based in sheltered workshops, is the one aspect of provision for disabled people which will remain largely unaltered by current proposals for the future development of vocational

rehabilitation in Great Britain. Successive governments have been reluctant to provide the substantial capital outlay needed to finance a significant expansion of sheltered workshop places. In similar fashion, part-time employment opportunities continue to be blocked by the reluctance of the Department of Health and Social Security to introduce a partial Invalidity Benefit scheme. Nevertheless, some progress has been made in placing disabled people on the Community Programme, one of the government's recent measures to combat long-term unemployment. This programme provides a maximum of one year's work experience for people who have been unemployed for 12 months or more. In some regions, disabled people have comprised as many as a tenth of all entrants to the Community Programme and, like their non-disabled counterparts, some have used the experience as a springboard to more permanent employment. However, this programme does not, and cannot, guarantee that outcome. Inevitably, therefore, the temporary nature of Community Programme is a drawback for many prospective participants. This disincentive is particularly marked for people with disabilities whose incomes, both during their participation in the programme and afterwards (if they fail to find employment and are obliged to apply for Unemployment Benefit), could be less than they receive in Invalidity Benefit and related allowances(101).

Subsidised or supported employment schemes could prove to be a much more cost-effective option. In the United States, a federal scheme, the Targeted Jobs Tax Credit scheme, subsidises the employment of some disabled people by allowing employers to offset against tax over a three year period a progressively shrinking proportion of the wage costs incurred in employing disabled beneficiaries of this arrangement. In Great Britain, the recently introduced Sheltered

Placement Scheme, developed from earlier schemes for enclaves and sheltered industrial groups, serves a similar purpose by enabling disabled people to be employed individually or in small groups in open settings and to be paid the going rate for the work done. In this case, the employer is responsible only for that proportion of the total wage that represents the actual amount of work done, with any difference between that amount and the full wage made up by state subsidy. The attractiveness of the Sheltered Placement Scheme to disabled people and the many voluntary sector organisations concerned with their employment is evident in its rapid expansion. In a few years (1982-1986), the number of sheltered placements increased from about 250 to around 2,000. By the end of 1986, its potential for expansion was enormous, and was held in check only by the Manpower Services Commission's reluctance to allocate additional funding for further developments of this kind(102).

Noble(103) has proposed another approach which might be more successful in attracting employers' interest and involvement in subsidised employment schemes, a tax policy which either partially or totally eliminates taxation on the production of recognised disabled people. In common with present policy on sheltered placements, it would subsidise the employment of marginal disabled workers. It would affect the prices employers could place on their product as a function of how much of their revenue is produced by disabled workers. As Noble has pointed out, adoption of a policy along these lines would mean that it would be in the best interest of competing firms to engage people with disabilities, to retain employees who become disabled and to find ways of optimising their productivity. Above all, it would be comparatively inexpensive to implement and might

appeal to employers both in requiring only a minimum of government intervention and in having a reinforcing rather than a punitive orientation. As noted above, tax policies to facilitate the employment of disabled people have already been adopted in the United States. They have also been implemented in some socialist countries: for example, Poland, where such arrangements have been made in favour of products from its national network of invalid co-operatives(104). In Great Britain, such options have yet to receive serious consideration, and may never do so.

CONCLUSIONS

In recent years, the Manpower Services Commission and its staff have made conscientious efforts to enhance the efficiency and effectiveness of its specialist services for disabled people and to adapt policy and practice to dramatically changing labour market conditions. While recent initiatives are to be applauded, this brief outline and evaluation of British vocational rehabilitation policy and services suggests that their development over the years has been characterised by a cautious, reactive approach. The scope of official reviews has been very narrow; most new developments have taken the form of short-term solutions to immediate operational problems and, with the notable exception of employment rehabilitation centres, there has been comparatively little investment in the formal evaluation of services or in experimentation with alternative approaches. Because opportunities to make more fundamental changes have been missed, policy and services still bear the imprint of the Tomlinson Committee.

Also, few resources have been allocated to examination of alternative, longer-term scenarios for the development of policy and services in

response to ongoing changes in the distribution of occupations and the nature, organisation and meaning of work. But other policy options are being examined by other professions, the voluntary sector and disabled people themselves, around whom a more powerful lobby has emerged in recent years. Consumers' fuller participation in policy decision making and service delivery therefore could have the most decisive influence of all on the scope and effectiveness of policy and practice in the years ahead.

Disabled people's criticisms of the relevance of policy and services have been reinforced by the results of research and the outcomes of professional reviews. All share a common concern about the need to adapt and improve individual services and to achieve better co-ordination in the delivery of the various forms of advice and practical help required in individual cases. Over the years, the Ministry of Labour, the Department of Employment and, most recently, the Manpower Services Commission have received a fairly constant flow of advice, especially from the medical profession, as to how to achieve these objectives, but most seems to have gone unheeded. As a result, communication between the two has become strained and, rightly or wrongly, many doctors have been dissuaded from referring their patients to employment rehabilitation and resettlement services, disrupting the very continuity between medical and vocational rehabilitation that Tomlinson's proposals sought to establish.

There is comparatively little evidence on the number of British vocational rehabilitation services' clients who have pursued, or are pursuing, claims for compensation for personal injuries(105). In their case, rehabilitation and return to work could be influenced not

only by any involvement they may have with vocational rehabilitation services but also by their involvement in the medicolegal system. Chapter Three describes the British medicolegal system and presents an opportunity to consider the extent to which pursuit of compensation may conflict with the aims of rehabilitation.

CHAPTER THREE

Rehabilitation and Personal Injury Claims Litigation

REHABILITATION AND COMPENSATION

The rehabilitation services established on the recommendation of the Tomlinson Committee were not conceived in isolation. Rather, as Tomlinson's report acknowledged(1), its prosposals were inspired by Sir William Beveridge's more embracing vision of a national system of social insurance which, inter alia, would provide comprehensive health and rehabilitation services(2). Beveridge had pointed out that existing arrangements did little to encourage continuity between medical treatment and any other help that might be required to enable employees to return to work after illness or accident. He was particularly concerned about the workmen's compensation system's failure to encourage development of relevant rehabilitation services, concluding that:-

> "In 45 years of its existence, the present system of dealing with industrial accident and disease has contributed little or nothing to the most important purpose of all, which should come first, namely restoration of the injured employee to the greatest degree of production and earning as soon as possible"(3).

There are several reasons why Beveridge found rehabilitation and compensation to be strange bedfellows. One of the most important was that rehabilitation itself had made little progress. The pioneering work of Sir Robert Jones, who set up rehabilitation departments in military orthopaedic hospitals during the first World War, was not emulated in civilian hositals in the post-war years. In fact,

rehabilitation received comparatively little further attention before the mid 1930s, when reports from a British Medical Association Committee on Fractures(4) and the Delevigne Committee(5) revived interest in the subject. Both of these Committees drew attention to the potential social and economic benefits of effective remedial and rehabilitation services, and there can be little doubt that their deliberations influenced Beveridge's appreciation of the need for such services.

The medical profession's renewed interest in rehabilitation, however, does not seem to have been shared by other relevant parties. Employers, insurers and trades unionists were more reluctant to commit themselves to new developments. This may have reflected longer standing commitments to positions adopted in ongoing debates about workmen's compensation and policy on the employment of disabled people. For example, in 1920 the Holman Gregory Committee(6), appointed to review the workmen's compensation scheme, noted that current arrangements did not allow payments to be made to cover the cost of after-care or rehabilitative treatment to minimise residual disablement, and recommended that such payments should be made. However, no action was taken on this recommendation - presumably, as Brown(7) suggests, because employers, through their insurers, were expected to bear the additional cost, and this was resisted.

Trades union indifference to rehabilitation at this time was attributable to other factors. Firstly, they were - and possibly still remain - attracted to systems which maximised cash benefits to members. Securing a workmen's compensation scheme in 1897 had been one of the movement's major achievements and, not surprisingly, unions

attached great importance to demonstrating how it operated for members' benefit. In this context, rightly or wrongly, a system of cash payments could be more readily justified than one which incorporated the less tangible benefits of rehabilitation and earlier return to work. Their commitment to cash compensation was also evident in other ways. When workmen's compensation legislation had been passd in other countries, for example Canada and the United States, the right to take legal action against employers had been surrendered. Elsewhere, therefore, workmen's compensation schemes generally were expected to cover all contingencies, whether or not the employer had been at fault. In Britain, however, the unions did not wish to surrender the right to take such action under the Employers' Liability Act, 1880(8). That right therefore was preserved alongside entitlement to claim under the workmen's compensation system. Preservation of a double remedy in this country thus kept union interest focused on cash settlements and, indeed, may still do so. Consequently, whereas workmen's compensation schemes were quite a strong stimulus to development of relevant medical and vocational rehabilitation services in other countries, this did not happen in Great Britain.

A second reason for trades union indifference to rehabilitation was discernible in their response to the Delevigne Committee's proposal to establish under medical supervision a national network of medical and vocational rehabilitation centres(9). The Trades Union Congress was adamant that such centres should be concerned only to restore injured workmen to their former occupation. The suggestion that the centres should also re-train patients for other suitable occupations was blocked because the unions feared that such persons could become a

source of cheap labour and threaten their members' jobs(10). But it was not only the unions who were reticent to contemplate fuller development of vocational rehabilitation services. Recent research on the background to the Disabled Persons (Employment) Act, 1944(11) has shown that neither they nor employers were enthusiastic supporters of Tomlinson's proposals. It has also highlighted the crucial role that Ernest Bevin, Minister of Labour in the wartime coalition government, played in preparing the ground for the legislation which enabled the introduction of such services after the war.

While Beveridge made little comment on the trades union stance on these matters, his comments on the other parties were much less reserved. He noted disapprovingly that employers and insurers had failed to take any action in response to the Holman Gregory Committee's recommendation that they should meet the additional cost of post-hospital, rehabilitative treatment. He also regretted the fact that their evidence to the 1938-41 Royal Commission on Workmen's Compensation indicated that they were still unwilling to move in this direction(12). His strongest criticism, though, was directed at the insurance industry, whose evidence (prepared by the Accident Offices Association) to the same Royal Commission was taken to demonstrate that:-

> "The companies do not regard provision of treatment and rehabilitation as any part of the insurer's responsibility... In effect treatment is completely separate from compensation in the case of an accident as it is not separated in the case of unemployment and health"(13).

As might be expected, insurers disputed this point. They also contested a related allegation that they were concerned only with cash compensation. An Accident Offices Association memorandum, prepared for Beveridge's own Committee, claimed that insurers supported

rehabilitation in principle, and expressed the view that they would find it easier to deal with expenditure on rehabilitation if the cost of treatment was associated with compensation under the workmen's compensation legislation(14). These arguments did not persuade Beveridge to soften his criticism. The evidence was that only a few indemnity associations and mutual insurance companies had taken any steps to provide claimants with medical treatment or post-hospital rehabilitation, and their involvement was "a rare exception"(15). Thus, as far as Beveridge was concerned, the workmen's compensation scheme and, presumably, personal injury claims litigation (where insurers were also extensively involved in employers' liability and an increasing number of third party motor claims), had yet to incorporate rehabilitative principles and practices.

Many developments have taken place since the Beveridge report, including the introduction of the National Health Service and other apparatus of the welfare state. Provision has also been made for an array of remedial, rehabilitation and resettlement services. In common with many other countries, therefore, Great Britain has developed a complex, multifaceted system to provide compensation, financial support and other forms of assistance for people of working age who fall prey to illness or accident.

For the most part, this system cannot be claimed to be particularly generous. It shares with similar systems elsewhere the underlying rationale of encouraging people, wherever possible on recovery, to return to work. It therefore generally aims - although not always successfully - to provide a level of income that is lower than that obtainable through employment. Nevertheless, estimates of the number

of new beneficiaries of such forms of help each year suggest that its scope is both extensive and growing. The Royal Commission on Civil Liability and Compensation for Personal Injury(16) estimated that, in the mid 1970s, there were approximately 1,750,000 new beneficiaries each year. A more recent estimate from the Lord Chancellor's Department in 1986(17) is that new beneficiaries now number around 2,500,000 persons a year.

For the majority of beneficiaries, the main - mostly the sole - source of assistance from this system takes the form of social security payments and related state benefits. In the case of some small minorities, however, these sources of "safety net" income during periods of incapacity are replaced or, more often, supplemented in other ways. Some benefit from sick pay arrangements. Others may have purchased additional cover, for example, in the form of personal accident or permanent health insurance policies. Yet others, who are of special interest to this investigation, may have been injured or otherwise impaired in circumstances which entitle them to claim damages for personal injuries and related losses.

As noted previously, many countries provide no-fault workmen's compensation schemes which entitle an accident victim to statutory compensation at set rates, regardless of the victim's culpability for the accident. The British Industrial Injuries scheme and related arrangements for specified industrial diseases, which replaced the workmen's compensation system that Beveridge criticised so strongly, operate in accordance with this principle. In New Zealand, the no-fault principle has been extended to cover all injuries, regardless of cause or who is to blame(18).

Implementation of this scheme, under the Accident Compensation Act, 1972, entailed a complete break away from earlier reliance on the British model of a tort system based on common law liability for death and personal injury and compulsory third party liability insurance, both of which were abolished. The Pearson Commission considered the introduction of a simlar no-fault system in Great Britain, but made no general recommendations to this effect(19). Instead, it opted to recommend some ways in which operation of the British tort system might be improved. Arguments against the introduction of a no-fault system still hold sway. As a result, the tort system remains in force, limiting the circumstances in which victims of accidents in Great Britain can initiate a claim for damages for personal injuries and related losses to those where it can be shown that the accident was caused by the negligence of, or breach of statutory duty by, another party.

Each year, a small number of such claims attract very high awards, although the highest ones generally apply to motor, public liability and medical negligence claims rather than employers' liability cases. Settlements concluded in 1985(20), for example, included a record amount for Great Britain of £679,264. This sum was awarded to a young woman who suffered severe brain damage, haemorrhage and heart attack during a routine tonsillectomy that left her violent, incontinent, with an estimated mental age of six years and with reduced life expectancy (Thomas v Wignall and Others). Other awards in 1985 included one of £500,000 to a woman from Northern Ireland who suffered severe brain damage in a road traffic accident whilst a passenger in a car driven by her husband (McClusker v McClusker and Others); an award

of £434,000 to the male driver of a car who also suffered severe brain damage when his vehicle was in collision with a lorry (Pritchard v Parrott and Another); and a further award of £413,935 to a 21 year old woman whose involvement in a road traffic accident resulted in paraplegia and partial paralysis of both arms (Francis v Bostock). While these very high awards attract the attention of the mass media, all awards of, say, £100,000 or more, comprise only a very small proportion of all personal injury settlements. Over 90 per cent of all personal injury claims are settled for less than £5,000, with the median value of settlements still around £1,000. A more detailed appraisal of the evidence on this point is made in the review of personal injury statistics in the following section of this Chapter.

Before turning to that evidence, it is necessary to consider the implications of a second potentially distorting feature of media coverage of personal injury claims. It arises from the fact that the cases which attract publicity are those whose settlement is recorded in the public record of High Court judgements. Inevitably, these cases include those in which high awards are made for catastrophic injuries. But they also include some other cases in which liability, quantum (the value of the claim) or medical evidence on the causes or effects of injury may have been disputed. The role of the judiciary in interpreting, defining and refining the law of tort, of course, remains of paramount importance, not least because High Court and Court of Appeal judgements create the framework within which other decisions are made.

Judicial involvement may also reinforce the familiar, "adversarial" image of personal injury claims litigation, but it would be wrong to

assume that most personal injury claims are negotiated through formal legal proceedings. Historically, the formal apparatus of the law certainly performed a more central role, providing the context in which a plaintiff could pursue a civil action to obtain damages from a defendant whose negligence had resulted in personal injury to the plaintiff. However, such actions are pursued quite rarely today, because those who commit torts generally are not called upon to pay damages or compensation for what they have done. As Atiyah(21) has pointed out, the development of liability insurance has changed the administration and financing of the tort system out of all recognition, possibly to the extent of converting it from a fault system into a fault and insurance system.

Whether or not Atiyah's assessment is justified, the changes that have occurred have had two related consequences. One is that an injured party may be much less likely to start an action for damages if the potential defendant is either uninsured or not known to be insured against such risks. The other is that insurers' extensive involvement has resulted in most cases being settled in the shadow of the law rather than directly through formal legal proceedings. The extent of this change may be judged from the recent report from the Lord Chancellor's Department. This repeats - and therefore presumably does not contest - the Pearson Commission's estimate that approximately 85 per cent of all tort claims are concluded without any court proceedings(22).

That only a small proportion of the small number of cases in which High Court writs or County Court summonses are issued result in cases being set down for trial, and that only a small proportion of the

latter are eventually heard (because most are settled beforehand), further underlines how far personal injury claims litigation may have moved away from its original procedural foundations. As a result, today's procedures may not only be conducted in the shadow of the law but may also be subject to the conventions of an informal market place in which settlements are concluded mainly by negotiation between solicitors and insurance company personnel and in which others, including members of the medical profession and trades union officials also play important, though less prominent parts. The operation of this informal medicolegal system, and the extent to which it encourages claimants to take advantage of rehabilitation services, are examined later. First it is necessary to consider the scale of the problem and other relevant statistics on personal injury claims.

PERSONAL INJURY STATISTICS

There are no precise statistics on the number of accidents involving personal injuries in Great Britain. Nevertheless, two authorities have made similar global estimates of the scale of the problem. The Pearson Commission, for example, estimated that, for the whole of Great Britain between 1973 and 1975, there were, on average each year, approximately 3,000,000 personal injuries that either necessitated an absence from work of four days or more or, for persons outwith the labour market, that were serious enough potentially to have had this consequence if the victim had been of working age and in employment(23). More recently, the Lord Chancellor's Department has published a higher figure estimating that, in England and Wales alone, there are over 3,000,000 accidents involving personal injuries each year(24).

Despite making similar global estimates, these two sources differ in their estimates of subtotals for different categories of accident. The Lord Chancellor's Department suggests that road traffic and work place accidents respectively account for 215,000 and 350,000 personal injuries, with the remainder attributable to other causes, mainly accidents in the home(25). In contrast, the earlier figures from the Pearson Commission suggested that road traffic accidents numbered approximately 400,000 and work place accidents numbered approximately 680,000 with accidents in other settings accounting for a correspondingly smaller proportion of the total(26). Both reports, though, are agreed in concluding that only a small proportion (approximately 10 per cent) of all accidents involving personal injury result in claims for compensation for those injuries. In comparison with the Pearson Commission's estimate of 250,000 claims(27), the Lord Chancellor's Department's more recent estimate is that some 300,000 claims are now made each year(28).

Research conducted by Harris and his colleagues at the Oxford Centre for Socio-Legal Studies, based on comprehensive interviews with a weighted, nationally representative sample of respondents to a general population survey who reported incapacity arising from accident or illness over a predetermined period, has yielded a similar estimate. This research found that almost 90 per cent of all accident victims included in the study failed to obtain any damages for their injuries and that, of this 90 per cent, the vast majority neither sought legal advice nor proceeded with a claim(29).

All of these sources are also in broad agreement in showing that only a very small proportion of all cases are actually settled in court.

The Pearson Commission reported that, in 1974, of 7,773 cases set down for trial only 2,203 were tried before a judge (1,870 in England and Wales), and that, of the latter, 1,169 cases were heard in the High Court and 701 in the County Courts(30). The Lord Chancellor's Department's estimates for recent years are a little higher. It reports that, in 1984, court proceedings were started in approximately 55,000 personal injury cases, of which, 31,000 were initiated by the issue of a High Court writ and 24,000 by a County Court summons. This report estimates that around 9,000 cases are now set down for trial each year in England and Wales, of which some 1,850 cases are dealt with in the High Court, with a further 1,800 cases heard in the County Courts, whose jurisdiction is limited to claims below £5,000(31). The Oxford research also confirms this picture. Of the 182 accident victims in that study who obtained damages, only four cases (2 per cent) were concluded in court, one in the High Court and three in the County Courts. A fifth claim, also heard in the High Court, was not upheld(32).

These estimates, however, may be an inaccurate guide to the number of accident victims who may be entitled under the law to claim damages. The Pearson Commission, the Lord Chancellor's Department and the Oxford study, all recognise that there may be a considerable number of people who, while entitled to claim, do not do so(33). Reasons for this are said to include, inter alia, victims' lack of awareness of their entitlement to claim; lack of knowledge about how to proceed; mistaken beliefs that injuries may not be sufficiently serious to warrant a claim; fear of legal expenses and difficulty in providing evidence or witnesses to substantiate a claim.

Harris et al. further suggest that the circumstances of the accident may influence the volume of claims made. They found that whereas one in three victims of road traffic accidents and one in four victims of work place accidents consulted a lawyer, only one in 33 victims of other types of accident took this step. Consequently, whereas 29 per cent of road traffic accident victims and 19 per cent of work place accident victims obtained damages, only 2 per cent of the victims of other types of accident did(34). Differences between those who obtained damages and those who did not could not be explained by reference to the severity of injuries or the scale of other losses. Nor were recipients of damages necessarily more likely than others to have suffered more prevalent types of accident; to hold a third party responsible for their accident; or to be more wealthy or influential. The authors conclude that any differences are more attributable to the fact that victims of road traffic and work place accidents tend more often to have access to advice about claiming from their involvement in formal procedures for reporting and dealing with the consequences of accidents in these contexts, with the victims of other types of accident being much more likely to be left to their own devices(35). It follows therefore that the latter are less likely to be influenced by, or drawn into, the medicolegal system.

The predominance of road traffic and work place accident claims is further underlined by two other surveys. The first, reported by the Pearson Commission, showed that claims under these headings comprised no less than 88 per cent of all claims made and 89 per cent of all claims settled in 1973(36). The second is a study by Zander (reported in Atiyah, 1980) which examined 662 cases of personal injury claims heard in the Queen's Bench Division in four major cities in 1973, and

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which found that work place and road traffic accidents accounted for no less than 94 per cent of all cases heard(37).

As already mentioned, well publicised cases that have attracted extremely high awards comprise just a very small fraction of all settlements. In strong contrast with the media's portrayal of the tort system, the actual distribution of settlements is very skewed toward the lower end of the range. For example, a survey, conducted on behalf of the Pearson Commission, of all payments for personal injuries made by insurers in November, 1973 revealed that almost 50 per cent of all payments were for less than £200, and that only one per cent of payments were for £5,000 or more(38). Data from the Oxford research covered settlements made between 1973 and 1979. In this case, 50 per cent of all settlements were for amounts under £500, with only three per cent of settlements exceeding £5,000(39). Other data, released to the author of the present study by the insurance company on whose records it is based, indicated that, as recently as 1981-82 for victims of work place accidents and 1982-83 for victims of road traffic accidents, settlements of £5,000 or more still accounted for no more than five or six per cent of all settlements in these categories. A similar skewed distribution exists for settlements of £5,000 and above. Amounts of £100,000 or more represent only about one per cent of all settlements made within this higher bracket(40). Thus, while settlements of £5,000 or more represent approximately one in 20 claims, those claims which are settled for £100,000 or more, and which attract most publicity, occur much less frequently, in approximately one in every 1,500 to 2,000 claims.

In summary, this brief review of relevant statistics indicates that

only a tenth of the 3,000,000 or so accidents involving personal injuries in Great Britain each year appear to result in claims for damages. However, there may be a larger number of accident victims who are entitled under the law to claim but who, for various reasons, do not do so. Where claims are made, only a small proportion (c. 15 per cent) fail or are abandoned and, of those that are concluded, only a small proportion reach the courts, the majority being settled by negotiation. The majority of claims are concluded successfully, even though generally speaking the sums obtained in damages or compensation are low. Finally, different accident categories yield unequal rates of claim. Whereas injuries at work or as a result of road traffic accidents probably account for less than one half of all injuries, around 90 per cent of all personal injury claims arise from accidents in these settings.

The claimants on whose cases this study is based were awarded damages of between £5,000 and £305,000 for injuries received at work or as a result of their involvement in road traffic accidents. At the time their claims were concluded, settlements at these levels comprised the top five per cent or so of all awards. They cannot therefore be claimed to be representative of all personal injury claimants. A similar claim that they are in any sense representative of all accident victims would be equally, if not more difficult to justify. What may be claimed (albeit cautiously in the absence of any evidence suggesting that there is a statistically significant, positive correlation between the amount of damages received and the severity of the injuries for which they were awarded, or between the amount of damages and the degree of residual disability) is that it is likely that most, if not all, are drawn from that part of the spectrum of

accident victims or personal injury claimants who suffer the most severe injuries, or who experience the highest levels of residual disability. They may therefore represent a small minority of accidents victims who, individually and collectively, make disproportionately high demands not only on the legal system and related settlement procedures conducted by solicitors and insurers but also on the other professions who are involved in providing medical treatment and advice or related services to assist their recovery, rehabilitation and resettlement.

In view of the imprecise nature of statistics on accident victims and personal injury claimants, it is impossible to estimate accurately the number of new cases of this kind that occur each year. Nevertheless, there may be sufficient information to make an informed guess. The Lord Chancellor's Department reports that, in 1984, 31,000 High Court writs were issued in connection with personal injury claims(41). Approximately 10 per cent of these writs will have been for injuries received in settings other than the work place or road traffic accidents. Also, in the normal course of events, small proportions of the remaining claims will have failed, been abandoned or, for various reasons, concluded with awards below £5,000. But not all cases settled at this level involve the issue of a writ. Evidence to be presented later in this study suggests that as many as a third of all cases in which awards of £5,000 or more have been made are negotiated without resort to formal legal proceedings. If this finding is generalisable to other similar claims, it suggests a ceiling of around 35,000 cases.

However, to infer severity of injuries or residual disabilities from fiscal indicators, as the writer has been obliged to do in accepting

(in the absence of more accurate guidance) insurers' advice on an acceptable operational definition of the difference between small and larger claims, undoubtedly entails a considerable degree of error-proneness. There will always be some cases of relatively minor injury - for example, lumbar or cervical strains - which attract higher awards than anticipated, because the physical and psychological sequelae appear to be disproportionate to the severity of the original injury. Equally, there will always be other cases of more severe injury - for example some fractures - that eventually attract awards which are lower than anticipated, because the claimant has been poorly advised concerning the value of the claim, because an early or unexpectedly good recovery is made, or because the plaintiff's contributory negligence causes the final award to be reduced.

Taking these reservations into consideration, and allowing for the lack of accurate statistics, it would seem that the subjects of this investigation are drawn mainly, if not wholly, from that sector of the personal injury claimant population, possibly numbering in the region of 25,000 to 35,000 new cases each year, which makes the highest demands on the medicolegal system and presents the greatest challenges to all concerned with its operation.

THE MEDICOLEGAL SYSTEM

The aim of this section is to provide a simplified, general account of the operation of the medicolegal system with regard to the most straightforward cases in which claims are negotiated successfully(42). It concentrates on procedures followed in claims for injuries or impairments received in road traffic accidents or at the work place rather than on such other possible examples as domestic accidents and

medical negligence or public liability claims. As noted previously, the latter represent only about one tenth of all personal injury claims. This account also concentrates on procedures followed in England and Wales, where the majority of personal injury claims arise in Great Britain. It can be noted, however, that procedures under Scottish law are broadly equivalent. The account opens with a brief, general statement of the legal position on an injured party's entitlement to claim damages for personal injury. It then outlines the steps that are taken typically in making and negotiating a claim, distinguishing between those cases that are settled without resort to formal legal proceedings; those in which such proceedings are commenced but not seen through to completion; and those which go to trial. It concludes by examining the role of the medical profession in the medicolegal system.

Entitlement to claim

Most claims for personal injuries received in road traffic accidents are made within the compass of the Road Traffic Act, 1972. This makes it compulsory for the owners or drivers of vehicles to be covered by appropriate third party liability insurance(43). For those injured or impaired at work, similar protection is provided by the Employers' Liability (Compulsory Insurance) Act, 1969. However, as noted in earlier references to the tort system, not all injuries or impairments are covered by such legislation. It embraces only those circumstances in which the injuries or impairments can be shown to have been caused, directly, indirectly or vicariously by the negligent action of another person or, in the case of some work place accidents, by the breach of a statutory duty. Thus the first step to be taken by anyone who is considering whether or not to embark on a claim for compensation under

these headings is to establish reasonably clearly that it falls within the scope of relevant legislation on third party liability. It is not unknown for ex gratia payments to be made in circumstances where liability is unclear or not admitted. Normally, though, an injured party would be ill-advised to proceed with a claim without first ascertaining that there are good grounds for doing so.

Making a claim

In a small proportion of cases, usually but not necessarily those involving small sums, claimants may take all the required steps themselves, by setting out their claim and reasons for claiming in a letter to the other party or, more often, his insurers, and by negotiating directly with the latter. In other instances, claims are negotiated on a similar basis by unqualified claims assessors.

The vast majority of claims, however, are referred initially to a solicitor (or, in the case of employers' liability claims, to the Legal Department of the relevant Trade Union) who, having formed an opinion on the claimant's entitlement to claim, thereafter pursue the matter on the claimant's behalf. In this case, the usual practice is for the solicitor to write directly to the defendant, setting out briefly the circumstances leading to the claim and advising him to get in touch with his insurers in order to ascertain their views on liability.

Consulting a solicitor would appear to be a crucially important step. While a small number of potential claimants may be advised at this stage that there are insufficient grounds for a claim, results from the Oxford study(44) suggest that failure to consult a solicitor may

account for much of the disparity between the relatively high volume of claims made following involvement in road traffic and work place accidents and the much lower volume of claims arising from accidents in other settings. From the defendant's perspective, insurers would maintain that it is equally important that they receive the earliest possible notification that an accident has occurred and that a personal injury claim may ensue. In road traffic accidents, in particular, negotiations could be influenced by the outcome of any prosecution of their policy holder. They might therefore wish to instruct a solicitor to represent the defendant in any subsequent court proceedings.

Liability is not always clear-cut and, in a small proportion of cases, disputes may be carried as far as the court for a final ruling. In most instances, though, liability (including any apportionment of blame to account for the extent to which the claimant's own negligence may have been responsible for the accident) is agreed through negotiation between solicitors and insurers. If contributory negligence is agreed, the compensation to which the claimant is entitled is reduced in direct proportion to the degree of liability admitted.

Other disputes may arise at this stage over the cause of the accident or the extent to which the alleged injuries or impairments were caused by the accident in question. In these cases, too, any differences usually are settled by negotiation between solicitors and insurers, once again with a very small number of unresolved disputes referred to the courts for a final decision. It is in this context that either side or indeed both sides may seek independent technical assessments

and reports or professional opinions from such other sources of advice and expertise as engineering or medicine.

Negotiating a claim

In principle, once liability is established, consideration can be given to assessing the appropriate amount of compensation to be awarded for the claimant's personal injuries and any other related losses. Calculation of such damages falls into two general categories. The first concerns pecuniary losses including expenses incurred as a result of the accident, loss of earnings and, where relevant, loss of future earnings. The second category embraces non-pecuniary losses. These may relate to impairments (eg pain and suffering or disfigurement), disabilities (eg temporary or permanent loss of physical or mental function) or handicaps (eg loss of standing in the labour market by reason of incapacity to resume former occupation or loss of amenity such as the inability to pursue a particular pre-accident leisure activity). As might be imagined, placing a monetary value on such items is not an easy matter, even though previous settlements, especially those awarded in the courts, may provide an approximate guide or "tariff". Consequently, in practice, negotiating a settlement can become a complex and protracted affair, with both sides often taking very different views on what would constitute a fair or favourable settlement in any particular instance.

For example, even in the most apparently straightforward cases, insurers generally do not admit liability immediately upon notification of a claim. The usual procedure is to issue a standard reply, normally addressed to the claimant's solicitor, requesting a

more detailed statement of the grounds on which the policy holder is held to have been negligent. The onus therefore falls on the claimant's solicitor to collect and furnish evidence to substantiate the claim in the form of statements from witnesses, police reports and technical assessments as well as medical reports. Some of this evidence may be shared. In other cases, it may be only partially disclosed in an attempt to expedite negotiations while at the same time retaining an advantage should negotiations break down and the case go to trial. Often, all that is in dispute is the amount of damages. Insurers may consider that a claim is excessive and decide to defer settlement until the full and final extent of the effects of the claimant's injuries are known. Other delays may occur if insurers are of the opinion that there is a reasonable chance that a court would find a degree of contributory negligence. In such cases, further negotiation may take place in order to agree the percentage by which the final award should be reduced in order to take this aspect into account.

Where many small claims are concerned, the next stage in negotiations takes the form of an exchange of correspondence in which claims are elaborated in great detail and to which insurers may make lower counter-offers until a final settlement is agreed. In other instances, the next step in the bargaining process is a meeting between the solicitor and a member of the insurance company's claims department staff in order to review the claim "without prejudice" (and, again, often without any admission of liability) and to discuss a possible settlement figure. Frequently, these face-to-face encounters lead to conclusion of the claim - after the solicitor has advised the claimant to accept settlement for less than the amount

claimed but possibly higher than the amount offered originally by the insurance company. However, when negotiations break down, the claimant may have no alternative but to resort to formal legal proceedings.

In their client's interest, solicitors often anticipate this development by issuing a writ at a relatively early stage of the claim. This writ, which has to be issued within three years of the accident, and served upon the defendant within 12 months of the date of issue, formally notifies the defendant of the claim against him and requires him to indicate whether or not he proposes to defend it. More often than not such writs are issued as a precautionary measure, to protect the claimant's interests should settlement not be achieved through negotiation. Informal negotiations therefore can and do continue to be conducted alongside formal legal proceedings. They can therefore bring the latter to a close at any time from the exchange of pleadings which follows the issue of a writ up to the middle of a trial itself. But litigation imposes high costs on all concerned. There may therefore be considerable pressure on all concerned to avoid the additional time, trouble and potential expense involved by concluding settlements out of court or, in specific instances in which insurers have responded to commencement of proceedings by making a payment into court, for the plaintiff to accept that payment and thereby terminate proceedings at that point.

It has been estimated that 99 per cent of all personal injury claims ultimately are disposed of by settlement(45). The small remainder tend to comprise those in which, despite all the opportunities that exist for informal negotiation, the two sides remain strongly in

dispute over, for example, the causes or consequences of accidents, liability or the quantum, or which otherwise appear to involve previously untested points of law. In Atiyah's words, this means that in the vast majority of cases, "...the principles of law laid down by the courts do not alone determine whether compensation will be awarded, nor how much will be awarded(46)". While claims are negotiated in an adversarial climate, it is for this reason that the bargaining processes leading to settlement in most cases can be claimed to be conducted in the shadow of the law rather than with the benefit of its full illumination.

The role of the medical profession

Lawyers and insurers occupy the main roles in the medicolegal system. However, as noted previously, its efficient and effective performance is also dependent on less prominent, though no less essential contributions from other professions, including engineers, policemen and, of course, doctors. Because very few personal injury claims, even very small ones(47), are concluded without the benefit of a medical report, none of these other professions is as extensively involved as the medical profession. Consequently, every year consultants and other medical practitioners receive a substantial number of requests from insurance companies and solicitors to conduct medical examinations and to prepare medical reports on patients who are pursuing personal injury claims.

The everyday involvement of doctors in the medicolegal system differs quite markedly from the popular image of eminent consultants being subjected to detailed cross-examination in the High Court because they hold conflicting but equally sincerely held opinions about the causes

or consequences of a particular plaintiff's injuries. Such conflict between expert witnesses does occur in a proportion of the very small number of disputed claims which reach the courts, but such instances are quite rare. Most cases involving genuine conflicts of medical opinion are sorted out at a much earlier stage of proceedings, mostly through discussion between the doctors concerned, though occasionally by seeking a third professional opinion. Achieving consensus on such matters has also been helped by recent changes in settlement procedures. Formerly, it was common practice for both the plaintiff's and the defendant's representatives in a personal injury claim to prepare the medical aspects of their cases independently. Both sides therefore obtained their own medical report/s, part or all of the contents of which were disclosed to the opposing side only if it suited their negotiating strategy to do so. Recently, however, the trend has been toward sharing medical reports at a reasonably early stage in negotiations. This enables both sides to form a clearer picture of the nature of injuries and their effects, including any need for further treatment, and also to reconcile any differences early on, if necessary by seeking additional opinion on disputed points. For the most part, therefore, doctors' contributions to the medicolegal system should be less and less subject to adversarial considerations.

Despite the amount of professional time devoted to preparation of reports for medicolegal purposes, doctors normally will have received little or no formal training for this aspect of their work. In most cases, the requisite knowledge and skills are acquired informally, through experience gained in responding to requests for reports and from the advice that more experienced colleagues are able to give.

Nor does professional literature have much to offer on this score. The results of a literature search, undertaken in 1983 as part of the present study, indicated that, in marked contrast with the voluminous literature on the recording, storage and retrieval of information in patient record keeping systems, only a handful of articles on medicolegal reporting had been published in the preceding decade. Of these, the majority were concerned with general ethical or legal considerations(48) or the release for medicolegal purposes of information from computerised medical record systems(49). Only two articles, by Jowers(50) and Paul(51), offered more practical guidance on the preparation of medicolegal reports.

The authors of these two articles are in almost complete agreement over the main clinical topics that should be covered in every medicolegal report. Both emphasise the importance of a full medical history and the inclusion of an account of how injuries (or other impairments) were received, their immediate effects, the nature of any treatment received between the accident and the medical examination on which the report is based, and the rate and state of recovery. Similarly, both stress the need to record the patient's present complaints, the findings from medical examination and the results of any special investigations. Finally, both underline the importance of a concluding statement giving the doctor's opinion on the causes of the conditions found on examination and a prognosis. Paul takes his guidance a stage further in insisting that a medicolegal report should also include the doctor's views on the consistency between examination findings and the history of the incident viewed against a background of the patient's complaints and past medical history. He also outlines various non-clinical details about the patient, the doctor

undertaking the examination and the date and place of examination which are to be included in every report.

It is worth noting that the literature search failed to unearth a single example of research to evaluate medicolegal reporting practices and procedures. It would appear therefore that guidance on what reports should contain has not been complemented by research to determine whether reports actually conform with that guidance or if there are some aspects of medicolegal reporting practice where standards might be improved. Nor would it seem that any attempt has been made to determine whether guidance on medicolegal reporting reflects the expectations of the solicitors and insurers who request medical reports or how fully reports meet their requirements for information and advice. These issues are of interest to the present study and will be addressed again in later Chapters.

PERSONAL INJURY CLAIMANTS

It was noted above that the subjects of this study are not representative of all personal injury claimants, over 90 per cent of whose claims are settled for sums of less than £5,000. The decision to restrict attention in this study to cases in which settlements exceeded this amount was made on the advice of the insurance company on whose records the study is based. Insurance company staff considered that, at the time sample members' claims were settled, the figure of £5,000 marked approximately the dividing point between small claims, in which injuries or impairments generally do not result in permanent disablement and long absence from work, and larger claims which almost invariably are associated with permanent disablement and/or absences from work of six months or longer. They therefore

expected that the cases selected for study would represent those claimants who make the greatest demands on the medicolegal system and who have most need for, or potential to benefit from,rehabilitation and resettlement services.

A review of relevant literature confirmed that this particular subgroup of personal injury claimants has not been singled out for special consideration in previous studies. The two main British studies of personal injury claimants, by Ison(52) and Harris and his co-workers(53) sampled general populations of claimants, within which small claims outnumber larger ones by an approximate ratio of ten to one. Consequently, they are focused mainly on claimants with minor injuries which occur more frequently, and from which patients normally make a full recovery followed by early return to work without any need for referral to specialist rehabilitation and resettlement services. The more extensive overseas literature on workmen's compensation claimants(54) is similarly biased toward cases involving minor injury and temporary incapacity.

Specialised clinical literature on compensation neurosis(55) and back injuries(56) also refers to personal injury claimants. However, in view of the reported prominence of social and psychological problems in such cases, it is doubtful if this literature offers much of a basis for wider generalisation to other claimants. Weighill's comprehensive review of literature on compensation neurosis(57) did not yield a single example of British research which compared patients who are pursuing compensation claims with a matched control group, with similar injuries or impairments who are not involved in such claims. It would also appear that no research has been undertaken to

record the prevalence of social and psychological problems, including compensation neurosis, in the personal injury claimant population. Until such studies are undertaken, the relevance of this specialised literature to cases of the kind selected for the present study must remain in doubt.

Other clinical literature, either on the various medical problems experienced by personal injury claimants or surveys of persons injured in similar contexts such as road traffic accidents(58) or at work(59), is equally unhelpful. Most studies of this kind have a purely clinical focus, concentrating on the nature of injuries, treatment and response to treatment. A few refer to patients' rehabilitation and return to work(60), but they represent the exception rather than the rule, and even fewer report information about patients' involvement in personal injury litigation. It is quite impossible therefore to ascertain the relevance of much clinical research to personal injury claimants, either generally or specifically with regard to more severely injured patients with potentially higher claims. Clearly, Weighill's conclusion regarding the need for new research, based on more purposive sampling, also applies in this context, notwithstanding the possibility that such research may be difficult to mount given the relatively small proportion of personal injury claimants to be found in most clinically defined populations(61).

Research on personal injury claimants is further limited by the restricted scope of the two main studies by Ison and Harris et al. Both were concerned mainly with claimants' involvement in legal proceedings and other negotiations leading to settlement of their claims. Neither therefore made rehabilitation and return to work a

central concern. Nevertheless, both Ison and Harris et al. felt obliged to draw attention to the potential disincentive of cash settlements as far as rehabilitation and return to work are concerned. Ison, for example, observed that delays in reaching a settlement, particularly in the case of more severely injured claimants where substantial awards might be made, could deter them from considering such options before settlement(62). The Oxford survey reached a similar conclusion, but this was based on an analysis of factors influencing return to work in a sample which included other accident victims who were not involved in compensation claims and persons recovering from various illnesses as well as personal injury claimants(63). Any specific implications for the latter group therefore were obscured in this more embracing analysis. The results - which are reported in a form which implies that they applied to all groups included in the analysis - indicated that labour market disadvantage was strongly associated with prolonged absence from work, regardless of the degree of residual disability found in individual cases(64). Not surprisingly, therefore, the Oxford study also concludes with a firm recommendation that future policy and practice should incorporate "incentives to rehabilitation and avoid disincentives to return to work"(65).

This recommendation is very much in line with the findings of other research in the field of vocational rehabilitation which has highlighted the crucial role of early intervention strategies to maintain continuity of employment or to keep any periods of unemployment to a minimum(66) and which has shown how the costs of disability can be contained by more effective disability management policies both in the work place and elsewhere(67).

Taking stock, very few studies of personal injury claimants have been undertaken previously. Those that have been undertaken have been based on representative rather than more purposive sampling and therefore give greater prominence to smaller claims and minor injuries or impairments. They have also tended to concentrate on claimants' involvement in legal proceedings and other procedures concerned with negotiation and settlement of claims rather than their rehabilitation and return to work. Not one has been concerned exclusively with the experience of more severely injured claimants like those selected for the present study.

Studies of compensation neurosis and back injuries, especially those which give rise to low back pain, are more numerous, as are studies of workmen's compensation claimants in other countries. However, no work has been done to ascertain whether or not the findings reported in this more specialised literature are generalisable to other personal injury claimants. In spite of this limitation, these more specialised literatures should not be overlooked because, in contrast with most clinical research on accident victims, they do include several studies which focus on rehabilitation and return to work. While their substantive findings may be of limited application to all personal injury claimants, it is possible that they could be helpful in identifying some of the variables which may influence the rehabilitation and return to work of this wider group, and which could be evaluated in studies like this one.

This is not the place to undertake a detailed, systematic review of the vast literature on vocational rehabilitation, or even that part of

it which is addressed to the subject of return to work. There are already numerous reviews of this kind(68). It is more feasible, and more relevant to present requirements, to indicate the range of variables which may need to be taken into consideration by making reference to a smaller number of illustrative studies. It should be noted, however, that a simple listing of variables which have been found to be associated with return to work after illness or injury almost certainly disguises the complexity of the problem. In reality, return to work is likely to be influenced by a multiplicity of personal, clinical, psychological, social, occupational and economic factors which may interact in quite different ways in different circumstances. The following brief illustrative listing is subject to this important caveat.

Previous research has indicated that several demographic characteristics may be associated with return to work. The most important of these is age, with numerous studies suggesting that older workers have lower and slower rates of return to work after illness or injury(69). Other studies have suggested that women are less likely to return to work than men and also that they make less frequent use of vocational rehabilitation services(70).

Contrary to what might be expected, clinical variables like the number of injuries or impairments, severity of injury or degree of residual disability generally have not been found to be associated with return to work(71). The exceptions are some extreme or highly selected groups like patients with catastrophic injuries, especially those involving brain damage(72) or workmen's compensation claimants with low back pain and suspected compensation neurosis(73). However, some

studies indicate that length of medical treatment and the number of surgical procedures may be positively correlated with non-return or delayed return to work(74).

There is a vast literature on psychological and psychosocial determinants of return to work after illness or injury. Higher intelligence(75), motivation(76), job involvement(77) and work confidence(78), for example, have all been shown to be associated with positive outcomes, as have high levels of psychosocial adjustment as measured by scales to assess self-worth or self-esteem(79), proneness to anxiety or depression(80) and acceptance of disablement(81). Other studies, which may be of particular relevance to the study of personal injury claimants because they focus on subjects' locus of control and who they hold culpable for their injury, suggest that those with an internal locus of control and/or who tend to attribute blame to themselves rather than to other persons may achieve higher and faster rates of resettlement(82).

Social variables have been examined less extensively. Nevertheless, there is a growing literature that highlights both the importance of family support as a means toward achievement of positive outcome(83) and how lack of support or inappropriate positive encouragement can reinforce disability dependence and deter return to work(84).

In addition to the previously mentioned effects of psychological and social variables which can influence job status, work performance and career development opportunities, occupational level is itself an important determinent of outcome. In this case also, numerous studies have reported that persons with higher occupational skill levels have

higher and faster rates of return to work than those with lower levels, with unskilled manual workers having the worst record of all(85). There is also a small but expanding literature on employers' personnel policies with regard to the recruitment of people with disabilities, the monitoring of sickness absence and the retention or redeployment of employees who suffer illness or accidents, and the part that effective disability management policies can play in facilitating these processes(86).

Two main economic variables have been found to influence rehabilitation and return to work. One is the potential disincentive effect of compensation payments or other benefits and allowances payable to disabled people during periods of incapacity. Numerous studies have demonstrated the existence of this effect and its deterrent influence, particularly on low paid, manual workers(87). The other is the state of the labour market as indicated by prevailing levels of unemployment and the nature of job vacancies. While this aspect has been looked at less frequently than the subject of potential disincentives, the research that has been undertaken amply demonstrates that labour market variables also have a strong association with outcome(88).

REHABILITATION AND RETURN TO WORK OF PERSONAL INJURY CLAIMANTS

This Chapter has looked at the evolution and delivery of rehabilitation services in the context of personal injury claims litigation; outlined the operation of the informal medicolegal system within which such claims are negotiated; and presented some descriptive statistics on its operation. It has also reviewed previous studies of personal injury claimants and identified some key

variables that the wider literature on vocational rehabilitation would suggest to be associated with return to work.

Looking back, it is apparent that, at the time of the Beveridge report, effective rehabilitation and resettlement services had yet to be provided. It is also clear that, up to that time, the medical profession stood alone in pressing for their introduction. Employers and insurers did not wish to bear the additional expense of such services and unions preferred cash compensation over and above any less tangible benefits that rehabilitation could bestow on their members. Such services were provided at public expense in the late 1940s but, while they have benefited many people in the intervening years, there are good grounds for concluding that personal injury claimants do not take the fullest possible advantage of their availability. Even though rehabilitation and return to work was not the main concern of their research, the authors of the two main studies of personal injury claimants felt constrained to conclude that the present system, based on lump sum compensation, is still a powerful deterrent to rehabilitation and return to work. If so, there can be little doubt that Beveridge, himself, would have been gravely disappointed by such lack of progress over the years.

Previous research has been preoccupied with problems arising in the course of legal proceedings and other negotiations leading to settlement of claims, and with wider issues concerning for example, the desirability of alternatives to the present system. It has also been focused on small claims rather than the larger ones for more severe injuries in relation to which there would be more demand for rehabilitation and resettlement services. As a result, such research

has been able to do no more than draw attention to the survival of the problem that Beveridge hoped to solve. Further research is needed to determine what use personal injury claimants presently make of existing provision which aims to assist rehabilitation and return to work. Ideally, such a study should be based on a sample of those claimants who are thought to have the greatest need for, and potential to benefit from, such services. It should also be conducted with a view to identifying possible solutions to any practical problems involved, for example, in referral to required services. This is the first general objective of this study.

The second objective is to identify variables associated with the return to work of personal injury claimants. Such information would be relevant to future decision making on the allocation of resources. For example, it might help to identify at an early stage personal injury claimants who might benefit from referral to rehabilitation, as opposed to those who may have no need for such services or who are unlikely to benefit from them.

Finally, the evidence from previous research showing how few claimants are referred to vocational rehabilitation services at the present time underlines the extent to which the medicolegal system currently relies on the medical profession for occupational information, assessments of residual disability and opinion on potential employment handicap. And yet it was found, inter alia, that no attempt has been made to evaluate the coverage of these and other topics in medical reports on personal injury claimants. The third objective of this study is to undertake an evaluation of this kind using medicolegal reports prepared on a representative sample of claimants.

The aims and methodology of these three analyses are described in detail in Chapter Four.

CHAPTER FOUR

Aims, Methods and Procedures

INTRODUCTION

This Chapter describes the methodology of the three analyses which comprise this study and whose results are presented later:-

* A review and comparison from social, medical, occupational and procedural perspectives of (a) all employers' liability (EL) claimants (N=209), and (b) all third party motor claimants who were of working age when injured and who were in employment at that time (N=609), whose personal injury claims were settled by one insurance company for £5,000 or more over a period of two years.

* A multivariate statistical analysis (a) to determine if return to work before settlement amongst representative samples from the two claimant populations is associated with selected variables that previous research suggests might be predictive of this outcome and, if so, (b) to identify claimants whose return to work might be assisted by referral to appropriate vocational rehabilitation services.

* A content analysis of medicolegal reports prepared on the same two representative samples in which particular attention

is paid to coverage of occupational information, residual disability, psychological problems and employment handicap.

Following sections describe the aims, research methods and data collection procedures used in each of these investigations. They also specify the hypotheses tested and report the statistical procedures used to test those hypotheses. Verification of data, validity and reliability of the research instruments are treated separately in the final section.

This study makes use of information obtained from insurance company claims files rather than data that has been obtained directly from interviews or other standardised data collection and assessment procedures. As far as the writer is aware, no other study has tapped this particular source of material, although the literature does include one report of work based on a limited amount of information which had been extracted from such files by insurance company personnel before being handed over to researchers for analysis (1). Because insurance company records have not been made available for research purposes previously, a brief account of the negotiations which took place in order to gain access to personal injury claims files, and an outline of the nature and amount of information they contain, may help to set the methodological details to be presented later in perspective.

Access to personal injury claims files

Early on in the Developments in Rehabilitation Studies research programme, it was realised that some topics of interest to the programme's sponsors could not be addressed directly by sampling in

clinical populations and that, for some purposes, it would be necessary to collect data from samples of insurance claimants. This was essential if the programme was to produce information about, for example, the incidence of different medical problems experienced by personal injury claimants. As noted in the previous Chapter, a suspicion that only small proportions of most clinical populations become involved in personal injury litigation was confirmed by surveys of patients with hand, head and lower limb injuries. When taken into consideration with the evidence from other studies, reviewed in Chapter Two, that only similarly small proportions of clinically defined populations are referred to specialist medical, social and vocational rehabilitation services, this meant that studies addressing the rehabilitative aspects of personal injury claimants' experience would require either very extensive surveys of clinical populations, to accumulate a sufficiently large number of claimants, or more purposive sampling in claimant populations.

As might be expected for an industry which had not previously permitted outside access to its records, insurers' initial response to the request for access to their files was guarded. One of the companies approached declined to co-operate on the grounds that permission to examine files would constitute a breach of their duty of confidentiality to policy holders. Other companies were concerned that access to such information could result in bad publicity, either for themselves or the industry in general. Only one, a leading company in the British accident insurance market, was more positive. Its General Manager encouraged his Head Office staff to participate in a series of meetings with the writer and his colleagues to allow them to outline the mechanics of the proposed research and to explain

professional ethics and conventions in medicine and social science concerning the handling and disclosure of information received in confidence. However, even in this case - where, clearly, support for research was endorsed at the highest level - access to files took time to negotiate and had to be secured gradually in stages.

Further progress was marked by an invitation to the writer to visit one of the company's Area Offices to inspect a small illustrative series of personal injury claims files under the guidance of the Area Claims Superintendent and his Deputy. This exercise took place in March 1982, six months after the initial request for co-operation had been made to insurers. The objective was to discover exactly what information such files contained, with each of the files reviewed compared against a previously prepared checklist of variables that might be included in a descriptive review of claimants from relevant demographic, clinical, social, occupational and procedural perspectives. This exercise - probably marking the very first occasion on which access to such information had been granted for research purposes - was most helpful and informative. It contributed much to the drafting of a coding frame for a review of claims files that was revised and refined in consultation with the company's Head Office staff in the course of a series of meetings held between May and October 1982. During this time, the company made a clear commitment to the proposed research, and its Head Office staff made substantial contributions to its planning and development. They helped to define its scope by advising that interest should be restricted to cases settled for £5,000 or more, and indicated that, for practical reasons, the research would need to be confined to closed rather than current cases. They also provided a small amount of

material from files to facilitate the piloting of research instruments and procedures.

The next stage comprised a review of all employers' liability claims settled by the company over a two year period (1981-82) in which claimants had received damages amounting to £5,000 or more. To make the exercise possible, the company arranged for all the files concerned, which were then located in various Area and Branch Offices throughout Great Britain, to be sent to its Area Office in Edinburgh, and provided an office there for a Research Associate's use. While the files were retained in that office, the company provided photocopies of medical data in a 50 per cent random sample of the files to be removed to the University for more detailed analysis.

When the company received reports on this work in 1984, researchers were invited to present their findings at a meeting attended by all Area Claims Superintendents, and copies of the research reports were distributed to all Area and Branch Offices. The company's interest in, and evaluation of, the research was also evident in their agreement to extend the work to include a similar review of a much larger sample of motor claims files on all cases concluded for similar amounts during 1982 and 1983. It is a mark of the company's confidence in research staff that, on this occasion, once the relevant files had been assembled from its countrywide network of offices, they were transferred to the University where they were held for the duration of the research. It is to be hoped that completion of this work without any breach of confidence or bad publicity, as feared initially by some companies, may encourage them to participate in future studies of this kind.

Content of personal injury claims files

The administrative practice of the insurance company which collaborated with this study was to create a single file on each accident, irrespective of the number of claims arising from that accident. Thus one file could contain papers relating to a single claimant, as was the case with all employers' liability but only some of the motor claims files reviewed. Many road traffic accidents, however, result in more than one personal injury claim, and often include additional claims for damage to vehicles and/or property. In extreme cases, then, a single file could contain papers on several different claims - as many as 18 in one of the files referred for the present study.

As might be expected, therefore, each file on a concluded case has grown into a substantial, complex and very detailed document. For cases like those reported here, each file comprises literally hundreds of different items recording all the various actions taken with regard to notification, negotiation and settlement of the claim, often over a period of several years. As an approximate guide, a typical closed file would be of comparable size to this thesis, with its contents including most, if not all of the following:-

* Summary pages.

* A copy of the accident report form completed by the policy holder (defendant).

* Copies of police reports, giving information about road

traffic accidents, including witnesses' statements and any technical investigations carried out at the scene of the accident or on the vehicles involved.

* Copies of any other expert reports undertaken in relation to work place accidents or on vehicles involved in road traffic accidents.

* Copies of any relevant newspaper cuttings, photographs, sketch maps, diagrams or law reports.

* Medical reports carried out at the insurance company's request or in conjunction with the claimant's (plaintiff's) advisers, including photographs or diagrams to demonstrate the location, nature and extent of injuries or impairments, and copies of all correspondence, sent and received, with medical experts.

* Reports of court proceedings brought against the defendant or, where relevant, Coroner's court proceedings.

* Copies of all correspondence, sent and received, with the claimant or his solicitor relating to the claim and subsequent negotiations, together with copies of any writs, counsel's opinion and written judgements.

* Copies of all correspondence, sent and received, with the defendant's own legal representative, or solicitor appointed by the company to represent the defendant, together with official defence documents.

* Information about the claimant's employment and financial circumstances before injury or impairment and details of income and allowances received from all sources during any period/s of incapacity following the accident.

* Copies of all internal memoranda concerning the claim including estimates, advice on liability or quantum, reports on the progress of negotiations and of telephone calls, made or received, or meetings with the claimant's representative/s.

* Copies of correspondence, sent and received, with other insurers who might be involved in the claim, for example, through a third party sharing agreement.

* Copies of accounts received and payments made in respect of damage to vehicles or property; legal fees and expenses; medical fees and expenses; police and other expert or technical reports; claimant's expenses; medical treatment provided at the time of the accident or subsequently, for example, for cosmetic surgery; and a record of any interim payments to the claimant and the final award.

In view of the broad scope of the medical, legal, financial, social, occupational and procedural information held on personal injury claims files, not to mention its very detailed nature, insurers' initial concern over granting researchers access to such confidential material might be readily appreciated. But such files provide more than an insight into claimants' experiences and circumstances. It can be seen

from the preceding description of contents that they also provide very detailed insights into the everyday working of the medicolegal system and the parts played in its operation not only by insurers but also by the legal and medical professions, as well as others who may be drawn less frequently into its ambit. This study is pitched at both levels, with the first two of its three analyses focused on claimants and the third examining the role of the medical profession within the medicolegal system.

A COMPARISON OF EMPLOYERS' LIABILITY AND MOTOR CLAIMANTS

Aims

The award of funding for the Developments in Rehabilitation Studies research programme signified a new commitment to rehabilitation on the part of the British insurance industry. Beforehand, it appeared to be widely accepted that claimants who needed rehabilitative assistance were referred to appropriate sources of help more or less automatically. However, once it was demonstrated to insurers that previous research and official and professional reviews of policy and services challenged this assumption(2), and that there might be more cost-effective options for the industry, there was a measure of support for new work to clarify the nature and range of medical problems experienced by personal injury claimants and the extent of their involvement with rehabilitation services. The reviews of employers' liability and motor claims files were conceived and approved in this context, sharing a common general aim of describing the claimants involved from relevant personal, medical, occupational and procedural perspectives. As appreciation of the kinds of problem involved developed and as better information was obtained concerning the nature of information contained in personal injury claims files,

this general aim evolved into the following specific objectives:-

* To record details of the circumstances in which claimants were injured. Examples of variables considered are:- for EL claimants, type of accident (e.g. fall, entrapment) and, for motor claimants, form of transport, time of accident, road surface and lighting conditions, manoeuvre, class of road and number of vehicles involved.

* To describe the personal, social, occupational and clinical characteristics of claimants. Examples of variables considered are:- age, sex, marital status, home area, occupation, social class, number, location, nature and severity of injuries or impairments, length of medical treatment, residual disability, and medical outlook.

* To trace claimants' involvement with vocational rehabilitation services and to record their return to work. Examples of variables considered are:- contact with Occupational Therapy Departments, Disablement Resettlement Officers, Industrial Therapy Units and Employment Rehabilitation Centres, time off work between accident and settlement and return to work.

* To describe claimants' involvement in medicolegal procedures and their outcome. Examples of variables considered are:- legal action/s taken, time from accident to settlement and amount of damages.

While the two reviews were conducted independently, there was an

overriding interest in the comparability of employers' liability and motor claimants on most of these counts. Accordingly, with the exception of data on accidents (where different classifications apply), results will be presented in such a way as to permit a statistical test, mostly using Chi square, of the null hypothesis that there is no difference between employers' liability and motor claimants in respect of each variable.

Subjects

Employers' liability claimants: These subjects comprised all employers' liability (EL) claimants whose claims were settled by the insurance company during 1981 and 1982 in which damages paid to the claimant amounted to £5,000 or more. As mentioned elsewhere in this thesis, this dividing line was adopted on the advice of the insurance company. At the time these claims were settled, it was held to denote approximately the boundary between small claims, in which injuries or impairments generally do not result in permanent disablement and long absence from work, and large claims which almost invariably are associated with permanent disablement and/or absences from work of six months or longer. Claims settled for £5,000 or more were estimated by the insurance company to comprise approximately one in twenty of all EL claims settled, the remainder being concluded for lesser amounts. Claims from Northern Ireland were excluded from consideration on the advice of the insurers who pointed out that this region's claims record differed markedly from the rest of the United Kingdom.

It was not possible to assess directly the representativeness of this population of claimants in relation to all EL claimants who received similar awards from other insurance companies. Discussion with other

insurers, however, suggested that there may be some grounds for believing that a few specialist companies may deal with a proportionately higher volume of claims in respect of industrial disease. Otherwise, this company's EL claimants would appear to have much in common with those dealt with by other composite insurance companies.

Altogether, a total of 219 files were referred for analysis. On receipt, files were logged in and randomly assigned into two groups of 110 and 109 cases respectively (for other research purposes to be reported later). Closer scrutiny of these files disclosed that they included eight in which claimants had received less that £5,000, even though the total cost of the claims exceeded that amount; one case from Northern Ireland and one other file that contained little or no information. These files were excluded, leaving a total of 209 cases for analysis. While this number may appear low, the total damages paid to the claimants involved amounted to £2,700,000, and the total cost of settlement was £3,200,000. Individual settlements, exclusive of costs, ranged from £5,000 to £60,000, with a mean of £12,926 and a median of £8,000.

Third party motor claimants: These subjects comprised all third party motor claimants whose claims were settled by the insurance company during 1982 and 1983, in whose cases damages paid also amounted to £5,000 or more. In this instance, because files could include more than one claim, and because selection by the company was based on files (rather than cases) settled for this amount, the files received included several individual claims that were settled for amounts falling below the agreed dividing line. Considerable preliminary work

therefore was needed to isolate those claimants who qualified for inclusion in this study.

Procedures followed in selecting motor claimants for comparison with EL claimants are summarised in Figure 1. This shows that a total of 860 files were referred for analysis, of which 43 were excluded from further consideration following preliminary analysis. These included 23 files on accidents that had occurred outwith Great Britain; 13 files in which all claimants were of foreign nationality; four joint settlements which did not specify how awards were divided between recipients; one file in which damages were paid in respect of property only (a Rolls Royce car); one file containing only a summary sheet; and one file that was recalled to a Branch Office before analysis.

The remaining files on 817 road traffic accidents included claims from 1,329 victims. The latter included 13 who were joint recipients of damages paid to other claimants; six who were not pursuing claims for personal injury; four who were included in files which were recalled by Branch Offices before analysis and two claimants who were of foreign nationality. These 25 cases were also excluded from consideration, leaving a total of 1304 individual cases for analysis.

Other steps were needed to isolate the motor claimants who were comparable to EL subjects. Firstly, there were 469 claimants who had received less than £5,000 and who were excluded for that reason. Secondly, not all of the 835 claimants who received £5,000 or more were of working age (i.e. between 16 and 64 years). Thirty-two were either infants or school children below 16 years of age and 30 were too old for inclusion. These 62 cases were also excluded. Thirdly, not all

Figure 1: The motor claimant sample

860 files referred for analysis

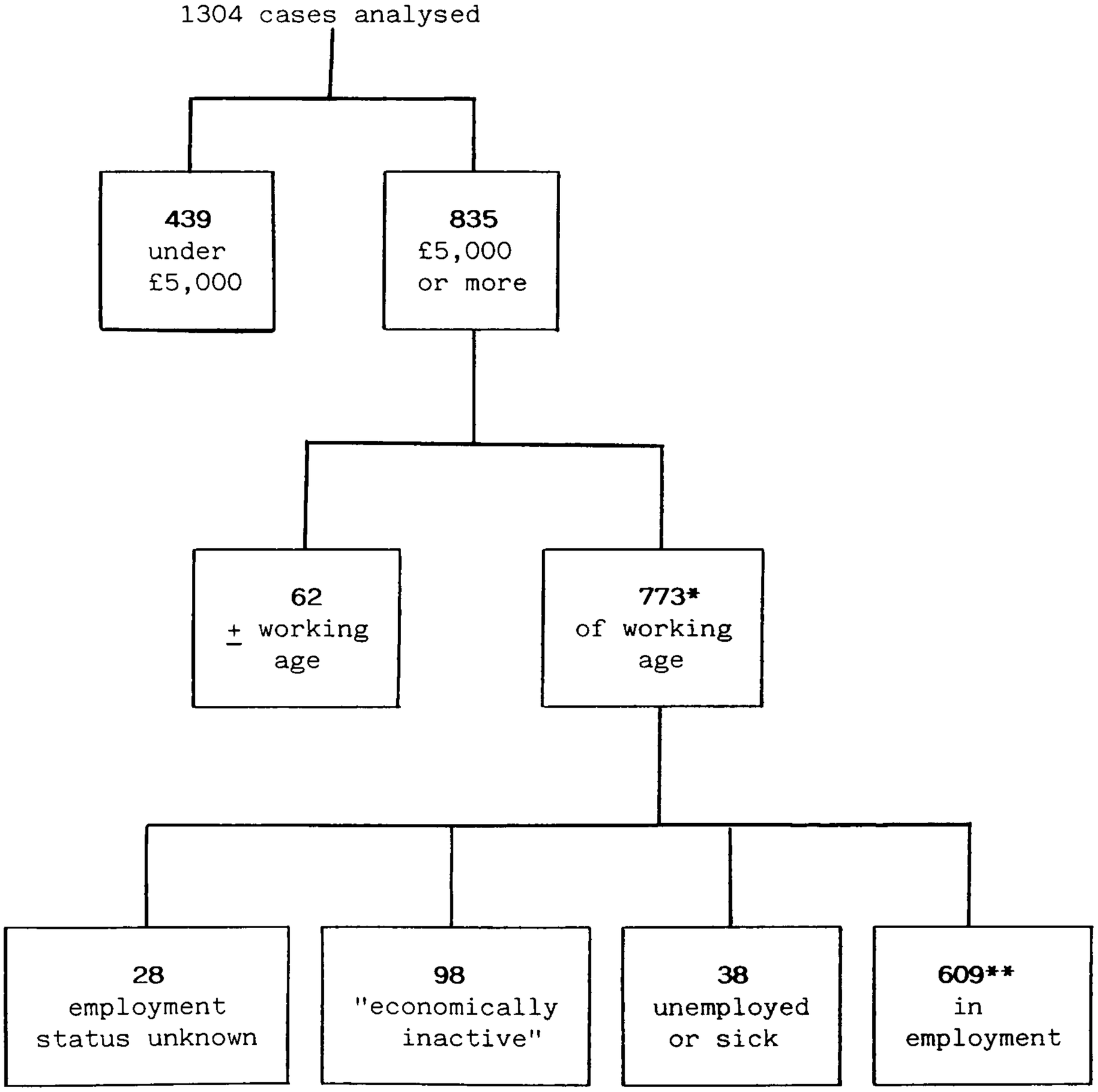
43 files excluded from analysis

817 files (accidents) analysed

1329 claimants in the files analysed

25 cases excluded

1304 cases analysed



* Sampling frame for other investigations

** Sample compared with EL claimants

of the remaining 773 cases were in employment at the time they were injured. Only 609 cases fulfilled this requirement. Others, which were also excluded from further consideration, included two who were off work temporarily through ill health; 36 who were unemployed; 98 claimants who were not "wage earners" (housewives, students, retired persons under 65 years of age and the young chronic sick) and 28 cases in which information about employment status was missing. The comparative analysis to be reported later, therefore, is based on 209 EL claimants and the 609 motor claimants who received damages of £5,000 or more, who were of working age when injured and who were in employment at that time(3).

In this case also, it was not possible to ascertain directly how representative these motor claimants were of all motor claimants whose claims had been settled for similar amounts by other insurance companies. Nevertheless, informal discussion with personnel from other companies suggested that the cases reviewed were similar to those handled by other insurers.

As was the case for EL claimants, third party motor claims for personal injury that were settled for £5,000 or more in 1982-83 comprised around one in 20 of all motor claims, although the average settlement within this upper bracket was higher than that paid out to EL claimants. Total damages paid to the 835 motor claimants whose claims were settled for £5,000 or more amounted to £14,565,644, with total costs(exclusive of any payments for damage to vehicles or property) amounting to £16,192,838. Individual settlements, exclusive of other costs, ranged from £5,000 to £305,000, with a mean of £17,443 and a median of £10,000.

Research methods and procedures

Because it was proposed to base the research on documentary sources rather than other methods of data collection, selection of variables was constrained to some extent by the nature of the information to be found in personal injury claims files. For this reason, an early interest in psychological reactions to injury or impairment was abandoned because existing procedures do not consider this aspect systematically, and this is reflected by incomplete information in personal injury claims files. Nevertheless, preliminary scrutiny of such files did suggest that there are many other variables on which more complete information is available routinely, and that a review concentrating on such variables certainly would be worthwhile.

It was also decided that, as this exercise would be the first of its kind, it would be worthwhile to collect data on some other variables which, while known to be reported incompletely, were nonetheless potentially relevant influences on claimants' recovery and return to work, in order simply to record the relative frequency with which they received attention. The amount of missing data on particular variables could be a revealing "unobtrusive measure"(4) of the extent to which, in its everyday operation, the medicolegal system values and/or makes use of different types of information or sources of expertise.

The other main principle guiding preparation of the data collection schedules was a desire to operationalise variables in a way that would permit claimants to be compared with other known populations. This was achieved by making use, as far as possible, of existing procedures

for classifying accidents, diseases, impairments, disabilities and handicaps and for assessing severity of injury.

The research instruments used are reproduced in Appendices 2A and 2B. Inspection of these schedules will disclose some similarities and some differences between them. Differences reflect claimants' involvement in different types of accident, with much more detailed information collected on road traffic accident victims. They also reflect a decision, based on experience gained in conducting the review of EL claimants' files and evidence that motor claimants experience multiple injuries more frequently, to re-cast the method of recording information about impairments, disabilities and handicaps for the later review of motor claims files. The more heterogeneous nature of the motor claimant population - with, for example, only a proportion in the labour market - also made it necessary to modify the coding frames for information about employment status, return to work and other possible outcomes.

These research instruments were developed in consultation with the insurance company and incorporate some changes that were made to earlier drafts following piloting of the EL claims version in late 1982 and of the motor claims version in mid 1984. In their final form, with one exception (time in pre-claim job), they are designed to capture raw data - for example, age at time of accident is recorded in years rather than in predetermined age bands. For most variables, the coding frame is provided on the schedules. Exceptions occur where use was made of the following standardised assessments and classifications:-

* Occupation and Social Class were operationalised with reference to the OPCS ("Registrar General's") Classification of Occupations(5).

* Employment sector was operationalised at the request of the collaborating insurance company with reference to its own in-house system of classification.

* Type of accident (EL cases only) and Nature of injury/impairment were operationalised with reference to the Health and Safety Executive's(6) official classifications of accidents and types of injury.

* Type of consultant was operationalised with reference to the system of classification used in Department of Health and Social Security reports on medical manpower(7).

* Location of injury/impairment was coded in accordance with the International Statistical Classification of Diseases, 1975 Revision(8).

* Severity of injury was operationalised with reference to the Abbreviated Injury Scale(9).

* Impairment, Disability and Handicap, Severity of Residual Disability and Prognosis were all coded in accordance with the International Classification of Impairments, Disabilities, and Handicaps(10), with Severity of Residual Disability using the ICIDH Severity Scale and Prognosis using the ICIDH Outlook Scale.

The data collection schedule for the review of EL claims files was developed and piloted on a series of 23 files supplied for this purpose between July 1982 and January 1983. Data collection was undertaken from May to November 1983, with analysis of results and a research report(11) completed by May 1984. Results were presented at a meeting of the Society for Research in Rehabilitation in Oxford in July 1984. They were later published in the Post Magazine and Insurance Monitor in August 1985(12) and in the International Journal of Rehabilitation Research in late 1986(13).

The data collection schedule for the review of motor claims files was developed and piloted between June and September 1984 on a series of 16 third party motor claims files containing data on 27 claimants, also supplied for this purpose. Data collection took 18 months to complete, from October 1984 to March 1986, with analysis of results and preparation of reports, including this thesis, taking a further year to complete. An interim report, prepared when approximately two thirds of the data had been collected, was presented at the Second European Conference on Research in Rehabilitation in Dusseldorf in November, 1985. That paper(14) will be included in the Proceedings of that meeting, to be published in 1987 as a Supplement to the International Journal of Rehabilitation Research. Results from the review of motor claims and the comparison between motor and EL claimants, though, are reported fully for the first time in Chapter Five of this thesis.

RETURN TO WORK OF PERSONAL INJURY CLAIMANTS

Aims

The earlier review of literature, while not directly applicable to

personal injury claimants, drew attention to several variables which might be associated with, or which might predict, their return to work. At the very least, that review suggested a number of hypotheses that would merit testing in relation to personal injury claimants. The reviews of EL and motor claims files, in conjunction with detailed content analysis of medical reports on claimants (described in detail in the next section of this Chapter), revealed that claims files did not contain sufficiently detailed information to test all hypotheses of this kind. Coverage of psychological and social variables, in particular, was neither uniform nor systematic. As a result, these variables could not be considered further in the present context. However, it was found that most files contained sufficient information to test hypotheses concerning the association between return to work by settlement and the following independent variables:- age; sex; occupational skill level; type of claim; number of significant injuries; severity of main injury; number of operative procedures; length of medical treatment; whether or not the claimant had sustained a head injury; whether or not the claimant had sustained a spinal injury; whether or not psychological problems were reported; time between accident and settlement; time off work between accident and settlement; value of settlement; and labour market conditions in the claimant's home locality.

Statistical analysis was conducted at two levels. The first, univariate level of analysis used Chi square statistics to test, for each variable, the null hypothesis that there is no difference between claimants who were in employment at settlement and those who were not in employment. Univariate analysis, however, cannot take into consideration any intercorrelation between these possible predictors

of outcome. This can only be accomplished with the aid of more powerful, multivariate methods, normally using stepwise procedures to select those members of a given family of variables which predict best a specified outcome. In such procedures selection of variables is based on their discriminative power as single variables, taking into account at each stage of analysis any interaction with other variables. In this case, given that data from the claims files was in both discrete and continuous forms, the method selected on the advice of the University Medical Statistics Unit to test a composite null hypothesis of no difference between claimants who were in employment at settlement and those who were not was stepwise logistic regression analysis(15).

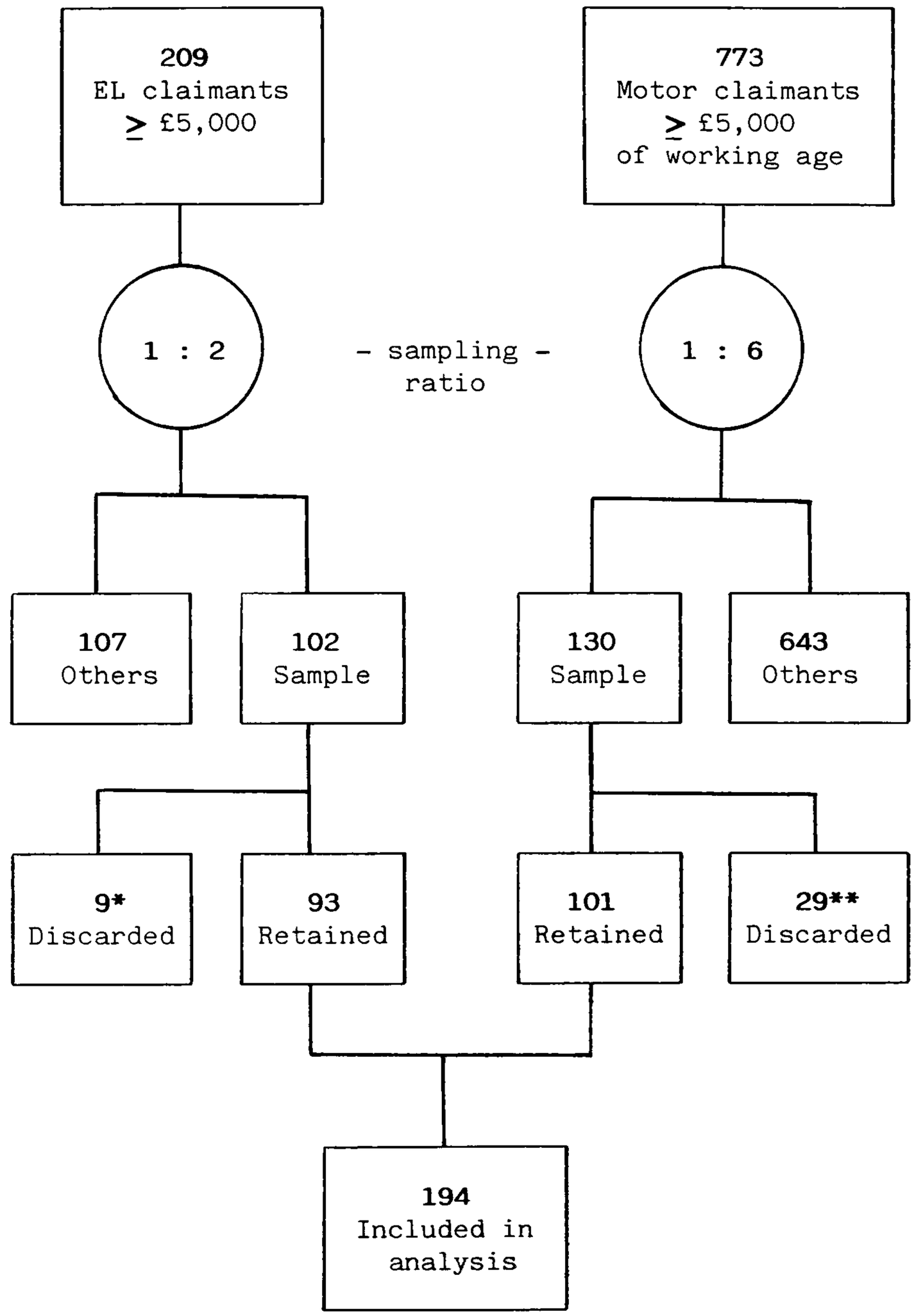
On completion of the return to work analysis, it became apparent that some of the variables might be used for another purpose - to help identify claimants whose return to work could be assisted by referral to appropriate vocational rehabilitation services. The former analysis indicated that the majority of claimants who had returned to work by the time at which their claims were settled had done so within a year of their accident, regardless of the severity of their injuries or the actual length of time between accident and settlement. Further analysis therefore was undertaken to determine which if any of the variables included in the return to work analysis differentiated between, on one hand, claimants who returned to work within a year of being injured and, on the other, those who returned later or who did not return at all. In this instance also, Chi square statistics were used to test, for each variable, a null hypothesis of no difference between the two groups.

The latter analysis suggested that it might be possible to create an index based on information that either was available to insurers, or which could be obtained by them, 12 months after a claimant had been injured. When applied to cases who had not returned to work within 12 months, the index could aid the identification of those claimants who might be assisted to do so if they were referred to appropriate sources of help and advice. To explore this possibility further, a simple index was constructed using ordinal scaling procedures for seven variables. All cases included in the return to work analysis were then re-examined and an index score computed for each case. The discriminatory power of the index was assessed using two-tailed t tests to test the null hypothesis of no difference in index scores assigned to (a) those who returned to work within 12 months as compared with all other claimants and (b) those who returned to work by settlement as compared with those who did not.

Subjects

Figure 2 summarises the sampling procedures adopted for the return to work analysis and related investigations. Using sampling ratios of one in two for EL claimants and one in six for motor claimants, subjects were selected at random (using random number tables to identify case numbers for inclusion) from the two populations of claimants included in the preceding reviews of personal injury claims files. These procedures produced a sample of 102 EL claimants and a sample of 130 motor claimants. The representativeness of the two samples was assessed by comparing in each case those who were selected with others who were not selected on each of the variables listed in Table 1 (for EL claimants) and Table 2 (for motor claimants). Analysis, using Chi square statistics, produced no evidence of

Figure 2: Sampling for return to work analysis



* Three fatal injuries, 5 cases with insufficient information and 1 medical retiral

** Twenty fatal injuries, 1 other death (post-accident), 2 cases with insufficient information, 2 medical retirals, 3 housewives and 1 young chronic sick

Table 1: Representativeness of the EL claimant sample - summary*

Variable	Chi square	d.f.	p =	Statistical significance
Age	2.20	4	0.70	NS
Sex	1.03	1	0.31	NS
Occupation	0.81	3	0.85	NS
Number of injuries	0.22	3	0.97	NS
Severity of injury	2.06	3	0.56	NS
Return to work	0.13	1	0.72	NS
Time to settlement	1.51	2	0.47	NS
Amount of damages	5.53	3	0.14	NS

NS = not significant

*** The tables on which this summary is based are located in Appendix 3A**

Table 2: Representativeness of the motor claimant sample - summary*

Variable	Chi square	d.f.	p =	Statistical significance
Age	6.77	4	0.15	NS
Sex	2.27	1	0.13	NS
Occupation	0.96	4	0.92	NS
Number of injuries	3.49	3	0.32	NS
Severity of injury	1.66	4	0.80	NS
Return to work	0.14	1	0.79	NS
Time to settlement	2.17	2	0.34	NS
Amount of damages	3.28	3	0.35	NS

NS = not significant

*** The tables on which this summary is based are located in Appendix 3B**

statistically significant differences between sample members and other members in the populations of claimants from whom they were drawn as regards their age, sex, occupational skill level, number of injuries and severity of main injuries. Nor were there statistically significant differences between samples and others as regards the proportions who did or did not return to work before by settlement, time between accident and settlement and the amount of damages received. Both samples may therefore be regarded as representative of these wider populations in respect of the eight variables on which representativeness was assessed.

For various reasons, it was not possible to include all sample members in the return to work analysis. The EL sample was reduced by nine cases, including three subjects who received fatal injuries, one subject who took early retirement on medical grounds and five subjects in whose cases there was insufficient information. The motor sample was reduced by 29 cases, including 20 subjects whose injuries were fatal, one subject who died shortly after injury, two subjects on whom there was insufficient information, two subjects who took early retirement on medical grounds, three housewives and one young chronic sick person who had been out of the labour market for seven years before being injured. After removal of these mainly fatal and "economically inactive" cases, 194 subjects were left in the analysis.

Research methods and procedures

The research instrument used to collect data for the return to work analysis is reproduced in Appendix 2C. It differs from the schedules used in the reviews of EL and motor claims files in one important respect, the use of banded coding frames. When conducting the earlier

reviews, it was found that, while there were many instances in which exact raw data was not available, and which therefore had to be coded as "missing", there was sufficient information available to justify a different response in a less specific coding frame. For example, while it may not have been possible to record exactly the number of months that medical treatment took to complete, there may have been enough information available in different documents on the file to conclude that such treatment had been completed within particular time limits, for instance, between one year and 18 months from the date of accident. The research instrument for the return to work analysis was designed to avoid this potential loss of information by employing banded coding frames to maximise data capture.

As with the data collection schedules used in the reviews of EL and motor claims files, the operationalisation of some variables is self-explanatory. Age, sex, type of claim, number of significant injuries, number of operative procedures, length of medical treatment, time off work, time from accident to settlement and value of settlement all belong to this category. Others, however, may require further explanation.

* Occupation (or, more accurately, occupational skill level) was operationalised with reference to the OPCS ("Registrar General's") Classification of Occupations(16).

* Severity of main injury was operationalised with reference to the Abbreviated Injury Scale(17).

* Head injury was recorded as present in cases in which there

was a diagnosis of skull fracture or closed head injury in which there was evidence of concussion or post-traumatic amnesia. Injuries to eyes and/or face and more superficial injuries were not coded as head injuries unless they were associated with other evidence of brain damage.

* Spinal injury was recorded as present in all cases in which there was a diagnosis of spinal cord injury, undisplaced vertebral fracture and cervical or lumbar dislocation, lesion or mechanical strain.

* Psychological problem was recorded in all cases in which medical or other professional reports indicated that injury may have produced specific cognitive deficits, post-traumatic neurosis/depression or personality change or made reference to functional overlay, malingering or poor motivation as regards rehabilitation.

* Regional labour market conditions were operationalised with reference to Department of Employment (DE) statistics as publicised monthly in the Employment Gazette. Examination of these statistics showed little or no variation in the relative unemployment rates reported for different regions over a period of several years during which claimants included in this analysis either returned to work or could have done so on completion of medical treatment. Using these regional statistics, a coding frame was constructed as follows:-

(a) DE regions with low average unemployment - Greater London, Thames Valley, East Anglia, South East and South of England;

(b) DE regions with medium average unemployment - South West, West Midlands, East Midlands and North East (Yorkshire and Humberside); and (c) DE regions with high average unemployment - Wales, North West, North, North East (Tyneside and Teeside) and Scotland.

* Outcome was the dependent variable in the return to work analysis. Subjects were coded as "in employment" if they had returned to work before settlement and remained at work subsequently. Subjects who returned to work and remained in employment for a period of at least a year before falling ill for reasons that were not associated with their accident or before being made redundant were also coded as "in employment". Those coded as "unemployed" included subjects who did not return to work between completion of medical treatment and settlement but who were available for employment during that period. Subjects who made one or more efforts to return to work, and who often succeeded in doing so for short periods, but who failed ultimately to maintain regular attendance, were also coded as "unemployed". The small number of cases who moved out of the labour market between accident and settlement were excluded from analysis.

The data collection schedule for the return to work analysis and related investigations was developed and piloted in October 1986. Data collection, based on re-examination of original files and documents, was undertaken in November and December 1986, with analysis of results completed in January 1987. The results of this work are reported in Chapter Six.

MEDICOLEGAL REPORTING ON PERSONAL INJURY CLAIMANTS

Aims

The reviews of claims files highlighted just how few personal injury claimants are referred to vocational rehabilitation services. Clearly, it is common practice for the doctors concerned to assume responsibility for all aspects of clinical case management up to the point at which their patients return to work. This approach, of course, is quite effective with the majority of patients whose injuries are mostly of a minor nature and of relatively short duration, but its relevance to other more severely injured patients might merit closer scrutiny. Despite many attempts to introduce appropriate teaching over the years, medical school curricula still pay little or no attention to assessment of fitness for work or other vocational aspects of rehabilitation. In similar fashion, it was noted in the previous Chapter that doctors generally receive no formal training for assessment and reporting for medicolegal purposes, as part of which task they are expected to comment on patients' work capacity and ability to resume their former occupations. Certainly, it appeared that no attempt has been made to evaluate this aspect of professional practice.

Study of claims files, however, indicated that medical reports are often the only source of information on a claimants' job, work history and any personal problems which may impede resettlement. It goes without saying that such reports contain the only authoritative commentary on a claimant's residual disabilities and potential employment handicap. Whatever is done to increase the referral of personal injury claimants to appropriate rehabilitation services, the

medical profession is bound to remain an important supplier of occupationally relevant information about personal injury claimants. There is therefore a strong case for an evaluation of how well doctors perform this important task, in order to identify what scope, if any, exists to enhance its performance. This was the third general aim of this study. It was approached in two stages.

The first stage comprised a quantitative assessment to record the frequency with which reporting by each doctor who supplied medical reports on representative samples of EL and motor claimants complied with previously published guidance which outlined 28 "essentials" of a medicolegal report(18). This analysis was also comparative. Statistical analysis, using t tests of proportions, tested, for each variable or "essential", a null hypothesis of no difference in the rates of compliance with published guidance in medicolegal reporting on EL claimants as compared with motor claimants.

In the second, qualitative stage of analysis the focus shifted from individual doctors to the information made available to recipients of medical reports from all doctors who reported on each claimant. Preliminary examination of medical reports on the files referred for piloting purposes suggested that, while they varied in size, format, number of points addressed and amount of detail reported, there were a number of broad themes which recurred in the majority of reports and which therefore provided a general framework within which to undertake a closer examination and evaluation of the contents of reporting on those themes. This task was also undertaken using the medical reports prepared on the same representative samples of EL and motor claimants, and had a similar comparative dimension.

Subjects

Subjects of the analysis of compliance with published guidance on medicolegal reporting were the 167 consultants and four general practitioners who supplied medicolegal reports on 94 EL claimants and the 221 consultants and eight general practitioners who supplied medicolegal reports on 109 motor claimants. Table 3 reports the

Table 3: Specialties requested to supply medicolegal reports

	Subjects of reports		
Specialty*	EL claimants	Motor claimants	All claimants
Orthopaedic Surgery	108	147	225
Neurology/Neurosurgery	14	28	42
Ophthalmology/Ophthalmics	11	14	25
General Surgery	13	4	17
Plastic Surgery	5	9	14
General Practice	4	8	12
General Physician	2	3	5
Psychiatry	4	1	5
Ear, Nose and Throat Surgery	1	4	5
Dermatology	4	0	4
Urology	2	2	4
Oral/Maxillo-facial Surgery	0	3	3
Thoracic Surgery	0	2	2
Rehabilitation Medicine	1	1	2
Audiology	1	0	1
Gynaecology	0	1	1
No information	1	2	3
Totals(consultants/GPs)	171	229	400

* Radiologists' reports were not treated separately in this analysis. Although such reports were sometimes appended to those submitted by other consultants, the usual practice was to incorporate or summarise radiological findings and opinions in the latter reports. Where radiologists' reports were provided on the cases reviewed here, and where they were not already incorporated or summarised in another report, they were treated as comprising part of the report to which they were appended.

specialties of the doctors concerned, and underlines the extent to which orthopaedic surgeons are called upon to provide such reports as

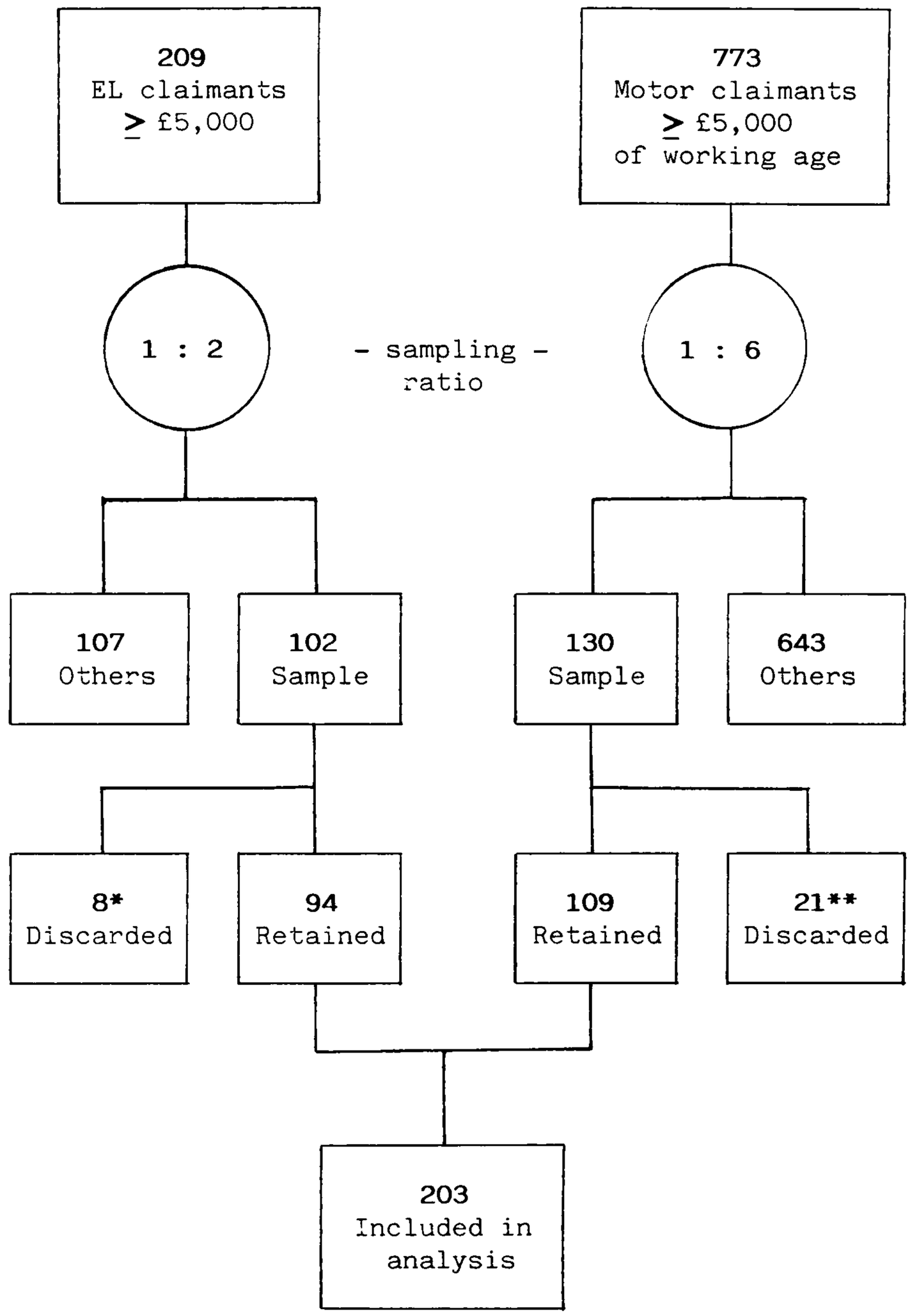
compared with representatives of all other specialties. No less than 63 per cent of the consultants reporting on EL claimants and 64 per cent of those reporting on motor claimants were orthopaedic surgeons, with all other specialties represented much less frequently.

It was not possible to check directly the representativeness of this sample of authors of medicolegal reports. All that can be claimed is that the claimants on whom they prepared reports were representative of the larger populations of EL and motor claimants from which they were drawn. As Figure 3 confirms, these samples were the same ones on which the preceding return to work analysis was based, and whose representativeness was reported earlier in Tables 1 and 2. In this instance, however, the two samples are slightly larger, excluding only those cases in which fatal injuries were received and those sample members whose files contained no medical reports.

Materials, research methods and procedures

The 203 claims files on which this analysis was based contained 602 separate medicolegal reports, of which 244 had been prepared on EL claimants and 358 on motor claimants. This represented a mean of 2.6 reports on each EL claimant and a mean of 3.3 reports on each motor claimant. However, Tables 4 and 5 show that there was more variation between cases than these figures suggest. The number of medicolegal reports on each claimant varied from 35 cases in which only one report was supplied to one in which as many as 11 reports had been requested. The number of consultants reporting on an individual case also varied from 79 cases in which only one consultant was involved to three cases in which reports were received from no fewer than six different consultants. Table 6 reveals that there was also some variation in

Figure 3: Sampling for medicolegal reporting analysis



* Three fatal injuries, 5 cases with no medicolegal reports

** Twenty fatal injuries, 1 other death (post-accident)

Table 4: Number of medicolegal reports per case

Number of reports	On EL claimants	On Motor claimants	All claimants	All reports
One	21	14	35	35
Two	34	27	61	122
Three	17	37	54	162
Four	15	7	22	88
Five	2	12	14	70
Six	2	3	5	30
Seven	2	4	6	42
Eight	1	2	3	24
Nine	0	2	2	18
Eleven	0	1	1	11
Totals	94	109	203	602

Table 5: Number of consultants reporting on each case

Number of consultants	On EL claimants	On Motor claimants	All claimants	All consultants
One	38	41	79	79
Two	41	38	79	158
Three	11	17	28	84
Four	3	6	9	36
Five	0	5	5	25
Six	1	2	3	18
Totals	94	109	203	400

Table 6: Number of reports per case by each consultant

Number of reports	On EL claimants	On Motor claimants	All consultants	All reports
One	117	136	253	253
Two	38	63	101	202
Three	13	24	37	111
Four	3	6	9	36
Totals	171	229	400	602

the number of reports which consultants prepared on individual claimants. Whereas, at one end of the scale, 253 consultants had prepared a single medical report on a particular claimant, at the other there were 37 examples in which three reports had been prepared on the same claimant, and a further nine cases in which a consultant had submitted as many as four separate reports on one claimant.

The data collection schedule used in the analysis of consultants' compliance with published guidance on medicolegal reporting is reproduced in Appendix 2D. Apart from four items to identify the claimant, the consultant, number of reports and specialty, this research instrument incorporates the 28 topics which Paul, in a British Medical Journal article, published in 1981, identified as essential for inclusion in such reports. In his view, no medicolegal report, regardless of the reason why it was requested, would fulfil its principle objective of providing "... a full and detailed account of all medical problems so that the recipient can form a well-informed and balanced view and can decide on future action"(19) - unless each of these "essentials" received attention.

For the purpose of this study, compliance with this guidance was assessed by counting the frequency with which reporting on each claimant made reference to each of Paul's 28 "essentials". As already noted (Table 6), there were several cases in which the same consultant had prepared more than one report on a claimant. In these cases, there were two reasons for making the complete set of reports the unit of analysis rather than treating each report separately. Firstly, where more than one report had been written, it was frequently assumed that recipients of later reports would be familiar with the contents

of earlier ones. Secondly, cases in which as many as three or four reports were obtained from one doctor were those in which recovery took a long time because of the serious nature of the injuries; because complications arose during treatment or because new operative procedures were needed. In such circumstances, quite understandably, doctors were unwilling to give more than a guarded prognosis in early reports, usually recommending re-examination after a suitable interval had elapsed. Consequently, whereas early reports paid more attention to incidents and their immediate effects, assessments of residual disability and prognosis were presented more fully in later ones.

Procedures followed in the content analysis of medicolegal reports can be explained with reference to the illustrative medicolegal report shown in Figure 4. Perusal of this fictitious example will reveal that, like most reports of this kind, it is loosely structured around a dozen or so main themes. The opening paragraphs briefly present the claimant's name, address, age, marital status and occupation, before describing the incident in which he was injured and his condition as found on examination after arrival in hospital. Later paragraphs are devoted to the treatment he received and his response to treatment, his complaints when seen for the medical examination on which the report is based and the consultant's findings from that examination. The report concludes with the consultant's opinion regarding the claimant's residual disability and the problems he is likely to encounter on return to work, his potential employment handicap. Preliminary examination of medical reports found that, in addition to these eight themes, which are covered to a greater or lesser extent in most medical reports on personal injury claimants, there were four other general themes which received attention in some reports but not

Figure 4: An illustrative medicolegal report

From: Mr. N.H.S. Cutts F.R.C.S.

Accident and Orthopaedic Department
The General Hospital
Middletown

The Claims Department
Providential Insurance plc

1 April 1983

Your ref: EL 54321/82

Medical Report on Mr Victor Timm (DOB 29/2/1949),

217 Corporation Row, Middletown

At your request, this patient was seen and examined by me today for the purpose of this report. Mr Timm is a 34 year old machine operator and is normally right-handed. He is married with three children.

History

Mr Timm states that on 30 October, 1982 at about 11am he was feeding sheet metal into a press when his foot slipped in a patch of oil which had leaked from the machine onto the surrounding floor. Instinctively, he put out his left hand to prevent a fall. The left hand entered the machine as it came down to bend the metal and momentarily became trapped. The fingers were crushed and severely injured. At the same time, his right hand slipped on the metal sheet producing a deep laceration across the palm and index finger. First aid was administered at the works surgery before the patient was brought to the Accident and Orthopaedic Department of this hospital.

On examination shortly after admission, it was apparent that the index and middle fingers of the left hand were severely injured. The ring and little fingers were bruised and swollen but had otherwise escaped serious injury. The laceration of the right hand, though deep, was fortunately not so serious, with no vascular, neurological or tendon damage. The only practicable course for the left hand was formal amputation of the index and middle fingers. This operation was carried out under the appropriate local anaesthetic. At the same time, the wound to the right hand was cleaned and sutured. Mr Timm remained in hospital for four days before being discharged home, and his progress was reviewed at the Out-patient Clinic on 22 November, 21 December and 27 February. The left hand healed quickly without complication, and the patient attended physiotherapy and occupational therapy to help him to regain movement in his hand.

When seen for this report he had been back at work for two weeks after an absence of nearly five months. However, he is not yet able to resume his old job and has been assigned to lighter duties.

Previous Medical History

No previous illnesses or accidents.

Complaints

Mr Timm tells me that he experiences an aching pain in the left hand in cold weather. He also finds that the amputation stumps of the index and middle fingers are still quite tender. The loss of these fingers had reduced left hand grip. This has not only reduced his capacity to perform his work as a machine operator but has also prevented him from engaging in the heavier aspects of gardening. Before the accident he was a keen gardener. Mr Timm feels confident that he will eventually be able to resume his work as a machine operator, although he anticipates that he will be clumsier and that he may not regain his former work speed. The lighter duties to which he is presently assigned do not yield opportunities for overtime. His injury has therefore resulted in a reduction in income. He is embarrassed by the appearance of this left hand, especially when out socially, and has taken to keeping it in his pocket or otherwise out of sight.

Examination

Mr Timm appeared to be in good general health. The right hand has healed completely, without any residual loss of sensation, dexterity or gripping power. Examination of the left hand shows that the wrist, palm of the hand, ring and little fingers are normal. The index and middle fingers have been amputated at the level of the metacarpo-phalangeal joints. The resulting amputation stumps are of good quality. Although there is still some tenderness, there is no evidence of a neuroma formation or significant damage or abnormality of the remaining structures at the base of the fingers. Power grip is much reduced as compared with the right hand and, although Mr Timm is able to bring the thumb in opposition to the ring and little fingertips and thus to make a pinch grip, manual dexterity is also impaired.

Summary and Opinion

As a result of his accident at work, Mr Timm has suffered mutilation and considerable functional loss in his non-dominant left hand. However, while some tenderness remains, the amputation stumps have healed well and he has been able to return to work, although he has so far been employed on lighter duties.

I credit his complaints. The tenderness should improve in time, but impairment of power and pinch grip should be considered permanent. While there is little likelihood of any deterioration or osteoarthritic change in the future, there is equally no likelihood of any significant improvement. While he is keen to resume his job as a machine operator he is bound to have some difficulty in managing such work and much will depend on his drive and determination to overcome his disabilities. He will, however, always have some difficulty in gripping objects and in managing the heavier aspects of his gardening. His embarrassment about the appearance of the hand should lessen in time.

NHS Cutts FRCS
Consultant Orthopaedic Surgeon

others. These were references to the claimant's medical history (if only briefly as in the fictitious example); psychological reaction to the accident; personal circumstances; and need for referral to specialised rehabilitation or medical treatment services. All of these themes therefore were incorporated in the data collection form for the content analysis, together with two additional items to record other miscellaneous information and the amount of reporting on each case. The data collection schedule for this exercise is reproduced in Appendix 2E.

In order to complete this schedule, several preliminary procedures were necessary. The first step, using colour coding to identify individual themes, involved working through all reports on each sample member marking all passages dealing with each main theme. For example, in the illustration, the second paragraph describes the incident in which the claimant was injured. All passages dealing with this theme in the reporting on sample members were marked with the same colour coding. The second step involved counting all the words devoted to information concerning each main theme in the report or set of reports on each sample member and expressing that number as a percentage of the total number of words used. This procedure was followed for both samples, providing systematic assessments of the proportionate coverage of each main theme both for individuals and for the sample as a whole. It also provided a common, quantitative framework for subsequent qualitative analysis of the contents of reports.

For a more qualitative assessment, all observations on selected themes, including occupational information, residual disability,

psychological problems and employment handicap, in the report or set of reports on each claimant were tape recorded. They were then transcribed in such a way as to identify the sex, age and main injury of each claimant but without disclosing in transcription the identities of consultants, claimants or the hospital where they received treatment. Once this was done, observations comprising each broad theme were subjected to more detailed scrutiny, using a scissors and paste technique, in which they were further subdivided into any constituent subgroupings or clusters(20). For example, using this approach, it was found that occupational information other than references to job title or occupational handicap comprised four main clusters. They were:- the nature of the claimant's job and working conditions; the claimant's work record; time off work following injury or impairment and return to work. Using this information, it was possible to construct a picture, for the sample as a whole, of the proportion of cases in which information at this level of detail is available to insurers as well as the proportion of cases in which no such information is provided. By referring to the observations comprising each cluster, it is also possible to assess their relevance to claims decision making and, where necessary, to recommend how reporting on these aspects might be improved.

The data collection schedules and procedures for both aspects of the analysis of medicolegal reporting on personal injury claimants were developed and piloted during June and July 1983 on a series of 23 files supplied for this purpose. Data collection from medicolegal reports on EL claimants was completed between July and October 1983 with analysis of results and preparation of a report(21) taking a further six months. Along with other data from the review of EL

claims files, results were presented at a meeting of the Society for Research in Rehabilitation in Oxford in July 1984, and were later published in the Post Magazine and Insurance Monitor in August 1985(22) and in the International Journal of Rehabilitation Research in 1986(23). Data collection from medicolegal reports on motor claimants was completed in stages between July and October 1985 and January and October 1986. The analysis of consultants' compliance with published guidance was completed by April 1986. Other aspects of content analysis took a further year to complete. Some preliminary results were presented at a World Health Organization meeting on Care of the Disabled in the Community held in Edinburgh in June 1986(24). Otherwise, results from the motor claims sample and comparisons between reporting on motor and EL claimants are reported fully for the first time in Chapter Seven of this thesis.

VERIFICATION AND CONSISTENCY OF DATA COLLECTION PROCEDURES

Before presenting results, it is necessary briefly to acknowledge the main limitations of a retrospective analysis of documentary material. The most important of these concern the validity and completeness of information extracted from the personal injury claims files. Ideally, claimants should have been traced for interview and independent assessment in order to validate data recorded from their files, to correct any errors and to fill in any gaps. However, for various reasons, this was not possible. In the first place, it was not practicable to pursue this objective with a large, country-wide population of closed cases. In the second place, at the outset of the study, insurers were still hesitant about research and were unwilling to approve more direct involvement with a smaller sample of current cases to be followed up prospectively. They were concerned that

claimants' solicitors might not co-operate by approving their clients' participation. They were also concerned that claimants' involvement in research might disrupt or otherwise interfere with negotiation of their claims. While insurers' growing appreciation of research and increased confidence in research workers has since persuaded them to adopt a different attitude toward more recent studies, their change of mind came too late to be of benefit to this study. Consequently, other ways of checking the data and data collection procedures needed to be found.

Further consequences of having no direct contact with claimants were that selection of variables for the more detailed analysis of return to work was limited to those on which the files contained appropriate information, and that descriptive material was similarly limited to those variables on which there was either complete or reasonably complete information. Incomplete or missing data may indicate indirectly its perceived value to the medicolegal system, but it is not helpful for other purposes. Accordingly, some items with an unacceptably high level of missing data were excluded from further consideration.

A study based only on documentary sources like personal injury claims files, which may not contain complete information on each variable of potential interest, therefore poses slightly different problems regarding the validity and reliability of research instruments to those found in other types of investigation where data collection is prospective and involves the use of standardised scales and other similar measures or methods of assessment. In this context, validation is probably construed more accurately as a problem of

verification of the factual information extracted from documentary sources, and reliability needs to be defined in terms of the consistency of data collection from the same sources either by the same person at different times (the equivalent of test-retest reliability) or by different persons (the equivalent of inter-rater reliability). Where collection of factual information is concerned, however, it might be agreed that the aim should be to achieve very high levels of accuracy and hence consistency.

Verification of factual information collected in the course of this study took several different forms. The most important was the process of cross-verification. Because the claims files contained information about claimants that had been supplied by several different and independent sources, a discrepancy over, for example, a claimant's age or occupation came to light when different source materials were compared, although very few discrepancies of this nature were found. Insurance company claims personnel were shown to be very assiduous readers of the information they received. Normally, they had pursued and clarified any such discrepancies long before the files were handed over for this study.

Use of standard classifications of disease, impairments, disabilities and handicaps, presented another problem. In this case, researchers' accuracy in interpreting and coding clinical data contained in the first 50 cases included in the EL sample was checked by re-examining the files under the guidance of a medical colleague.

A third verification procedure, undertaken in the early stages of research as part of an attempt to maximise the capture of information,

involved examining all files on EL claimants for a second time. This procedure could also be regarded as an informal evaluation of the consistency of data collection procedures. While no more work was carried out in relation to the review of EL claims files, the assessment of the other research instruments described in this Chapter was of a more formal and systematic nature.

Data collection for the review of motor claims files involved two persons. It was essential therefore to assess both "test-retest" and "inter-rater" consistency. Given that data collection from a single file often involved at least an hour or two of reading, it was not feasible to undertake such assessments on a large sample. Nevertheless, using two samples of ten cases each, it was possible to compute "test-retest" (over two to three months) and "inter-rater" agreement or consistency, as reported in Table 7.

Table 7: Motor claims files - "test-retest" and" "inter-rater" consistency (percentage agreement)

Variables	"test-retest" consistency	"inter-rater" consistency	Total possible agreements
Personal data	96 per cent	97 per cent	90
Accident data	98	97	180
Medical treatment data	93	93	70
Injury/impairment	98	98	160
Disability	98	93	60
Handicap	96	96	80
Rehabilitation services	100	100	40
Return to work	96	94	80
Procedural data	100	95	60
Financial data	98	96	80
All data	97	96	900

These assessments of consistency exclude four variables on which the accuracy of coding was quite poor. They would therefore have been lower if such items had not been excluded from further consideration.

The excluded items were employment sector (variable 11), ownership of vehicle (variable 21), reference to "no handicap" (variable 62) and reference to psychological problems (variable 75). Some inconsistency was also noted in relation to the ICIDH Outlook Scale (variable 55). In this case, there was some confusion in the coding of information about whether a claimant was expected to make a full recovery or simply to improve, possibly not to the extent of full recovery. Rather than discard this scale completely, it was decided to combine these two categories into a more inclusive, single "improvement expected" category. Results in Chapter Five are reported in this amended form. There was some slight variation in the consistency coefficients for the remaining groups of variables, most notably between those concerning disability, where allowance had not been made, in cases of multiple injuries of equal severity, for the possibility that they would be recorded in a different order by different coders. It was concluded, however, that such differences were not sufficient to warrant the exclusion of data on any other variables (apart from those for which there was a substantial amount of missing data).

The two attempts to code variables relating to handicap both met with difficulty. In the case of the coding frame for EL claimants, use of a single column meant that multiple handicap could not be recorded. Moreover, the variable addressed to occupational handicap specifically was interpretive, based on the coder's judgement rather than referring to comments made in medical reports, even though the latter were taken into consideration. On completion of the review of EL claims files, it was decided that this approach may not have been reliable and that alternatives were needed for the review of motor claims files.

The latter exercise, where more multiple disability and possibly more multiple handicap was anticipated, therefore attempted to collect data under each of the seven general ICIDH Handicap category headings. However, this approach also demonstrated just how difficult it can be to achieve an effective operationalisation of the concept of handicap. As previously mentioned, some inconsistency was found in relation to recording information in cases in which no handicap was expected. Also, it was concluded from an examination of raw data that the number of times "no handicap" was mentioned bore no relationship to the number of cases in which this outcome might have been expected. It was possible to count the number of references to different kinds of anticipated handicap. However, in view of the comparatively high incidence of cases in which some handicap might have been anticipated but was not mentioned, and also the generally poorer standards of medical reporting on this subject as compared, say, with residual disability, it was concluded that the information available did not offer a satisfactory basis for describing handicap in this particular context.

For these reasons, no reference to handicap will be made in the descriptive comparison of EL and motor claimants. However, coverage of the concept of handicap in medical reports is singled out for more detailed attention in the later analysis of medicolegal reporting on personal injury claimants.

"Test-retest" consistency assessments, also based on ten cases which were recoded after an interval of one month, were also computed for the research instruments used in the return to work analysis and the

analysis of consultants' compliance with guidance on medicolegal reporting. Out of a 160 possible points of comparison in the assessment of the return to work data collection schedule (i.e. 16 variables x ten subjects), there were eight discrepancies, but only one of them was really marked. In this particular case, length of medical treatment was recorded once as between six and 12 months and once as lasting more than 24 months. The reason for this was that the latter coding took into consideration a late operation to remove a plate used to secure a lower limb fracture, whereas that operative procedure was overlooked in the former coding. With the same coding awarded in 152 points of comparison, and with all but one of the eight discrepancies found being of the relatively minor nature, "test-retest" consistency for this research instrument was 95 per cent.

The schedule for consultants' compliance with guidance on medicolegal reporting was used to collect data on 30 variables, giving 300 possible points of comparison when calculating "test-retest" consistency in ten cases. Analysis revealed nine discrepancies between the two data coding stages, three of which related to the variable specifying for whom medicolegal reports had been prepared. With the same coding awarded for 291 out of the 300 possible points of comparison, "test-retest" consistency for this research instrument was 97 per cent.

These assessments may not reflect exactly the procedures followed to establish the validity and reliability of other types of research instrument. Nevertheless, the various steps taken to verify information taken from personal injury claims files, to verify the use

of standard classifications and to assess the consistency of data collection procedures may indicate the confidence that might be placed in the research results to be reported in each of the next three Chapters.

CHAPTER FIVE

Comparison of Employers' Liability and Motor Claimants

INTRODUCTION

The objective of the reviews of employers' liability (EL) and motor claims files was to describe and compare the claimants involved from relevant personal, procedural, medical and occupational perspectives. This Chapter presents the results of this exercise for (a) 209 EL claimants, and (b) 609 third party motor claimants who were of working age when injured and who were in employment at that time. In both cases, claims were settled by one insurance company for £5,000 or more over a period of two years.

The opening sections of the Chapter describe claimants' personal characteristics (for example, age, sex and occupational skill level) and outline briefly the nature of their involvement in the medicolegal system. Later sections report the types of accident in which they were involved; the resultant injuries or impairments; medical treatment; residual disabilities; contact with rehabilitation and resettlement services and return to work. Apart from data on accidents which are unique to each type of claim, and a few other variables on which the data collected are not directly comparable, all comparisons are subjected to statistical analysis to test, for each variable, a null hypothesis of no difference between the two groups of claimants.

THE CLAIMANTS

Claimants' ages at time of injury are reported in Table 8. This shows that both EL and motor claimants were spread quite evenly across the different age bands, although there was a clear tendency for road traffic accident victims to cluster in younger age groups and for EL claimants to be represented more strongly in older age groups. This difference is statistically significant. The null hypothesis of no difference between the two groups of claimants therefore is rejected, in this case at the one per cent confidence level(1).

Table 8: Age of personal injury claimants

Age group	EL claimants	Motor claimants	All claimants
Up to 20 years	32	132	164
21 to 30 years	32	150	182
31 to 40 years	43	116	159
41 to 50 years	45	90	135
51 + years	48	111	159
	200	599	799
No information	9	10	19
Total	209	609	818

Chi square = 15.60, 4 d.f., $p < 0.01$

There is a more pronounced imbalance between the two sexes (Table 9). Although males outnumbered females in both groups, it is apparent that they were more likely to be victims of serious accidents at work, where they represented 93 per cent of all victims(2), than on the roads, where they comprised 74 per cent of all road traffic accident victims who pursued personal injury claims. This difference, which also is statistically significant, may be attributable to various factors, including, for example, different rates for males and females

of labour market participation, vehicle ownership or use, and exposure to road traffic hazards.

Table 9: Sex of personal injury claimants

Sex	EL claimants	Motor claimants	All claimants
Female	14	160	174
Male	195	449	644
Total	209	609	818

Chi square = 35.60, 1 d.f., $p < 0.0001$

Where EL claimants are concerned, the more marked difference between men and women may also reflect the type of work undertaken by them. Labour market statistics suggest that approximately 40 per cent of the national work force are female(3), a much higher proportion than the seven per cent reported here. It is possible therefore that women are employed in jobs which involve less risk of serious personal injury. It cannot be ruled out that a review of claims settled for lower amounts than those considered here would reveal a higher proportion of female claimants.

Table 10 records the occupational skill levels of the two groups classified in accordance with the OPCS ("Registrar General's") classification of occupations. This also reveals a marked, statistically significant difference between EL and motor claimants. Of those injured at work, 91 per cent were in manual occupations and nine per cent in non-manual work, including only one claimant who worked in a managerial (intermediate) capacity. In contrast, 32 per cent of all motor claimants were employed on non-manual work, inclusive of seven per cent who worked at professional or intermediate

levels, leaving 68 per cent who were employed in manual jobs of various kinds and varying levels of skill.

Table 10: Occupational skill level of personal injury claimants

Occupational skill level	EL claimants	Motor claimants	All claimants
Professional/ intermediate(I, II)	1	52	53
Other non-manual(IIIa)	17	176	193
Skilled manual(IIIb)	97	202	299
Semi-skilled manual(IV)	28	74	102
Unskilled manual(V)	66	64	130
	209	568	777
No information		41	41
Total	209	609	818

Chi square = 91.34, 4 d.f., p < 0.0001

Marital status was one of the variables on which information was not recorded systematically in personal injury claims files. There were 160 cases, predominantly males, in which such information was missing. The data on claimants' marital status presented in Table 11, therefore, may not be representative. Subject to this qualification,

Table 11: Marital status of personal injury claimants

Marital status	EL claimants		Motor claimants		All claimants	
Single	47		226		273	
Married	126		237		363	
Divorced, separated	1	) 4	9	) 18	10	) 22
Widow, widower	3		9		12	
	177		481		658	
Missing	32		128		160	
Total	209		609		818	

Chi square = 25.13, 2 d.f., p < 0.0001

it would seem that, whereas most EL claimants were married (71 per cent), with two per cent who were widowed, separated or divorced and a further 17 per cent unmarried, almost half (49 per cent) of the motor claimants were married, with four per cent who were widowed, separated or divorced, and 47 per cent who were unmarried. The latter finding may reflect the higher representation of younger people amongst victims of road traffic accidents. In this case also, the difference between EL and motor claimants is statistically significant.

Table 12 reports claimants' home localities. It confirms that subjects for this study were drawn from all regions of Great Britain. Conclusions to be drawn from these data, however, are limited because they reveal where claimants lived rather than where they were injured and because they reflect where the insurance company did most business rather than any other distribution of population between different

Table 12: Home locality of personal injury claimants

Home area	EL claimants	Motor claimants	All claimants
Scotland	41	46	87
North of England	13	9	22
North East	33	89	122
North West	20	67	87
East Midlands	7	30	37
West Midlands	21	33	54
Wales	11	36	47
South West	11	57	68
Thames Valley	6	42	48
East Anglia	7	34	41
Greater London	16	73	89
South of England	13	42	55
South East	10	39	49
	209	597	806
No information		12	12
Total	209	609	818

Chi square = 52.65, 12 d.f., p < 0.0001

regions. Nevertheless, there is still a statistically significant difference between the two claimant groups, with proportionately more EL claimants than motor claimants residing in regions where heavy industries once predominated and where the highest rates of unemployment tend to occur today.

CLAIMANTS' INVOLVEMENT IN THE MEDICOLEGAL SYSTEM

As noted in the earlier description of the operation of the medicolegal system, personal injury claims normally are initiated when the claimant, or his solicitor, contacts the policy holder and/or insurer to indicate that it is intended to proceed with a claim. In most cases, this is done within a week or so of the accident, by which time the policy holder will also have completed an accident report form and returned it to the insurer's local office. Local office staff then investigate the circumstances surrounding the claim; start to formulate their views on liabilty; and produce for their Head Office the first of a series of estimates of the likely cost of the claim, a process that is repeated at intervals throughout the active timespan of the claim, The next task in motor claims is to deal with any claims for damage to vehicles or third party property, for example boundary walls or street furniture such as road signs or lamp posts. It is also at this early stage that police reports or other technical assessments are obtained. Arrangements may also be made for policy holders to be legally represented at any court proceedings arising from the accident.

As far as the claimants themselves are concerned, though, especially where injuries have been severe and where medical treatment may take some time to complete, little further action is taken until a

first medical report is obtained, Such requests may be made by either the insurer or the claimant's solicitor. Table 13 shows that, for these claimants, first medical reports generally were available within a year of the accident, with longer periods

Table 13: Period from accident to first medical report

Months	EL claimants		Motor claimants		All claimants	
Up to 6 months	66		195		261	
7 to 12 months	58		212		270	
13 to 24 months	42		64		106	
25 to 36 months	12	) 19	16	) 23	28	) 42
37+ months	7		7		14	
	185		494		679	
No reports or No information	15		27		42	
Total	200		521		721*	

* Exclusive of 97 fatal injuries (9 EL and 85 motor)

Chi square = 20.08, 3 d.f., p < 0.001

applying in about a fifth of all claims files. There is, however, a statistically significant difference between the two groups, reflecting the fact that a higher proportion of EL claims (33 per cent), including a small number for industrial disease, took more than year before the first medical report was produced. Taking into account evidence to be presented later that EL claimants generally were not as severely injured as motor claimants, and the fact that in many cases their claims were handled by trades union legal departments or solicitors appointed by unions, this is the first of several pointers from this study that trades union involvement in a claim may prolong its negotiation.

If the claimant's condition has stabilised by the time the medical

report has been received, discussions about settlement can commence. If not, as happened in approximately two-thirds (69 per cent) of the EL cases and over four-fifths (84 per cent) of the motor cases included in this study, further medical reports can be requested by either side. The number of medical reports per case in the EL and motor claims files is reported in Table 14. This reveals that, whereas 61 per cent of EL claims were settled with the benefit of one or two medical reports, with the remainder needing three or more, a

Table 14: Number of medical reports

Number of reports	EL claimants	Motor claimants	All claimants
One	60	54	114
Two	58	143	201
Three	31	129	160
Four	23	65	88
Five or six	15	72	87
Seven or more	5	35	40
	192	498	690
No information	8	23	31
Total	200	521	721*

* Exclusive of 97 fatal injuries (9 EL and 88 motor)

Chi square = 50.38, 5 d.f., $p < 0.0001$

similar proportion (65 per cent) of motor claims required up to three medical reports, with other cases needing four or more. One EL claim required 10 medical reports, but the highest number of reports on an individual motor claimant was 28. These were prepared over a period of eight years following a sports car accident in which the claimant received severe head and facial injuries which necessitated considerable reconstructive plastic surgery. The difference between EL and motor claimants is statistically significant, with the higher number of reports required for motor claimants reflecting, at least in

part, both the greater severity of their injuries and the greater likelihood of multiple injury requiring attention from more than one medical specialty.

When claimants are considered to have reached a stage at which reasonably accurate judgements can be made about the stability of their condition and about future effects of their injuries, negotiations commence. It is usually at this stage that any differences of opinion between insurers and third party solicitors first become apparent. Such differences may arise over liability, especially the degree of any contributory negligence that may need to be taken into consideration. They may also arise because medical reports contain conflicting opinion on the causes or - more often - the consequences of injuries, or because the two sides reach different conclusions about the amount of damages payable in respect of loss of earnings, loss of future earnings or loss of standing in the labour market.

Some of these differences are readily resolved but others are not. In many cases, therefore, if they have not done so already, third party solicitors will issue a writ. If the two sides remain widely apart, solicitors may seek counsel's opinion and, if this is favourable, they may take further steps to secure a court hearing. Writs are issued for various reasons. For example, third party solicitors may wish to speed progress towards settlement by threatening additional costs of legal action for the insurance company. Alternatively, they may have every intention of taking the case to court for judgement, because they wish to test a point of law or because they consider there is little or no prospect of reconciling differences by other means.

Writs may also be issued for protective purposes - to preserve the statutory time limits on a claim or to establish the maximum entitlement to claim interest on any damages awarded. Legal actions taken on behalf of the EL and motor claimants involved in this study are summarised in Table 15. Comparison of the two groups' involvement in legal action did not indicate a statistically significant difference between them. In both groups, writs were issued on behalf of a little over 60 per cent of claimants. Of these, only two or three per cent were actually settled by a judge, with similarly small proportions settled at the door of the court. In both groups also, therefore, more than one third of claims were settled without resort to the issue of a writ.

Table 15: Legal action by third party

Action	EL claimants	Motor claimants	All claimants
None	72	206	278
Writ issued	104	359	463
Writ, settled before judgement	5	12	17
Writ, settled by judge	6	12	18
	187	589	776
No information	22	20	42
Total	209	609	818

Chi square = 2.27, 3 d.f., p = 0.52 (not significant)

Time from accident to settlement varied considerably within each claimant group but not between them. Time taken to settle EL claims ranged from seven to 89 months, with motor claims taking between six and 115 months, the last figure applying to the previously mentioned sports car accident. In both groups, approximately thirty per cent of all claims were settled within two years of the date of accident

(including the majority of fatal injury claims),and over sixty per cent were settled within three years (Table 16). Around 80 per cent

Table 16: Time from accident to settlement

Time	EL claimants	Motor claimants	All claimants
Up to 12 months	12	23	35
13 to 24 months	50	130	180
25 to 36 months	69	186	255
37 to 48 months	22	103	125
48 to 60 months	24	60	84
60+ months	19	54	73
	196	556	752
No information	13	53	66
Total	209	609	818

Chi square = 6.55, 5 d.f., p = 0.26 (not significant)

were settled within four years and 90 per cent within five years, leaving approximately 10 per cent which took more than five years to settle. The mean times from accident to settlement were 34.2 months for EL claimants and 35.7 months for motor claimants and the median times were 29 and 34 months, respectively. The difference between the two groups is not statistically significant.

The amount of damages received by individual claimants also varied greatly within each claimant group. Awards for EL claimants ranged from the £5,000 base to £60,000. For motor claims, the range was much wider, from £5,000 to £305,000. As might be expected from these figures, damages received by motor claimants (mean £17,443; median £10,000) generally were higher than these received by EL claimants (mean £12,926; median £8,000). This difference between the two groups of claimants is further illustrated by Table 17 which reports the

numbers who received different amounts of damages. Approximately one third of EL claims were concluded by damages of between £5,000 and

Table 17: Amount of damages paid to claimant

Damages	EL claimants	Motor claimants	All claimants
£ 5,000 to £ 6,000	64	131	195
£ 6,001 to £ 10,000	75	176	251
£10,001 to £ 25,000	43	196	239
£25,001 to £ 50,000	25	70	95
£50,001 to £100,000	2)	27)	29) 38
£100,001+	0)	9)	9)
Total	209	609	818

Chi square = 23.32, 4 d.f., p < 0.001

£6,000 and two thirds (67 per cent) were concluded for amounts of £10,000 or less. In comparison, only a fifth (22 per cent) of motor claimants received between £5,000 and £6,000, with one half (51 per cent) getting £10,000 or less. This statistically significant difference is also apparent at the upper end of the scale. In contrast with one per cent of EL claimants who were paid over £50,000, five per cent of motor claimants received this amount, including one per cent (of the total) who received in excess of £100,000.

ACCIDENTS

Accidents at work

The 209 EL claimants included eight whose claims were in respect of industrial disease rather than for personal injury. The remaining 201 cases were victims of a variety of quite different accidents. The range of accidents leading to claims of £5,000 or more is shown in Table 18, which is based on a Health and Safety Executive classification. This reveals that almost one half of these victims of

work place accidents were either struck by an object (24 per cent) or caught in an object, normally machinery (22 per cent), and that a

Table 18: Type of accident (EL claimants)

Type of accident	Number	Per cent
Fall, less than 6ft 6ins	15	8
Fall, more than 6ft 6ins	29	14
Fall, slip, trip - same level	12	6
Struck by object	50	24
Striking against object	7	3
Caught in object	47	22
Rubbed by object	1	<1
Over-exertion	21	10
Exposure to extreme conditions	9	4
Exposure to electric current	2	<1
Exposure to harmful substances	6	3
Powered vehicle accidents	9	4
Others	1	<1
Total	209	100

further quarter (28 per cent) were involved in falls. The next most frequent type of accident occurred as a result of over-exertion and usually resulted in strains, particularly of the lumbar spine. Other categories, accounting for smaller proportions of all EL claimants, included some in which exposure to extreme conditions or harmful substances resulted in industrial disease claims for dermatitis, noise-induced hearing loss and byssinosis. They also included smaller numbers of claimants who were exposed to electricity, who received burns or scalds, or who were injured by moving plant or other powered vehicles. Approximately one half of the EL claimants were skilled manual workers. These claimants were the ones who were injured most frequently when caught in moving machinery. Unskilled manual workers, who comprised a further third of the EL claimants, were the ones who suffered most frequently from sprains and strains resulting from over-exertion or from being struck by moving objects, often involving heavy weights. Manual workers at all occupational skill levels

appeared to be equally vulnerable to falls.

This pattern of accidents differs from that reported to Her Majesty's Factory Inspectorate and published annually by the Health and Safety Executive(4). The latter reports similar proportions of accidents involving falls from heights of less than two metres and incidents in which the victim was struck by an object or exposed to extreme conditions, electric current or harmful substances. However, Factory Inspectorate statistics contain higher proportions of falls, slips or trips at the same level, incidents in which victims have struck against or been rubbed by an object and injuries caused by over-exertion. They also include lower proportions of accidents involving falls from heights of more than two metres, injuries caused by powered vehicles and incidents in which victims became caught in objects. These differences, of course reflect the selection for research purposes of EL claimants who were presumed to be more severely injured. There is no reason to suppose that accidents experienced by all EL claimants would not resemble more closely the general pattern of work place accidents reported to the Factory Inspectorate.

Road traffic accidents

The review of motor claims files collected detailed information about the accidents in which claimants were involved. Table 19 reports the type of vehicle claimants were using at the time they were injured. Nearly one half (45 per cent) were travelling in cars or taxis; 29 per cent were riding mopeds, scooters or motorcycles; and a further 13 per cent were pedestrians. Other road users, including public transport drivers and passengers, drivers and passengers in vans or heavy goods

vehicles and cyclists, were involved much less frequently in accidents that resulted in damages of £5,000 or more, jointly accounting for the remaining 13 per cent of all road traffic accident victims.

Table 19: Type of transport (motor claimants)

Type of transport	Number	Per cent
Pedestrian	78	13
Bicycle	18	3
Moped, scooter, motorcycle - driver	159	26
Moped, scooter, motorcycle - passenger	18	3
Car, taxi - driver	138	23
Car, taxi - front seat passenger	100	16
Car, taxi - rear seat passenger	36	6
Minibus, bus - driver	9	1
Minibus, bus - passenger	22	4
Van, HGV - driver	27	4
Van, HGV - passenger	4	1
Total	609	100

The most important feature of these statistics is the obvious vulnerability to severe injury of moped, scooter and motorcycle riders. One other point of interest concerns use of seat belts, because all of these accidents occurred before the wearing of safety harnessing by front seat vehicle occupants was made compulsory. Out of the 609 road traffic accident victims, 278 may have had opportunities to use seat belts as drivers or front seat passengers in cars, taxis, minibuses, vans or lorries. Only 52 were known to be wearing seatbelts, with a further 128 who were known not to be to be using them. It would seem therefore that as many as 70 per cent of the occupants of vehicles in which such protection was available did not take advantage of its availability. However, this may not be a reliable indication because the files on a third (35 per cent) of the potential users of seat belts did not include information to indicate whether or not they were worn.

Accidents occurred at all hours around the clock (Table 20) - although, not surprisingly, they were much less frequent between 01.00 and 06.59 hours. Peaks occurred during commuting hours, when traffic volumes were highest (between 07.00 and 08.59 hours and between 15.00 and 18.59 hours), with a further late peak (between 23.00 and 00.59 hours). The latter peak, of course, coincides with public house, restaurant and night club closing times, and may reinforce indirectly what has been pointed out on many previous occasions concerning the association between consumption of alcohol, driving and increased risk of involvement in road traffic accidents.

Table 20: Time of accident (motor claimants)

Time (24 hour clock)	Number	Per cent
01.00 to 02.59	25	4
03.00 to 04.59	7	1
05.00 to 06.59	10	2
07.00 to 08.59	70	12
09.00 to 10.59	41	7
11.00 to 12.59	26	5
13.00 to 14.59	46	8
15.00 to 16.59	73	13
17.00 to 18.59	94	16
19.00 to 20.29	59	10
21.00 to 22.59	54	9
23.00 to 00.59	76	13
	581	100
No information	28	
Total	609	

About one fifth (22 per cent) of the claimants were injured in accidents involving one vehicle (Table 21), including all pedestrians and some passengers in other vehicles which left the road or which struck objects that were in or adjacent to the carriageway. Three per cent were cycle riders who were involved in accidents with one other

Table 21: Number of vehicles involved (motor claimants)

Number of vehicles	Number	Per cent
Single vehicle	128	22
One vehicle and bicycle	18	3
Two vehicles	400	62
Three or more vehicles	48	8
	594	100
No information	15	
Total	609	

vehicle. Two thirds (67 per cent) of all victims were in accidents involving two vehicles and the remaining eight per cent were injured in accidents in which three or more vehicles were involved.

Not surprisingly, given that third party claims are made in response to another person's alleged negligence, no less than 87 per cent of claimants who were in vehicles when injured were not engaged in any driving manoeuvre at the time of accident other than simply proceeding ahead. The remaining 13 per cent were either driving - or passengers in - vehicles that were parked, stopping, turning left or right or overtaking when the accidents occurred.

The actual location of accidents is shown in Tables 22 (for vehicle users) and 23 (for pedestrians). For those travelling in vehicles, more than half (54 per cent) were in accidents which occurred on the open road away from any junction or intersection. Of the remainder, 28 per cent were in accidents at "T" junctions or staggered "T" junctions; 10 per cent were at crossroads; and four per cent were at roundabouts, with others, totalling a further four per cent, at "Y" junctions, at multiple junctions, on slip roads or off the road.

Table 22: Location of accident (vehicle users)

Type of junction	Number	Per cent
Not at junction	288	54
T or staggered T junction	146	28
Cross roads	55	10
Roundabout	21	4
Y junction	6	1
Multiple junction	4	1
Slip road	6	1
Off road	3	1
	529	100
No information	2	
Total	531*	

* Excluding 78 pedestrians

Table 23 reveals that 16 per cent of pedestrians were injured while using pedestrian crossings and that a further one per cent were injured within 50 yards of a crossing. Higher proportions, however, were injured when crossing roads where there were no pedestrian crossing points (29 per cent), while walking in the carriageway (11

Table 23: Location of accident (pedestrians)

Pedestrian location	Number	Per cent
Pedestrian crossing	12	16
Within 50yds of crossing	1	1
Crossing elsewhere	22	29
On footpath, verge, off road	31	40
In carriageway	11	14
	77	100
No information	1	
Total	78*	

* Excluding 531 other vehicle users

per cent), or while on a footpath or verge or otherwise off the carriageway (40 per cent).

As far as other circumstances are concerned, approximately half (53 per cent) of accidents occurred in daylight hours, with the rest happening in darkness. Half (54 per cent) occurred when road conditions were dry, with 41 per cent occurring on roads that were damp or wet. Only six per cent occurred in conditions of frost, ice or snow. Almost three fifths (59 per cent) of accidents happened in built-up areas, with all but one per cent of the remainder (which occurred off the road) taking place away from built-up areas, Four per cent of the road traffic accident victims were involved in motorway accidents. The remainder were injured on trunk roads (54 per cent), on B category or unclassified roads (41 per cent) or were off the road (one per cent). Finally, it may be of interest to note that, as a result of their involvement in these accidents, no fewer than 67 per cent of policy holders (defendants) against whom the third party claims were made were subsequently convicted for various offences against the Road Traffic Acts.

CLAIMANTS' INJURIES OR IMPAIRMENTS

Having considered the types of accident experienced by claimants, it is appropriate to consider their effects. This section reports data on the nature, location, number and severity of the main injuries or impairments suffered by the two groups of claimants.

Table 24 reports the nature of claimants' injuries or impairments. It reveals that 97 claimants' injuries were fatal and that this outcome was between three and four times as likely for road traffic accident victims as it was for those who were injured at work. In both groups, though, the most frequently occurring primary injuries were fractures, accounting for half (51 per cent) of the motor claimants and almost

two fifths (38 per cent) of the EL claimants. For motor claimants, the next most frequently occurring injuries were concussion (13 per

Table 24: Nature of main injury or impairment

Nature of injury	EL claimants		Motor claimants		All claimants	
Fatal	9		88		97	
Amputation	29		8		37	
Fracture	79		310		389	
Dislocation	7		11		18	
Concussion	7		77		84	
Laceration	16		33		49	
Contusion	6		4		10	
Sprain/strain	37		51		88	
Burn	7	) 19	0	) 27	7	) 46
Others*	12		27		39	
Total	209		609		818	

* Including industrial diseases and internal injuries other than concussion

Chi square = 114.31, 8 d.f., p < 0.0001

cent) and sprains or strains, mostly "whiplash" injuries (eight per cent). For EL claimants, sprains and strains, mostly affecting the lumbar spine, assumed greater importance, accounting for 18 per cent of all main injuries, with traumatic amputations, mostly of fingers and/or parts of the hand, accounting for a further 14 per cent. The difference between the two groups is statistically significant.

In the case of motor claimants only, who received multiple injuries more frequently, note was made of the nature of any second or third main injury or impairment. Once again fractures comprised the largest category, representing 54 per cent of all second injuries or impairments, followed by lacerations (22 per cent) and concussion (14 per cent). They also accounted for 55 per cent of all third - injuries or impairments, with lacerations and concussion accounting

for a further 28 per cent and nine per cent, respectively.

The difference between EL and Motor claimants was also reflected in the locations of main injuries or impairments (Table 25). Victims of work place accidents were most likely to suffer injuries to the upper limbs (32 per cent), lower limbs (29 per cent) or spine (23 per cent), with injuries to the head (13 per cent) and chest or other internal injuries or impairments (three per cent) accounting for much lower proportions. In contrast, almost half (47 per cent) of the motor claimants suffered lower limb injuries and a further quarter (25 per cent) received head or facial injuries. Injuries to the neck or spine (12 per cent), upper limbs (10 per cent) and chest or other internal injuries (six per cent) accounted for the remainder. This difference between EL and motor claimants is also statistically significant.

Table 25: Location of main injury or impairment

Location of injury	EL claimants	Motor claimants	All claimants
Head	25	128	153
Upper extremities, shoulders	61	55	116
Chest, internal	6	30	36
Neck, spine	44	65	109
Lower extremities, pelvis	56	243	299
Total	192	521	713*

* Exclusive of 8 industrial diseases and 97 fatal injuries (9 EL and 88 motor)

Chi square = 69.67, 4 d.f., $p < 0.0001$

Table 26 demonstrates that vulnerability to multiple injury amongst the two claimant groups was also different. For example, whereas almost three quarters (73 per cent) of EL claimants suffered a single

injury, less than a third (29 per cent) of motor claimants were in this category. In contrast, whereas only 20 per cent of people injured at work had two or three injuries, with a further eight per cent receiving four or more, the comparable proportions of road traffic accidents victims with this many injuries were 49 per cent and 22 per cent, respectively.

Table 26: Number of injuries or impairments

Number of injuries	EL claimants	Motor claimants	All claimants
One	145	151	296
Two	23	162	185
Three	17	91	108
Four	8	65	73
Five or more	7	45	52
	200	514	714
No information		7	7
Total	200	521	721*

* Exclusive of 97 fatal injuries (9 EL and 88 motor)

Chi square = 110.90, 4 d.f., p < 0.0001

A similar picture with reference to severity of injuries is presented in Table 27. Three quarters (72 per cent) of EL claimants received minor or moderate injuries, as measured by the Abbreviated Injury Scale, with the remaining 28 per cent suffering severe, serious, critical or fatal injuries. In contrast, only 35 per cent of motor claimants had minor or moderate injuries, leaving 65 per cent who suffered severe, serious, critical or fatal injuries. Although differences in severity of injury were found between all categories except minor injuries, they were most apparent at the dividing line between moderate and severe injuries, which jointly represented 71 per cent of all main injuries or impairments. This difference is

attributable particularly to motor claimants' greater susceptibility

Table 27: Severity of main injury or impairment

Severity of injury	EL claimants	Motor claimants	All claimants
Minor	25	64	89
Moderate	117	139	256
Severe	43	258	301
Serious, critical	2	38	40
Fatal	9	88	97
	196	587	783
No information	5	22	27
Total	201*	609	710

* Exclusive of 8 industrial diseases not classifiable on the Abbreviated Injury Scale

Chi square = 98.64, 4 d.f., p < 0.0001

to displaced or comminuted lower limb fractures and to fractures which extended into joints. All of these conditions are awarded a higher severity grading on the Abbreviated Injury Scale. The differences between EL and motor claimants in number and severity of main injuries or impairments are both statistically significant.

When claimants' main injuries were classified in accordance with the nine general categories of impairment in the International Classification of Impairments, Diseases, and Handicaps (ICIDH), no fewer than four-fifths of both samples (81 per cent of EL claimants and 77 per cent of motor claimants) had skeletal impairments of one kind or another. For motor claimants, the next most frequently occurring impairments were psychological (13 per cent), reflecting the prevalence of concussion associated with head injury, ocular (four per cent), visceral (three per cent) and disfiguring impairments (two per cent). All other categories each accounted for one per cent or less

of all main impairments. For EL claimants, the next most frequently occurring main impairments were ocular (six per cent), visceral (five per cent), disfiguring (four per cent), aural (three per cent) and psychological effects of head injury (two per cent), with no other impairment categories represented. A t test of proportions found no significant difference between the proportion in each group with skeletal impairments ($z = 1.190$, $p = 0.12$).

MEDICAL TREATMENT

Only a very small proportion of claimants did not attend hospital immediately after injury. Those who did not do so were the ones who consulted their General Practitioner, usually following accidents which caused cervical or lumbar strains, and who often were referred to hospital at a much later stage, if at all. In all other cases, accident victims were transported to the nearest casualty department, where some were allowed home after treatment and others - the majority - were admitted as in-patients. Length of in-patient stay was not recorded for EL claimants. In the case of motor claimants, however, 16 per cent were not detained; 49 per cent remained in hospital for less than one month; 18 per cent were discharged within two months, 13 per cent stayed in hospital for between three and five months; and four per cent had in-patient treatment which lasted for more than five months, the longest period being 18 months.

As might be expected in view of the nature of injuries received, the majority of in-patients were admitted to orthopaedic wards and treated by orthopaedic surgeons. Serious or critical injuries, and some severe ones, of course, entailed transfer to intensive care, to other specialist units for head or spinal cord injuries or to other

departments for ophthalmic surgery, plastic surgery or the treatment of burns. The patterns of injury and immediate care are reflected in the finding that four out of every five claimants (80 per cent EL and 84 per cent motor) were treated by orthopaedic surgeons, in most cases having no contact with other specialties. A t test of proportions found no difference between the two groups in this respect ($z = 1.071$, $p = 0.14$). Where other specialties were involved in early stages of treatment, those called upon most frequently were Neurology/ Neurosurgery, Ophthalmic Surgery and Plastic Surgery. As might be expected, other specialties like Psychiatry, Rehabilitation Medicine and Urology, tended to become involved in the later stages of treatment rather than at the outset.

Table 28 confirms that, in most cases, medical treatment was completed before settlement. Given that completion of treatment normally is a precondition of settlement - to permit opportunities for assessment of residual disablement and consideration of the likelihood of any future complications - it is not surprising that this should be the case. Those claims in which medical treatment was not completed by the time of settlement therefore may be of special interest. They included a very small number of cases in which very serious injuries were sustained and which required long-term follow-up and care. They also included a small number of cases of head injury in which long-term sequelae needed to be monitored.

However, by far the largest group of claimants who were still receiving medical treatment at settlement were cases whose initial injuries or impairments were much less serious, cervical or - more frequently - lumbar strains, with a subsequent history of chronic pain

Table 28: Medical treatment at settlement

Treatment status	EL claimants	Motor claimants	All claimants
Completed	167	419	586
Continuing	19	18	37
	186	437	623
No information	14	84	98
Total	200	521	721*

* Exclusive of 97 fatal accidents (9 EL and 88 motor)

Chi square = 8.68, 1 d.f., $p < 0.01$

and/or psychological problems. This response, which was frequently associated with suspicions of malingering, poor motivation or functional overlay, occurred more frequently amongst victims of work place accidents. It mainly accounts for the statistically significant difference between the proportions of EL and motor claimants whose medical treatment, normally by their General Practitioners, was continuing at the time claims were settled.

Most claimants had not only completed medical treatment by the date of settlement but had done so well beforehand. The median length of medical treatment was six months for EL claimants and eight months for motor claimants: the means were 12.7 and 14.4 months, respectively. These compare with median times from accident to settlement of 29 months for EL claimants and 34 months for motor claimants, with means of 34.2 and 35.7 months, respectively. For both groups, therefore, there was an interval of approximately two years, on average, between completion of medical treatment and settlement of claims. During this period, some claimants returned to work, but many others did not do so. Longer-term outcomes, including return to work and claimants' involvement with vocational rehabilitation services, will be reported

in more detail in later sections. Before presenting that evidence, however, it is necessary to describe their residual disabilities.

RESIDUAL DISABILITY

In many instances, it would not be correct to assume either that claimants are able to return to work immediately medical treatment has been completed or that settlement can be reached at that early stage. Where injuries have been relatively severe, additional time is needed for full recuperation and to complete the various medicolegal formalities. One important aspect of the latter process is to obtain a clear assessment of the nature and extent of residual disability. To this end, as noted earlier, negotiations may require third party solicitors or insurers to obtain one or more medical reports, normally from consultants who have treated claimants but sometimes from independent sources. It will be recalled that most claims were settled with the benefit of two or three reports, although some required more. The prognoses expressed in final medical reports were studied in order to record with the aid of an amended (foreshortened) version of the ICIDH Outlook Scale the extent of residual disability expected in each case.

Consultants' opinions on residual disability are summarised in Table 29. This shows that no residual disability was expected in the cases of approximately five per cent of the EL claimants and eight per cent of the motor claimants. A further quarter of both groups were expected either to recover fully or to improve over time, and over half of the members of each group were adjudged to have a stable (permanent) disability. The remainder had disabilities which were expected to deteriorate over time or which were of indeterminable

Table 29: Nature of residual disability (prognosis)

Prognosis	EL claimants	Motor claimants	All claimants
No residual disability	10	37	47
Recovery or improvement expected	53	130	183
Stable (permanent) disability	104	270	374
Deterioration expected	11	33	44
Undeterminable outlook	9	20	29
	187	490	677
Outlook unspecified, missing	13	31	44
Total	200	521	721*

* Exclusive of 97 fatal injuries (9 EL and 88 motor)

Chi square = 1.44, 4 d.f., p = 0.84 (not significant)

outlook. The small difference between the two groups is not statistically significant.

Severity of residual disability was measured with reference to the ICIDH Severity Scale (Table 30). It was found that around threequarters of all claimants were expected to experience some difficulty in performance. In such cases, medical consultants were of the opinion that, while claimants could perform activities or sustain behaviour without aids, they would nonetheless experience some difficulty in doing so. A further 12 per cent were not expected to be disabled permanently, leaving 14 per cent with an anticipated need for varying degrees of aid or assistance, including seven cases who were expected to be dependent on substantial help from other people and two who were wholly dependent on carers. The difference between EL and motor claimants is not statistically significant.

Table 30: Severity of residual disability

Severity of residual disability	EL claimants		Motor claimants		All claimants	
No disability, full recovery expected	15		62		77	
Difficulty in performance	145		347		492	
Aided performance	18		64		82	
Assisted performance	1	)	4	)	5	)
Dependent	1	) 2	6	) 12	7	) 14
Complete inability	0	)	2	)	2	)
	180		485		665	
Unspecified or missing	20		36		56	
Total	200		521		721*	

* Exclusive of 97 fatal injuries (9 EL and 88 motor)

Chi square = 5.93, 3 d.f., p = 0.16 (not significant)

Different methods of recording other information about residual disability precludes further direct comparisons of the kinds of disablement experienced by the two groups of claimants. In the case of people injured at work, a single assessment was made using ICIDH disability categories. This showed that half (52 per cent) of the sample had some form of locomotor disability and that one fifth (22 per cent) had a dexterity disability, the latter finding reflecting the number of hand injuries suffered by people injured at work. Motor claimants, however, were expected to have multiple injuries more frequently and hence potentially to experience a wider range of disabilities. For this reason, the data collection schedule included opportunities to code up to five residual disabilities in each case. Twelve per cent were either not disabled or expected to recover fully, 41 per cent were reported as having only one residual disability, 28 per cent had two and 17 per cent had three or four disabilities. In the remaining two per cent five disabilities were noted. In this case

also, locomotor disabilities were most prevalent, accounting for a third (34 per cent) of all disabilities. Another 22 per cent were body disposition disabilities limiting, for example, claimants' ability to reach, push, pull, stretch, bend, kneel or crouch and 19 per cent were behaviour disabilities in which claimants were in some way limited in the performance of pre-accident leisure, domestic and occupational activities or roles. Communication, personal care, situational, dexterity and other disabilities accounted for the remaining quarter.

RETURN TO WORK

In the period between completion of medical treatment and settlement of claims, approximately half (53 per cent) of the EL claimants and almost three quarters (71 per cent) of the motor claimants returned to work, either with their former employer or with a new one (Table 31).

Table 31: Return to work by settlement

Outcome	EL claimants	Motor claimants	All claimants
Returned to work	99	341	440
Unemployed	74	106	180
Economically inactive	5	24	29
Still sick	9	9	18
	187	480	667
No information	13	41	54
Total	200	521	721*

* Exclusive of 97 fatal injuries (9 EL and 88 motor)

Chi square = 27.92, 3 d.f., $p < 0.0001$

Further small proportions of both samples were deemed "economically inactive" and out of the labour market either permanently, through normal retirement or early retirement on medical grounds, or

temporarily, because they were in full-time education or because they were still receiving medical treatment for their injuries or for other subsequent ill health. The remaining 40 per cent of EL claimants and 22 per cent of motor claimants were those who, while fit for work, were unemployed. The latter groups included some who had returned to work only to be made redundant; some who had returned to work - possibly prematurely - only to discover that they were not yet capable of doing all that was required of them; and some who, having lost their jobs, made repeated but unsuccessful efforts to find alternative employment. However, they also included the relatively small proportions of all claimants (13 per cent of EL claimants and 8 per cent of motor claimants) in whose cases poor motivation, malingering or functional overlay was suspected. The difference between the proportions of EL and motor claimants who returned to work before settlement is statistically significant.

REHABILITATION AND RESETTLEMENT

Given the severity of claimants' injuries, time spent away from work on completion of medical treatment and the nature and extent of residual disability, it might be expected that there would be a high rate of referral to appropriate rehabilitation services to assist resettlement. But this was not so. The personal injury claims files did include evidence that over half of both EL and motor claimants were referred to physiotherapy departments. In most cases, though, this appeared to be the only additional professional help received. As Table 32 confirms, references to the possibility of referral to other potentially relevant services were much less frequent. Moreover, even these very low figures may exaggerate the number of claimants who actually received such help because there were several

cases who were considered for, or referred to, more than one service. However, it cannot be ruled out, especially where the DRO and other Jobcentre services were concerned, that some claimants referred themselves without that fact being noted on their files. Nevertheless, it is clear that the possibility of referral to vocational rehabilitation was not a major pre-occupation in the medical management of these patients. This interpretation is endorsed by other evidence that,even when referrals were made, they were generally delayed until the final stages of treatment, when other measures had failed. Certainly there was no indication that medical management of disability generally conformed with the principle of early intervention that has been shown to be of crucial importance to successful vocational rehabilitation.

Table 32: References to rehabilitation and resettlement services

	Number of references				
Service	EL claimants	Motor claimants	z	p=	statistical significance*
Occupational therapy	7	14	0.581	0.28	NS
Industrial therapy	1	1	0.704	0.24	NS
Employment rehabilitation	10	16	1.244	0.11	NS
DRO service	5	7	1.087	0.14	NS
Training/other	3	9	-0.214	0.42	NS
Number of cases	200	521			

* NS = not significant

The proportions of EL and motor claimants for whom referral to various vocational rehabilitation services was considered were compared using t tests of proportions. There is not a statistically significant difference between the two groups on any of the five variables on which comparisons were made (Table 32).

SUMMARY AND CONCLUSIONS

Comparison of EL and motor claimants has highlighted several differences between them and also some similarities. Inspection of these results, however, suggests a discernible pattern to the instances in which null hypotheses are rejected or accepted. For example, as compared with road traffic accident victims, significantly higher proportions of people injured at work were in older age groups, were male, were married, were in manual occupations and resided in industrialised regions. The two groups also differed with regard to the nature, location, number and severity of their injuries. EL claimants were more likely to suffer sprains and strains, mostly involving the lumbar spine, and traumatic amputations, predominantly hand injuries. In contrast, higher proportions of motor claimants suffered lower limb injuries, mainly fractures; concussion; other head and facial injuries and internal injuries. Also, whereas the majority of people injured at work suffered single injuries or impairments mainly of moderate severity, most road traffic accident victims suffered multiple injuries of a more severe or serious nature, and were much more likely to receive fatal injuries. As might be expected in view of these differences, fewer medical reports were requested in relation to EL claimants and a higher proportion of this group received damages of £10,000 or less. More surprisingly, in a higher proportion of EL claims more than a year elapsed before the first medical report was provided, and a higher proportion of this group was still receiving medical treatment, mostly from General Practitioners, at settlement. Finally, while medical treatment of the more severely injured motor claimants generally took a little longer to complete, a higher proportion of this group returned to work before settlement.

Despite these personal, clinical and procedural differences between EL and motor claimants, no differences were found with regard to impairments, severity of residual disability and outlook, as assessed by the International Classification of Impairments, Disabilities, and Handicaps. Approximately four-fifths of both groups had skeletal impairments of various kinds, a finding that is reflected in the fact that an equivalent proportion of both groups were treated by orthopaedic surgeons. Similar proportions of both groups were expected to experience no residual disability or to make a full recovery; to experience some difficulty in performance; or to require aids or varying levels of personal assistance. Also final medical reports indicated that just over half of each group had stable, permanent disabilities and that about one quarter were expected to recover or improve, with smaller proportions not expected to have any residual disability or to have disabilities which would deteriorate over time or which were of indeterminable outlook. There was also no difference between the two groups of claimants with regard to the time taken to settle claims; the proportions of cases in which various forms of legal action were taken; or the very low number of cases in both groups in which referral to various vocational rehabilitation and resettlement services was either considered or made.

It is often held that the adversarial context in which claims for compensation for personal injury are negotiated in Great Britain discourages early return to work and hence that it conflicts with the aims of rehabilitation. Such argument maintains that a system oriented to provision of cash settlements for lost ability or reduced potential is not compatible with one which emphasises identification and fostering of residual ability or development of previously

untapped potential. Nevertheless, one half of EL claimants and almost threequarters of motor claimants returned to work before their claims were settled. Others returned to work only to be made redundant or to discover that they were not yet capable of meeting all the demands of their pre-accident jobs, and some who lost their jobs made repeated but unsuccessful efforts to find new employment. These creditable outcomes, achieved during a period of severe recession when unemployment reached its highest levels since the Depression of the 1930s, reflect well on claimants' motivation and also on the generally considerate disposition of their employers. They also suggest that, mainly apart from the circumstances prevailing in the small minority of cases in which poor motivation, malingering or functional overlay were suspected, the adversarial climate may be a less formidable barrier to return to work than has sometimes been supposed.

Even though involvement in personal injury litigation may not have the deterrent effect that is often attributed to it, prevailing attitudes, practices and procedures may still inhibit some claimants from returning to work or from attempting to do so at the earliest opportunity. Certainly, there is a well established strand of medical opinion which holds that the recovery of patients who are pursuing compensation claims often may follow a different course or proceed at at slower rate compared to other patients with similar injuries and impairments but who are not involved in litigation(5). There is a tendency to attribute such differences to patients' attitudes or motivation, and undoubtedly this is valid in some cases - although probably not nearly as many as generalisations from previous literature on compensation neurosis or workmen's compensation would suggest. In other cases, differences may not be so marked, and where

they do occur they might be explained more readily by iatrogenic factors, that is with reference to the medicolegal system itself and the attitudes, practices and procedures of the doctors, lawyers and insurers who are involved in its operation.

For example, timescales for dealing with personal injury claims have become standardised around the periods of time required for litigation and other medicolegal formalities. These norms were established some time ago - before the advent of modern rehabilitation services, with whose objectives they may conflict. They may, for instance, undermine achievement of continuity in case management, especially in the later stages of recovery when claimants have returned home, when out-patient review is infrequent or has ceased, when medical consultants are distracted by the demands that new patients make on their time, and when often there is no single person available to whom patients can turn for information or advice or who is generally responsible for them and can refer them to appropriate rehabilitation services. Research(6) and policy reviews(7) have confirmed how difficult it is generally to co-ordinate delivery of relevant medical, social and vocational rehabilitation services to meet individual needs. The longer timescales involved therefore may make it more difficult to achieve such objectives in personal injury claimants' cases.

This comparison between EL and motor claimants has identified in both groups an interval of approximately two years on average between completion of medical treatment and the point in time when claims are settled. While some time is needed on completion of medical treatment to allow disabilities to stabilise and for relevant investigations and other medicolegal formalities, this interval should have offered an

ideal opportunity to refer claimants to appropriate rehabilitation services - especially in view of the fact that so many clearly did not regard their involvement in personal injury litigation as an impediment to returning to work, or attempting to do so. Referral to rehabilitation might have been particularly beneficial to those who were unable to resume their former occupation, or who had lost their jobs, or who were advised to find less physically demanding employment. However, it was found that very few cases indeed were referred to occupational therapy departments or to vocational rehabilitation services, when many more might have benefited from the specialised advice or assistance that could have been given with occupational assessment, vocational guidance, training or help in finding suitable alternative employment within their residual capacity.

Moreover, examination of decision making in the few cases who were referred to vocational rehabilitation revealed that referrals generally were made at a very late stage, often several years after their accidents. This reflects the usual practice in Great Britain where medical consultants have been encouraged to assume responsibility for all aspects of case management up to the point at which patients return to work, with referral to other medical, social or vocational rehabilitation services quite infrequent, and often made as a last resort(8). This approach, and the sequential model of disability management on which it is based, has been quite effective in the majority of cases with relatively minor injuries or impairments and short timescales, and in which referral to other more specialised services normally is unnecessary. But the needs of other more severely injured patients, like most of the personal injury claimants

included in this study, may not be met adequately by this approach - because their medical, social and occupational problems are not tackled concurrently; because referrals to specialised services are made much too late, if at all; and because timescales are determined more by claimants' involvement in litigation and other medicolegal formalities rather than by rehabilitation requirements.

These are not new problems: nor are they unique to personal injury claimants. One study of disabled people referred to Employment Rehabilitation Centres for assessment and rehabilitation found that less than one per cent had been referred directly by medical consultants or general practitioners(9). Although doctors had referred another eight per cent of the clientele to Disablement Resettlement Officers, who subsequently referred them on to employment rehabilitation, nine out of every 10 clients had not been referred by the medical profession(10). Similar reluctance on the part of the medical profession to refer patients to vocational rehabilitation services was found in an American study of long-term disability insurance (the equivalent of British permanent health insurance) claimants who were receiving wage replacement income during periods of sickness and incapacity. This study found that only six per cent of 600 claimants had received help from vocational rehabilitation services(11). This practice clearly conflicts with recent evidence on the crucial importance of early intervention in order to ensure return to work after illness or injury, without which there is an increased susceptibility to disability dependence(12), a decreasing probability of return to work as time passes(13) and, inevitably, higher direct and indirect costs. Conventional medical management of disability practices, characterised by low rates of referral to relevant

specialist services, almost certainly will need to be revised if early intervention principles are to be implemented more effectively.

Another potential iatrogenic obstacle to rehabilitation and resettlement is suggested by the evidence that the involvement of trades union legal departments, or solicitors appointed by unions to represent their members' interests, may both prolong negotiations and account for the lower rate of return to work before settlement of EL claimants. Claimants who were injured in work place accidents generally suffered fewer severe or more serious or multiple injuries. Not surprisingly, therefore, their medical treatment generally was completed in a shorter time, and doctors were asked to provide fewer medical reports per case. Despite these differences, it was found that their claims took just as long to settle as those pursued by motor claimants; that first medical reports were obtained at a later stage in proceedings; and, as already noted, that only one half of the EL claimants returned to work before settlement as compared with nearly threequarters of the motor claimants. It may be the case that these differences reflect, at least in part, the increased complexity of the problem of establishing liability for accidents at work. If not, or to the extent that this is not a completely satisfactory explanation, iatrogenic factors reflecting, for example, the trades union movement's continuing commitment to maximising cash settlements, at the expense of other options like rehabilitation, could account for some of the differences between the two groups of claimants. This possibility would certainly merit more detailed investigation in another context.

To summarise, comparison of EL and motor claimants suggests that those

who return to work before settlement of their claims may do so despite the influence of an adversarial climate and a medicolegal system which, for various reasons, are not wholly conducive to vocational rehabilitation and resettlement. It also suggests that such iatrogenic factors as medical management of disability practices, trades union involvement and other claims negotiation procedures may be more powerful deterrents to rehabilitation and resettlement than is normally recognised. It follows that any attempt to enhance the effectiveness of the present system should pay at least as much attention to the influence on employment outcome of established professional attitudes, practices and procedures in medicine, law and insurance as to the psychological explanations which have dominated previous literature and debates on this subject. The next Chapter reports the results of work done to examine more closely the interaction between selected personal, clinical, procedural and structural determinants of employment outcome, and their relative bearing on personal injury claimants' return to work before settlement.

CHAPTER SIX

Return to Work of Personal Injury Claimants

INTRODUCTION

The analysis reported in this Chapter was addressed originally to the question "What predicts return to work by personal injury claimants up to the point in time at which their claims are settled?" To answer that question, two analyses were undertaken using data on two representative samples of (a) 93 employers' liability (EL) claimants and (b) 101 motor claimants of working age and who were in employment when they were injured. The first, univariate stage of analysis compared claimants who were in employment at the time their claims were settled with those who were not in employment at that time. The objective was to test a series of 15 null hypotheses suggested by previous literature as possible predictors of return to work or non-return to work. This was regarded as an essential preliminary to a second, multivariate stage using stepwise logistic regression analysis to develop a prediction model which would take into consideration any intercorrelation between individual predictors.

Results from this work suggested a further analysis to determine if it is possible, at an earlier stage of claims negotiations, to distinguish between claimants who eventually return to work before settlement and those who do not. This problem has important practical implications because a valid and reliable procedure for making such distinctions

could be a useful aid to the identification of claimants whose rehabilitation and return to work might be mediated by referral to appropriate sources of advice or assistance. This Chapter therefore also reports work done to develop a scale, based on information that either is or could be available to insurers during the first year of a claim, which may help them to target rehabilitative assistance on those claimants who are most likely to benefit from it, as opposed to those who may not need it and those who may not be helped at all.

PREDICTION OF RETURN TO WORK BEFORE SETTLEMENT

Univariate analysis

Selection of variables for the univariate analysis of possible predictors of return to work or non-return to work was constrained by the information contained in personal injury claims files. It was not possible to test psychological hypotheses concerning, for example, the effect on employment outcome of claimants' motivation, proneness to anxiety or depression or attitudes (e.g. blame). Nor was it possible to test social hypotheses concerning, for example, the influence on outcome of the level or quality of family support that claimants received.

Nevertheless, there was sufficient data on all 194 cases included in the analysis to test hypotheses concerning the association between return to work by settlement and the 15 personal, clinical, occupational, economic and procedural variables listed in Table 33. This Table summarises the results of statistical analysis using Chi square to test, for each variable, a null hypothesis of no difference between the 113 claimants who were in employment at settlement and the 81 who were not in employment at that stage. The detailed tables from which the summary table has been constructed are located in Appendix 3C.

Table 33: Employment outcome at settlement - summary*

Variable	Chi square	d.f.	p ≤
Age	23.17	4	0.0001
Sex	1.96	1	0.16(NS)
Occupation	25.06	4	0.0001
Claim	4.37	1	0.05
Number of injuries	7.40	3	0.06(NS)
Severity of injury	5.25	2	0.07(NS)
Number of operations	5.20	4	0.27(NS)
Length of treatment	32.12	4	0.0001
Period off work	137.89	5	0.0001
Time to settlement	11.53	4	0.05
Damages	12.16	3	0.01
Head injury	2.23	1	0.14(NS)
Back/spinal injury	17.83	1	0.0001
Psychological problem	27.53	1	0.0001
Labour market conditions	13.64	2	0.01

NS = not significant

*** The tables on which this summary is based are located in Appendix 3C**

Results suggest acceptance of the null hypothesis for the five variables Sex, Number of injuries, Severity of main injury or impairment, Number of operative procedures and Head injury. Similar proportions of males and females had returned to work before settlement, as was the case with claimants who received head injuries and those who did not, and also those who had undergone different numbers of operative procedures after initial treatment received on admission to hospital following their accidents. While a higher proportion of claimants who were not in employment at settlement had a single injury or impairment, and while a higher proportion of this same group had minor injuries, these tendencies were not statistically significant. All of these results therefore lend weight to a more general conclusion that, as far as this group of personal injury claimants is concerned, clinical variables are poor predictors of vocational outcome, a point to which further reference will be made in later sections.

In all other cases, the results of statistical analysis suggest rejection of the relevant null hypotheses. As the detailed tables in Appendix 3C confirm, claimants who were in employment at settlement included significantly higher proportions of younger people and of persons in professional/intermediate, skilled manual and semi-skilled manual occupations. Also more motor claimants than EL claimants returned to work before settlement, and those who returned to work generally underwent shorter periods of medical treatment. Those not in employment at settlement included higher proportions of the cases which took more than three years to conclude and which were concluded by settlements of more than £10,000. Persons with back or spinal injuries and those who had psychological problems were also less likely to have returned to work before settlement. The influence of local labour market conditions on resettlement is also apparent in that a higher proportion of claimants who resided in regions of low unemployment returned to work by settlement. Finally, there is the clearest possible indication that claimants who were away from work for less than a year were much more likely to be in employment at settlement than those who were absent from work for two or more years.

Multivariate Analysis

Each of these variables is a potential predictor of employment outcome for personal injury claimants like those who were included in the study. However, univariate analysis cannot take into consideration the interrelationship between variables that is revealed by the correlation matrix reported in Appendix 3D. Examination of this matrix suggested that it might be possible to develop a more parsimonious model, using regression analysis. Given that the data available from personal injury claims files were in both discrete and

continuous forms, the most appropriate procedure was stepwise logistic regression.

The BMDP stepwise logistic regression (PLR) program(1) is an alternative to standard regression methods which can be used with data that do not meet the latter's requirements for normally distributed, continuous, independent variables. This particular program investigates the relationship between a binary dependent variable - in this case in employment or not in employment at settlement - and a specified set of independent variables which may be either categorical or continuous. The independent variables used in this analysis comprised all those which were included in the preceding univariate analysis, of which five (Sex, Type of claim, Presence/absence of head injury, Presence/absence of a back or spinal injury and Presence/absence of psychological problem) were categorical and the remaining ten took the form of continuous grouped data. The program generates design variables for each categorical variable.

The PLR program selects independent (predictor) variables in a step-wise manner and, at each stage of analysis when a continuous variable or a set of design variables (ie one categorical variable) is either added to or removed from the model, estimates the coefficients for a logistic regression. The predicted proportion of successes (s/n) follows the logistic model exponential (U)/(1 + exponential U) where s is the sum of the binary (0,1) dependent variable and U is a linear function of one or more independent variables. Step selections can be based on either maximum likelihood ratio (MLR) or an approximate asymptotic covariance estimate (ACE). Results reported below were produced by the former, MLR option, although the more

approximate ACE procedure was also used.

Output from the program at each stage included the log likelihood, the change in log likelihood from the previous step and goodness-of-fit statistics. It also included the approximate Chi square to enter or remove each variable, the coefficients for a logistic regression, their standard errors and the approximation of t produced by dividing each coefficient by its standard error. A coefficient that is twice the value of its standard error is significant at the five per cent confidence level.

Results of the application of this procedure to data on the 194 personal injury claimants are presented in Tables 34 to 37. The first of these tables summarises the analysis up to the ninth step, at which point the program terminated because none of the remaining variables passed predetermined limits for entry or removal. Length of time off

Table 34: Stepwise logistic regression analysis - summary

Step	Term entered	d.f.	Term removed	Log likelihood	Improvement Chi square	p=
0		1		-131.82		
1	Period off work	1		- 50.55	162.55	0.000
2	Back/spinal injury	1		- 46.22	8.66	0.003
3	Number of injuries	1		- 42.81	6.82	0.009
4	Time to settlement	1		- 40.12	5.37	0.020
5	Psychological problem	1		- 37.21	5.82	0.016
6	Labour market	1		- 35.53	3.36	0.067
7		1	Back injury	- 36.51	1.96	0.161
8	Length of treatment	1		- 35.09	2.84	0.092
9	Damages	1		- 33.63	2.92	0.008

work between accident and settlement emerges as by far the most powerful predictor of employment outcome at settlement, with shorter absences from work predictive of being in employment at that time.

In order to identify the next most powerful term it is necessary to examine what happened to the two variables which recorded whether or not there was a back or spinal injury and whether or not psychological problems were reported. As the correlation matrix in Appendix 3D shows, there was a statistically significant positive correlation between these two variables ($r = .37$, 192 d.f., $p < 0.001$). Back or spinal injury was entered into the model at the second step and assumed the position of second most powerful term until step 5, when Psychological problem was entered. After that point its importance diminished quickly to step 7, when it was removed altogether. At the same time, the position of Psychological problem as the second most powerful term became more strongly confirmed.

Table 35 reports the coefficients for a logistic regression at each stage of the stepping process. It demonstrates that, while all other coefficients remained relatively stable, the roles of Back or spinal injury and Psychological problem were reversed. To allow for this effect, and taking into consideration the evidence that the two variables entered at stages 8 and 9 of the stepwise procedure did not produce statistically significant improvements to the model, it was concluded that the analysis at step 7, following removal of the Back or spinal injury variable, provided the optimal model.

This interpretation was supported by the results of two goodness-of-fit tests included in the analysis(3). The first, the

Table 35: Coefficients for a logistic regression at each step

Step	Constant	Period off work	Spinal injury	Number of injuries	Time to settlement	Psych. problem	Labour market	Length of treatment	Amount of damages
0	0.332								
1	-0.964	-1.485							
2	6.489	-1.474	-1.031						
3	5.772	-1.601	-1.158	0.683					
4	4.839	-1.841	-1.197	0.685	0.594				
5	3.857	-1.874	-0.757	0.768	0.759	-1.099			
6	5.666	-1.869	-0.684	0.640	0.751	-1.182	-0.715		
7*	**6.085**	**-1.892**	**OUT**	**0.629**	**0.782**	**-1.483**	**-0.767**		
8	5.460	-2.158		0.586	0.752	-1.488	-0.743	0.588	
9	6.351	-2.225		0.763	0.899	-1.570	-0.836	0.645	-0.638

* The final model

Hosmer test, compares observed and predicted frequencies using Chi square. Acceptance of the null hypothesis is an indication of goodness-of-fit. The Hosmer test result for step 7 was a Chi square value of 2.79, 6 d.f., p = 0.84 - indicating acceptance of the null hypothesis. The second goodness-of-fit test, the CC Brown test compares the fit of data to the logistic model. In this case also, acceptance of the null hypothesis is an indication of goodness-of-fit. The CC Brown test at step 7 produced a Chi square value of 0.44, 2d.f., p = 0.80 - also indicating acceptance of the null hypothesis. Corroboration of this particular model was provided by a second analysis of the data using the more approximate asymptotic covariance estimate (ACE) procedure. This generated the identical model in five steps, with Psychological problem entered at step 2.

The final model, confirmed by two methods of analysis and relevant goodness-of-fit statistics, is summarised in Table 36. In general terms, this model identifies five terms which, in combination, predict employment status at settlement. In order of the significance of their relative contribution to the prediction equation they are:-

* Time off work - shorter periods of time away from work are associated with return to work before settlement;

* Psychological problem - absence of psychological problems is associated with return to work before settlement;

* Time to settlement - return to work before settlement is associated with longer intervals between accident and settlement (ie greater opportunity to resume employment);

* Number of injuries - return to work is associated with more rather than fewer injuries or impairments;

* Labour market conditions - return to work before settlement is associated with regional labour market conditions of low unemployment.

It is not without interest that the final model incorporates temporal, personal, procedural, clinical and economic terms. Their inclusion

Table 36: Terms included in the model at step 7

Term	Coefficient	Standard error	Coefficient/ standard error
Period off work	-1.892	0.301	-6.291
Psychological problem	-1.483	0.452	-3.285
Time to settlement	0.782	0.292	2.680
Number of injuries	0.629	0.291	2.158
Labour market conditions	-0.767	0.393	-1.951
Constant	6.085	1.623	3.749

underlines the multidimensional nature of the problem and hence the complexity of forecasting in this particular context. It is also of interest that, with the exception of the clinical term, their influence on outcome reflects what might have been expected on a priori grounds. It is not unreasonable that return to work should be associated with shorter periods of time away from the work place, the absence of psychological problems or favourable labour market conditions. Nor is it unreasonable, when claims negotiations are prolonged, that return to work before settlement should be associated with the increased opportunities created by such extended timescales.

However, it is less obvious why return to work is associated with a higher number of injuries or impairments. When interpreting this term, it should be remembered that the preceding univariate analysis of claimants who did or did not return to work before settlement did not yield a statistically significant difference for this variable. It may be the case therefore that this particular term is included in the model because it is an expression of other interactions or effects rather than for its clinical significance alone. However, the

univariate analysis did reveal that those in employment at settlement included significantly higher proportions of motor claimants, who were younger and who included more people in non-manual or more highly skilled occupations, and more people who received severe injuries. Given that none of these other variables was included in the model on its own account, it is quite probable that selection of the term Number of injuries is, in some measure, an expression of more complex interactions between them. If so, the stepwise logistic regression analysis would be consistent with the univariate analysis in suggesting that employment outcome is associated less directly with clinical variables than it is with other non-clinical predictors of outcome.

In the absence of a prospective application, which has yet to be undertaken, one test of the model is to determine how well it fits the data from which it is derived. In this instance, it is possible to undertake an assessment of this kind by comparing the observed outcome of each case (in employment or not in employment at settlement) with outcome as predicted by the model. If the model fits the data well, predicted probabilities of being in employment should be high for all who were known to have returned to work before settlement and low for all those who were known not to have returned to work. Table 37 reports the results of this comparison for the 194 personal injury claimants.

As can be seen from the table, using a predicted probability of 0.50 as a dividing line, the model predicts correctly (a) that 105 (93 per cent) of the 113 claimants who returned to work before settlement have a greater than 50 per cent chance of being in employment at that time

Table 37: Fitting the model: observed and predicted outcomes compared

Predicted probability of being in employment	Observed outcome: In employment	Observed outcome: Not in employment
1.00 to 0.91	92	1
0.90 to 0.71	9	1
0.70 to 0.51	4	2
0.49 to 0.31	1	4
0.30 to 0.11	6	17
0.10 to 0.00	1	56
Number	113	81

and (b) that 77 (95 per cent) of the 81 claimants who did not return to work before settlement have a less than 50 per cent chance of being in employment. Given that the majority of predicted probabilities occupy the extremes rather than the middle of the range, it can be concluded that the model has a high level of predictive accuracy.

IDENTIFYING POTENTIAL TO BENEFIT FROM VOCATIONAL REHABILITATION

In the first instance, it was intended to proceed no further than the prediction study. However, once it became apparent that employment outcome at settlement could be predicted with such accuracy, that finding stimulated interest in another set of questions. In particular the discovery, on re-examination of the variable which contributed most to prediction of return to work at settlement (ie period off work), that four-fifths (79 per cent) of personal injury claimants who returned to work before settlement had less than one year away from work, focused attention on an important practical problem. This concerned the possibility of identifying at an early stage in claims negotiations the claimants whose return to work might be assisted by provision of, or referral to, appropriate vocational rehabilitation and resettlement services. The comparison between EL

and motor claimants reported in the previous Chapter revealed how few personal injury claimants came into contact with such services before settlement. It also revealed that there were long intervals between completion of medical treatment and settlement of claims, when many claimants might have made use of such services but did not do so. In view of this evidence, there appeared to be considerable scope to help them return to work or to do so sooner. If successful, this would benefit claimants by helping them avoid long-term unemployment. It would also be of potential benefit to insurers (and, ultimately, their policy holders) by helping to contain costs associated with, for example, payments for loss of earnings, loss of future earnings and, in some cases, loss of standing in the labour market.

Univariate analysis

As a first step, further univariate statistical analysis was undertaken to determine which if any of the variables included in the preceding analysis of return to work by settlement differentiated between, on the one hand, claimants who returned to work within a year of being injured and, on the other, those who returned later or who did not return to work at all before settlement of their claims. Results of this analysis using Chi square to test, for each variable, a null hypothesis of no difference between these two groups of claimants are summarised in Table 38. The detailed tables on which the summary is based are located in Appendix 3E.

Comparison with Table 33 reveals a high degree of similarity between these results and those obtained in the earlier analysis of outcome at settlement. In both cases, the null hypothesis is accepted for the variables Number of injuries or impairments, Severity of main injury

or impairment, Number of operative procedures and Presence/absence of a head injury. Results therefore provide further corroboration of the conclusion from other analyses that clinical variables generally, are poor predictors of vocational outcome. In both cases also, the null

Table 38: Employment outcome at 12 months - summary*

Variable	Chi square	d.f.	p ≤
Age	15.14	4	0.01
Sex	4.32	1	0.05
Occupation	22.10	4	0.001
Claim	1.40	1	0.24(NS)
Number of injuries	1.85	3	0.61(NS)
Severity of injury	2.40	2	0.30(NS)
Number of operations	5.27	4	0.26(NS)
Length of treatment	53.65	4	0.0001
Outcome at settlement	106.60	1	0.0001
Time to settlement	17.24	4	0.01
Damages	17.97	3	0.001
Head injury	2.42	1	0.12(NS)
Back/spinal injury	8.44	1	0.01
Psychological problem	14.92	1	0.0001
Labour market conditions	13.19	2	0.01

NS = not significant

*** The tables on which this summary is based are located in Appendix 3E**

hypothesis is rejected for the variables Age group, Occupational skill level, Length of medical treatment, Time between accident and settlement, Amount of damages received, Presence/absence of a back or spinal injury, Presence/absence of psychological problems and Regional labour market conditions. As was found in the preceding analysis of employment outcome at settlement, therefore, return to work within 12 months of injury is associated with membership of younger age groups, professional/intermediate and skilled manual occupational skill levels (but not other non-manual occupations), shorter periods of medical treatment, shorter intervals between accident and settlement, damages of less than £10,000, the absence of back or spinal injuries and

psychological problems and regional labour markets with low unemployment.

For this analysis, however, two other results were reversed. Firstly, whereas there was a statistically significant difference between the proportions of EL and motor claimants who had returned to work by settlement, there is no such difference between them at only 12 months after injury. This suggests that proportionately more motor claimants than EL claimants return to work between one year post-injury and settlement. Secondly, although no statistically significant difference was found between the proportions of male and female claimants who had returned to work by settlement, this analysis reveals that proportionately fewer women than men return to work within 12 months of injury.

Development of a Vocational Rehabilitation Index

That so many variables known to be associated with employment outcome at settlement also differentiated between claimants who were in or out of employment one year after injury suggested that it might be possible to develop a scaled index of potential to benefit from vocational rehabilitation. When applied to cases who had not returned to employment within 12 months, such an index would identify claimants who might be helped to do so if they received appropriate advice or assistance. Further work to develop an index of this kind therefore was undertaken. The Vocational Rehabilitation (VR) Index, reproduced in Figure 5, is the outcome of such work.

Construction of the VR Index was guided by several considerations. For instance, it was recognised that its potential practical value

Figure 5: Vocational Rehabilitation Index

Variable	Number of cases	In employment at settlement (%)	Index score
Age group			
16 to 30 years	66	76	**1**
31 to 40 years	44	61	**2**
41 to 50 years	43	56	**3**
51+ years	41	29	**4**
Sex			
Male	164	60	**1**
Female	30	47	**2**
Occupation			
Professional/intermediate	26	81	**1**
Skilled manual	26	70	**2**
Semi-skilled manual	72	65	**3**
Other non-manual	33	46	**4**
Unskilled manual	37	27	**5**
Actual or Predicted **Length of treatment**			
Under 6 months	51	80	**1**
6 to 12 months	43	70	**2**
13 to 18 months	35	60	**3**
18+ months	65	32	**4**
Labour market conditions			
Low unemployment	67	73	**1**
Medium unemployment	60	60	**2**
High unemployment	67	42	**3**
Spinal injury			
None	151	66	**1**
Whiplash, simple fracture	22	50	**2**
Lumbar disc lesion, strain	21	14	**3**
Psychological problem			
None	149	68	**1**
Traumatic neurosis	22	41	**2**
Personality change/cognitive deficit/ functional overlay/ poor motivation	23	9	**3**

would be enhanced if it assumed a form that could be administered quickly and routinely by insurance company claims personnel. Ideally, therefore, it needed to be brief and based on information which is available in personal injury claims files within the first year of accidents being reported or which could be obtained by insurers during that period.

This stipulation meant that some variables which predicted outcome at settlement, including Time off work, Time from accident to settlement and Amount of damages could not be considered for inclusion in the Index. In view of the evidence from univariate analysis that the Number of injuries or impairments received did not yield statistically significant differences between claimants who were in employment and those who were not either at 12 months or at settlement, it was also decided to omit this variable from consideration. Severity of injury, Number of operative procedures and Presence/absence of head injury were excluded for the same reason.

Fortunately, in the case of Time off work, an obvious alternative was available in the Length of treatment variable, with which it was correlated at a statistically significant level ($r = .61$, 192 d.f., $p < 0.001$). Presence/absence of psychological problems and Regional labour market conditions were retained from the prediction model of outcome at settlement, and four other variables were added. Three of the new variables - Age group, Occupational skill level and Presence/absence of back or spinal injury - discriminated at a statistically significant level between claimants who were in work and those were were not, both at 12 months and at settlement. The fourth, Sex, was included because there was a statistically significant

difference between males and females at 12 months.

Each of the seven variables selected for inclusion in the VR Index was treated as a simple ordinal scale for scoring purposes, with the value of constituent items determined by the percentage of personal injury claimants represented by that item who were in employment at settlement. As Figure 5 confirms, four variables - Age group, Sex, Length of treatment, and Labour market conditions - were graded along similar lines to those adopted in the stepwise logistic regression analysis. Scoring of the other three variables, however, involved some changes. In the case of Occupational skill level, it was found that the lower of the two non-manual categories had a poorer rate of return to work than both skilled manual and semi-skilled manual workers, and this was taken into consideration when scaling this variable. In the other two cases, re-examination of the data suggested that they could be converted from binary variables into slightly more refined, three point scales. Scaling of these two variables therefore reflects the different rates of return to work that were found between personal injury claimants who had whiplash injuries or uncomplicated vertebral fractures and those who had low back injuries, and between claimants with post-traumatic or "accident" neurosis and those with more enduring or more serious psychological problems like personality change, pronounced cognitive deficits, functional overlay or poor motivation.

A Vocational Rehabilitation Index score was computed for each of the 194 subjects by summing their scores on each variable. Individual scores ranged from seven (the minimum) to 22 (out of a possible maximum of 24), with a median of 14. The distribution of individual

scores is shown in Figure 6 The mean for all subjects was 13.57, with a standard deviation of 3.17. Table 39 reports the item - Index correlations. The square of each of these values x 100 is a measure of the proportion of the variance in the total Index score that each

Table 39: Contribution of each item to the total VR Index score

Item	Item-Index correlation	r^2 x 100
Age	0.530	28.1
Sex	0.212	4.5
Occupation	0.599	35.9
Length of treatment	0.535	28.6
Back/spinal injury	0.557	31.0
Psychological problem	0.380	14.4
Labour market conditions	0.476	22.7
Total		165.2

item contributes. The sum of these values is 165.2 per cent, rather than 100%, indicating that there is a small measure of overlap (intercorrelation) between items. Split-half reliability of the Index for the 194 cases is 0.47 (using the Spearman-Brown "prophecy" formula) and the coefficient alpha value is 0.43.

Table 40 reports the percentages of claimants with different VR Index scores who were in employment 12 months after injury and at settlement. These data are indicative of its face validity. Evidence of concurrent validity is provided by comparisons of those claimants who were in employment or not in employment at 12 months (Figure 7) and at settlement (Figure 8). Statistical analysis, using t tests, suggests rejection of the null hypothesis in both instances ($t = 10.515$, 192 d.f., $p < 0.0001$ for return to work within 12 months and $t = 11.589$, 192 d.f., $p < 0.0001$ for return to work by settlement). A final comparison between Index scores assigned to EL

Figure 6: Vocational Rehabilitation Index scores of 194 personal injury claimants

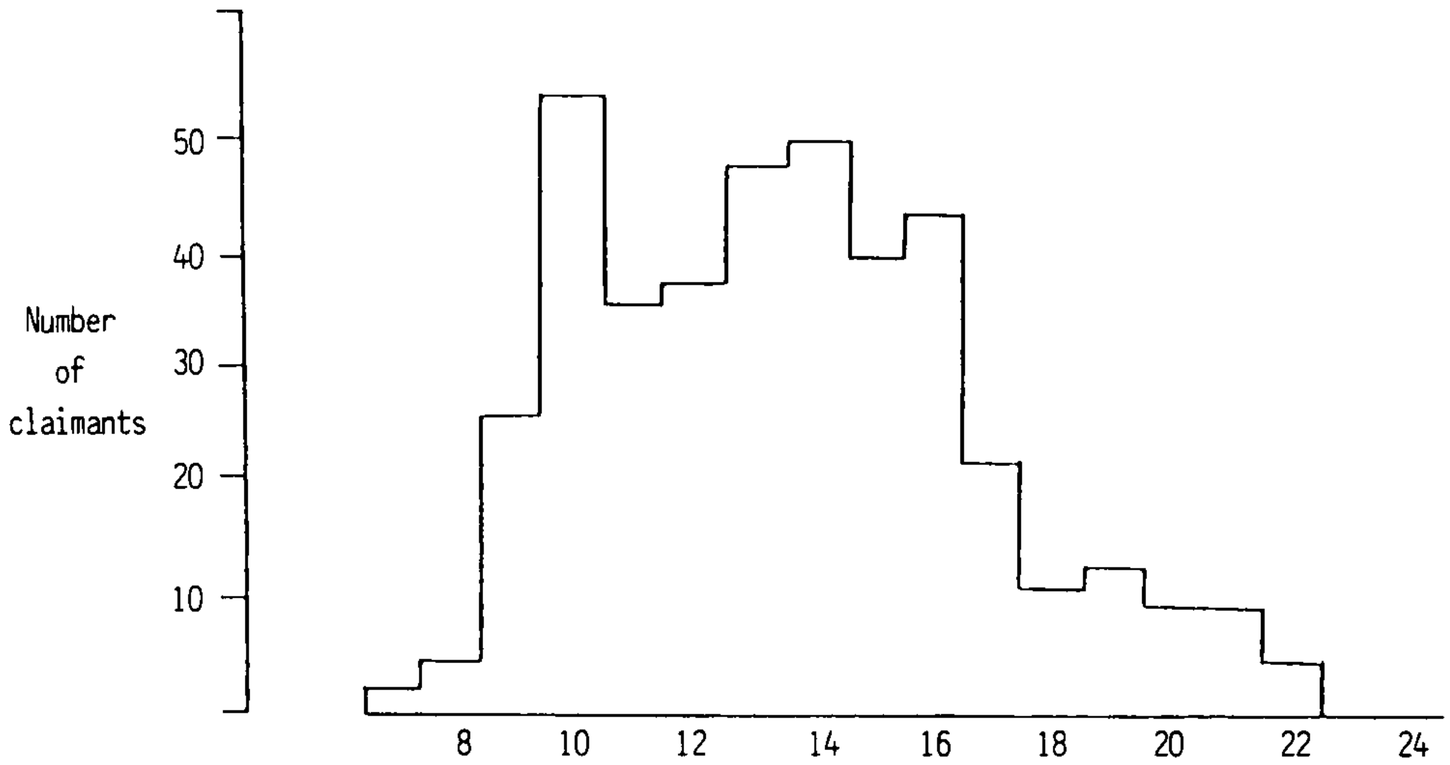


Table 40: Index scores and employment status of 194 personal injury claimants at 12 months and at settlement

		Percentage in employment	
Index score	Number	At 12 months	At settlement
7 to 11	58	86	97
12 or 13	41	59	71
14 or 15	43	33	47
16 or 17	31	10	23
18 to 22	21	5	5
Total	194		

Figure 7: Index scores of claimants in employment or not in employment within 12 months of injury

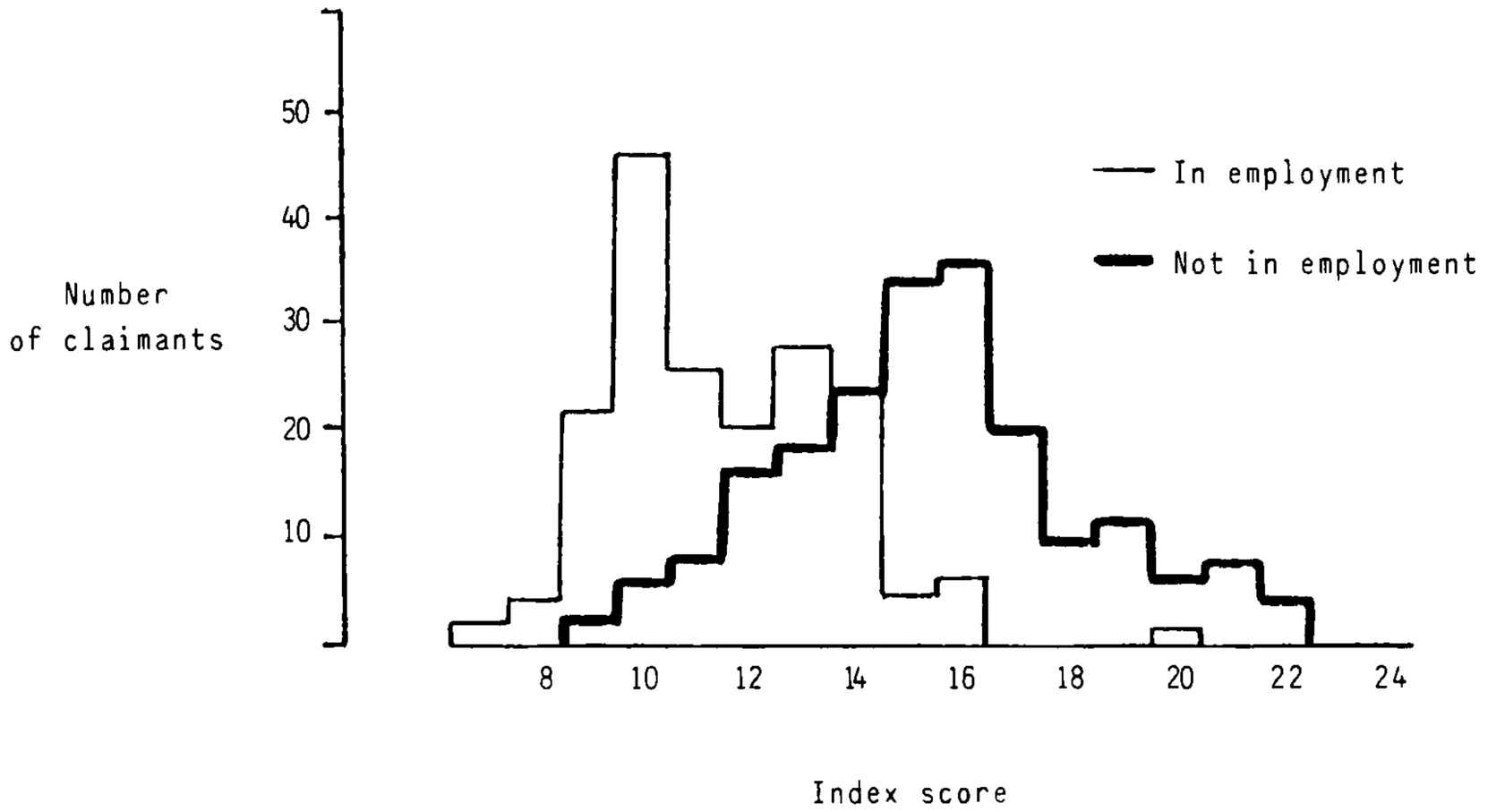
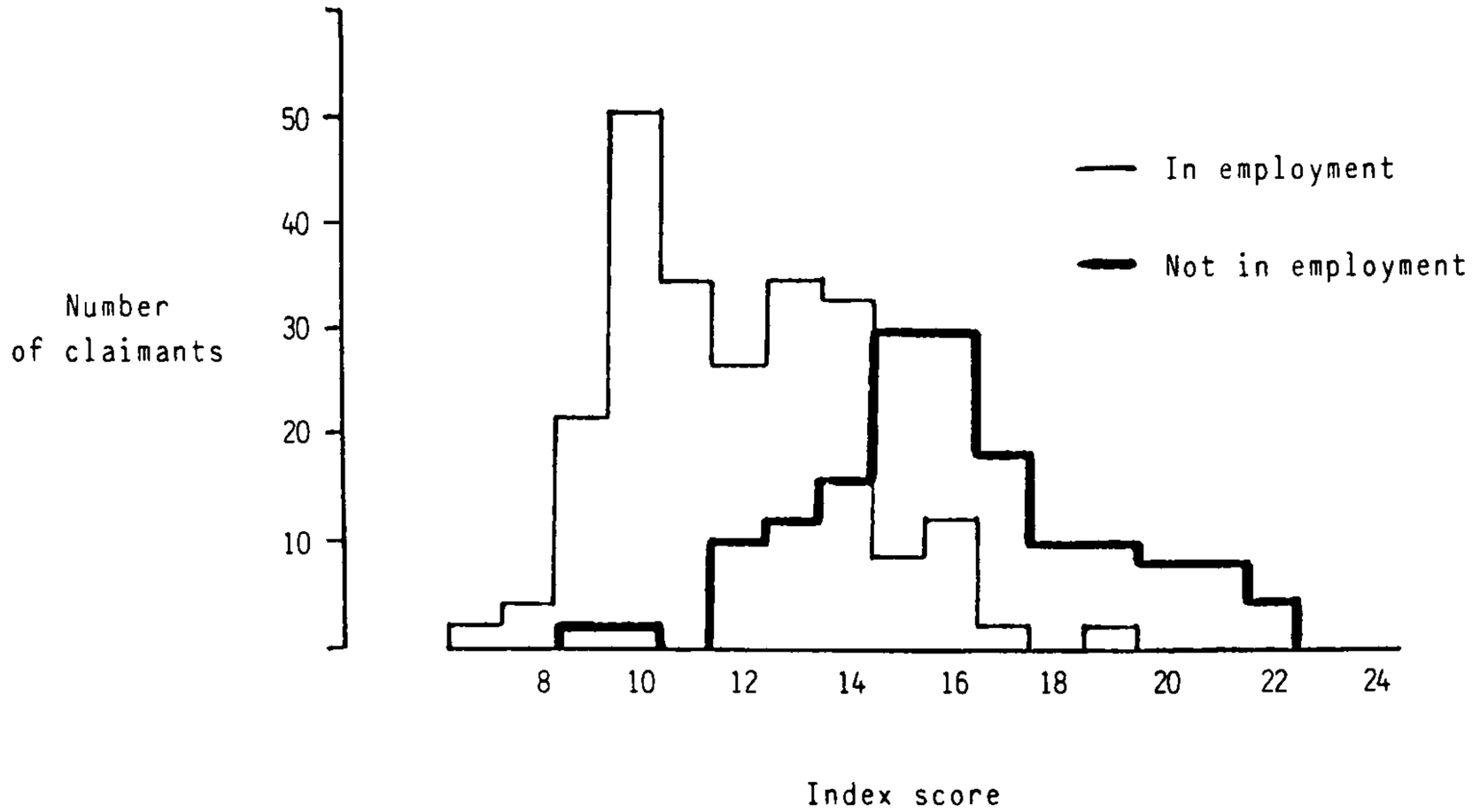


Figure 8: Index scores of claimants in employment or not in employment by settlement



claimants and motor claimants furnished further, less direct evidence of concurrent validity. VR Index scores for the 93 EL claimants (mean 14.27, standard deviation 3.21), of whom only half returned to work by settlement, were significantly higher than those obtained by the 101 motor claimants (mean 12.92, standard deviation 3.01), of whom three-quarters were back in employment before settlement ($t = 3.020$, 192 d.f., $p < 0.01$).

Interpreting the Vocational Rehabilitation Index

Subject to some important methodological caveats which are addressed in the concluding section, it would seem that the VR Index may have considerable potential as a comparatively simple and easily administered device to identify at a relatively early stage in the negotiation of personal injury claims those claimants whose return to work on completion of medical treatment might be assisted by referral to appropriate vocational rehabilitation services. It is also possible that VR Index scores may help to indicate the kind of rehabilitative assistance required in particular cases. This additional potential can be illustrated by examining more closely what happened to claimants in each of four VR Index score bands. For this purpose, scores of 7 to 11 are treated as the lower range; scores of 12 to 14 as the lower middle range, scores of 15 to 17 as the upper middle range and scores of 18 or more as the upper range.

Table 41 summarises the results of chi square tests between the groups of claimants whose VR Index scores fell within each of these four ranges. The detailed tables on which the summary is based are located in Appendix 3F. Results indicate acceptance of the null hypothesis for the variables Number of injuries or impairments, Number of

operations, Amount of damages and Presence/absence of a head injury. In the case of all other variables, the results of statistical analysis suggest rejection of the null hypothesis of no difference between claimants with differing VR Index scores. This section concludes with a description of the main characteristics of claimants in each of the four VR Index score ranges which also aims to highlight their main requirements for vocational rehabilitation and the most relevant vocational objectives for each group. Some of these differences are summarised in Figure 9.

Table 41: Comparison of claimants with different VR Index scores - summary*

Variable	Chi square	d.f.	p ≤
Age	63.77	9	0.0001
Sex	17.02	3	0.001
Occupation	79.74	12	0.0001
Claim	8.59	3	0.05
Number of injuries	9.88	6	0.13(NS)
Severity of injury	25.59	6	0.001
Number of operations	9.86	6	0.13(NS)
Length of treatment	64.84	9	0.0001
Period off work	90.17	6	0.0001
Time to settlement	26.24	9	0.01
Damages	12.12	9	0.21(NS)
Head injury	6.41	3	0.09(NS)
Back/spinal injury	40.10	3	0.0001
Psychological problem	52.53	3	0.0001
Labour market conditions	29.22	6	0.0001

NS = not significant

*** The tables on which this summary is based are located in Appendix 3F**

Lower range (7 to 11): The 24 EL and 34 motor claimants with VR Index scores in this band, representing 30 per cent of all personal injury claimants, included relatively high proportions of males, younger people, those who worked in professional/intermediate or skilled manual occupations, and those who received severe injuries, mostly

Figure 9: Vocational rehabilitation requirements and vocational objectives

VR Index score range	Number of cases	Percentage in employment		Vocational rehabilitation requirements	Vocational objective
		At 12 months	At settlement		
Lower (7 to 11)	58	86	97	Very few, possibly some need for information or advice	Mostly achieved, otherwise placement in open employment
Lower middle (12 to 14)	65	45	68	Information, advice, vocational guidance, counselling, job modification	Early placement in open employment
Upper middle (15 to 17)	50	10	24	Counselling, occupational assessment, employment rehabilitation, training or retraining, special rehabilitation programmes, job modification	Placement in open employment after counselling, assessment, rehabilitation or training
Upper (18 to 24)	21	5	5	Specialised clinical, behavioural and social rehabilitation programmes	Placement in part-time, subsidised, sheltered or diversionary employment

fractures. As 86 per cent returned to work within a year of injury; and 97 per cent returned to work before settlement, they comprise a group of claimants with minimal requirements for vocational rehabilitation or resettlement services. No psychological problems were recorded in this group and the four claimants with whiplash injuries who belonged to this group clearly were not deterred or prevented from resuming their employment quite soon after injury.

The two claimants in this subgroup who had not returned to work before settlement may be of interest. Both were trained mechanics in their 20s (although no particular significance should be attached to these facts). One received devastatingly severe injuries in a motorcycle accident which required amputation of the lower third of the right leg. While he was unable to return to his pre-accident employment as an HGV driver, on recovery his employers redeployed him on semi-sedentary packing work. He remained employed in this capacity for about four months but found the work boring and frustrating. His reaction eventually led to termination of his employment, so that, at settlement, he had been out of work for over a year while hoping for, but trying unsuccessfully to obtain, alternative employment as a mechanic. In the other case, the claimant received a compound, severely comminuted fracture of the head, neck and upper shaft of the left humerus while a rear seat passenger in a car that was involved in a multiple vehicle accident. After the accident, the car hire company for which he worked made him redundant. While his fracture took some time to unite, with the healing process complicated and prolonged by discharging sinuses and periodic extrusion of fragments of bone, eventually he made a good recovery. His residual disability was comparatively slight and was considered to restrict him only from

lifting very heavy weights above shoulder level. Despite this, and even though he resided in an area of low unemployment, he was unable to obtain alternative employment before settlement.

Lower middle range (12 to 14): The 26 EL and 39 motor claimants (33 per cent of the sample) who comprised this group also included higher proportions of younger claimants, people employed in professional/intermediate, skilled manual or semi-skilled manual occupations and who also received comparatively severe injuries. Just over half of this group (55 per cent) returned to work within a year and two-thirds (68 per cent) had returned to work before settlement. Group members included about two thirds of all claimants who were noted to suffer post-traumatic neurosis, a condition which normally was treated successfully by their General Practitioners. They included about two-thirds of all patients with relatively minor spinal injuries (whiplash and uncomplicated vertebral fractures), which were a frequent cause of anxiety. Given that a third of this group were still not in employment at settlement, they have a clearly unmet need for vocational rehabilitation. The nature of their problems suggests that most of their rehabilitation needs could be met by counselling or other forms of advice and guidance, involving their employers wherever possible, with a view to placement in full-time employment on the open labour market.

Upper middle range (15 to 17): The 28 EL and 22 motor claimants with VR Index scores in this range accounted for approximately one quarter (26 per cent) of the sample. They included a disproportionately high number of female claimants, older people and persons employed in low level non-manual ("white collar") and unskilled occupations with

moderately severe or severe injuries or impairments. Only one in 10 members of this group returned to work within a year of injury, rising to just a quarter (24 per cent) who were in employment at settlement. This group included approximately one half of the claimants who were noted to have relatively severe psychological problems and a similar proportion of all claimants with low back pain problems - although over 50 per cent of the group as a whole were troubled by neither condition. The group also included several members who resigned or whose employment was terminated in the period after injury.

This predominantly poorly skilled and unemployed group has a variety of vocational rehabilitation needs. Some might be met by counselling and assistance with finding alternative employment. In the majority of cases, though, their needs would seem to be for occupational assessment, employment rehabilitation courses, training for a new occupation and, in some instances, more specialised behavioural, clinical or social rehabilitation programmes. In almost every case, however, the ultimate vocational objective for members of this group should also be full-time, competitive employment on the open labour market.

Upper range (18 to 22): This is the smallest group, accounting for the remaining 11 per cent of the sample. Its members included 15 EL claimants and 6 motor claimants. The former included 11 mostly elderly and unskilled claimants with apparently minor injuries or impairments of the lumbar spine, histories of chronic pain and suspected functional overlay. The other four EL claimants in this group had been seriously injured or severely impaired and their residual physical or psychological disabilities rendered them unfit

for employment under competitive conditions. The six motor claimants included two cases of whiplash injuries in which functional overlay was also suspected and four cases whose severe residual physical or psychological disabilities also rendered them unfit for employment in the open labour market.

Not surprisingly, only one member of this group, an elderly builder's labourer who suffered from contact dermatitis, returned to work within a year of notification of his claim. However, a recurrence of his dermatitis made it necessary for him to leave his employment and he was therefore unemployed at settlement. One other member of this group did return to work later than one year after injury but before settlement. In this instance, the person involved was a 60 years old storeman who developed low back pain after slipping when unloading a delivery vehicle. He returned to work nearly three years after injury, but to a lighter job which did not entail lifting or carrying heavy weights. While he also had a history of heart disease, and while functional overlay was suspected at some stage in his treatment, it was hoped that he would be able to carry on in this lighter capacity until retirement.

As suggested by these examples and the non-return to work at any stage before settlement of all other members, it is quite unlikely that members of this group would respond positively to conventional vocational rehabilitation measures. It is possible that they could be helped by specially devised rehabilitation programmes dealing specifically with chronic pain or the particular psychological problems they experienced. But, even if such programmes were successful, it is doubtful if members of this group would succeed in

obtaining employment in the open labour market. In their case, a more realistic objective of vocational rehabilitation would be to secure part-time or subsidised employment, (under, for example, the Sheltered Placement Scheme), a place in a sheltered workshop, or, for the most severely disabled, even less demanding diversionary occupation.

SUMMARY AND CONCLUSIONS

This Chapter reports the development, using stepwise logistic regression on data obtained from insurance company files on 194 personal injury claimants, of a model to predict employment outcome at settlement. An identical model, incorporating five terms, was produced by two computational procedures. The model suggested that return to work by settlement was associated with short periods off work following injury; absence of psychological problems; low unemployment in the local labour market; increased time between accident and settlement, permitting more opportunity to resume employment; and more rather than fewer injuries (a variable which may reflect other interactions and effects in the data). This model met formal goodness-of-fit statistical requirements. It also fitted original data well. Its predictive accuracy was such that 93 per cent of claimants in employment at settlement were predicted to have that status and 95 per cent of claimants who were not in employment were also classified correctly. In linking temporal, personal, procedural, economic (social structural) and, to a less obvious extent, clinical variables together in a single equation, the model underlines the multidimensionality of the problem.

Evidence that time off work was the most powerful predictor of outcome at settlement, and also that four-fifths of all claimants who returned

to work before settlement did so within 12 months, stimulated a further stage of analysis. This aimed to determine if it was possible, using information that is available routinely in personal injury claims files, to distinguish between claimants who returned to work within a year of injury from those who did so later or not at all. Results from univariate comparisons of claimants in each of these categories formed the basis of a Vocational Rehabilitation (VR) Index, constructed in accordance with basic psychometric principles.

It was found that the VR Index, comprising seven ordinally scaled variables, discriminated at a statistically significant level between personal injury claimants who were in employment or not in employment, both 12 months after injury and at settlement. It was also found that it discriminated between two groups of claimants who were known to have different rates of return to work. These findings suggest that VR Index scores of personal injury claimants who have not returned to work 12 months after injury, or possibly at some other specified point in time, could be used both specifically to identify those whose return to work might be assisted by referral to appropriate vocational rehabilitation services and more generally to indicate the type of help they may require. A preliminary examination of the characteristics and experiences of claimants in four graded Index score bands indicates the feasibility of such potential applications.

Because the work reported in this Chapter represents a first attempt to solve the two technical problems addressed, a note of caution is in order. At this stage, the technical findings almost certainly should be regarded as illustrating the potential of the methodology rather than as definitive outcomes. For instance, the VR Index undoubtedly

is capable of further refinement during which weighted or interval scaling or more refined variables might be tried out. New work would also make it possible to try out some new variables including, for example, those which measure income replacement and claimants' attitudes to being injured. There is also an outstanding need for final versions of both the prediction model and the VR Index to be evaluated prospectively(4). However, even though further research may be needed to achieve such technical refinements, it should not be overlooked that this work has already generated some important substantive conclusions which also merit reporting.

Construction of the data collection instrument for this work was guided by a review of previous research literature on variables associated with return to work after illness or injury. Although this exercise was limited by the nature of information available routinely in personal injury claims files, some results enable an assessment to be made of the extent to which return to work amongst personal injury claimants is or is not associated with variables which have been found to influence return to work in other studies. Findings from this study indicate that, at the level of univariate analysis, return to work is associated with younger age groups; with professional/intermediate, skilled manual and semi-skilled manual occupations (but not with lower level non-manual or unskilled manual occupations); with shorter periods of medical treatment; with shorter periods away from work after injury; with shorter periods between accident and settlement; with damages totalling less than £10,000; with the absence of psychological problems or back or spinal injuries and with low levels of unemployment in local labour markets. Contrary to some other studies, however, there was no difference at settlement

between males and females, although fewer women than men were back at work a year after injury. Return to work was not associated with the presence or absence of a head injury(5), with the number of injuries or impairments, the severity of main injuries or impairments or the number of operative procedures undergone.

Some other findings are of interest because they highlight the extent to which personal injury claimants as a group may differ from the subjects of many, if not most, other studies of accident victims, which have tended to concentrate on workmen's compensation claimants, on patients with low back problems or on patients with suspected compensation neurosis. For example, while both EL and motor claimants included small proportions with lumbar and cervical strains (16 and 8 per cent, respectively) and/or who were suspected of malingering, poor motivation or functional overlay(13 and 8 per cent, respectively), most personal injury claimants did not have these characteristics. The relatively low incidence of such problems amongst personal injury claimants therefore suggests that the conclusions from most other studies of accident victims (or professional speculations based on such findings) may not be generalisable to more than a relatively small proportion of all cases in which employers' liability or third party motor claims are made.

The general finding from both univariate and multivariate analyses that, with the exception of length of treatment, clinical variables are poor predictors of vocational outcome is not an altogether unexpected finding. Other studies have reached similar conclusions, including, it may be recalled, studies by Harris et al.(6), who found that degree of residual disability was not a predictor of return to

work, and Sheikh(7) who found that severity of injury was not a predictor of return to work. Such conclusions may illustrate two points, one concerning the effectiveness of medical treatment and the other concerning the limitations of medical management of disability in the later stages of treatment, when return to work is being considered.

For instance, while inevitably there were some cases in which complications arose in the medical treatment of the personal injury claimants included in this study, and one case in which negligence was suspected but not proven on investigation, there was generally every indication that claimants received a high standard of treatment. Its general effectiveness can be judged by the relatively infrequent occurrence of severe residual disabilities requiring aids or assistance amongst these mainly severely or more seriously injured patients. High standards of care and the effectiveness of treatment may explain, at least in part, why most clinical variables were found to be such poor predictors of longer-term outcomes.

Length of treatment, however, was found to be associated with outcome, with longer periods of treatment associated with low rates of return to work. While it was also correlated at a statistically significant level with the number of operations ($r = .40$, 192 d.f., $p < 0.001$), suggesting one of the reasons for delay, it did not correlate with any other clinical variable. Other reasons for the association between length of treatment and low rates of return to work may therefore include unnecessary delay in discharging patients from treatment or, more probably, lack of attention to vocational aspects during medical treatment and lack of involvement with, or onward referral to, other

professions, agencies or services which might assist with vocational rehabilitation and resettlement. If so, results of this research may indicate that some essentially non-clinical aspects of medical management of disability may need to be changed if more personal injury claimants are to be helped to return to work or to do so sooner than at present.

Results from this study lend support to one other general conclusion of both statistical and practical significance. It is that time away from work is outstandingly the most significant determinant of employment outcome. This is not a new finding; similar results have been found in other research. For example, Harris et al. found that labour market disadvantage on recovery from illness or injury was most marked amongst patients who had experienced a prolonged absence from work(8). Hester et al. also examined the relationship between time off work and return to work following disablement(9). In a large scale study of patients passing through the American disability system, they found that, while some took as long as 11 years before returning to work, 86 per cent of those who re-entered the labour market after illness or injury did so within two years. They also found that seriously injured accident victims, of whom 78 per cent returned to work, were twice as likely to make this transition as patients with either progressive illnesses or disabilities (38 per cent) or serious acute illness (32 per cent)(10).

It is relevant that the authors of both of these studies considered it necessary to draw attention to the extent to which time away from work may be associated with the absence of effective vocational rehabilitation policies and low rates of referral to relevant

vocational rehabilitation services. This study has identified a two year interval, on average, between completion of medical treatment and settlement of claims. It has also drawn attention to the extremely low rates of referral of personal injury claimants to vocational rehabilitation and indeed to other specialised rehabilitation services. The findings from this and other studies concerning such missed opportunities, and the critical importance of time away from work as the singly most important determinant of employment outcome, therefore point to the desirability of associating medical treatment more directly with new initiatives, based on the principle of early intervention, to assist the vocational rehabilitation and return to work of personal injury claimants. The final Chapter will outline some ways in which this objective might be achieved.

CHAPTER SEVEN

Medicolegal Reporting on Personal Injury Claimants

INTRODUCTION

It was noted earlier that, even if new initiatives are taken to assist the rehabilitation and resettlement of some personal injury claimants, the medical profession is bound almost certainly to remain a main supplier of occupationally relevant advice and information about such patients. For this reason, it was concluded that a good case could be made for an appraisal of how well doctors perform this essential but previously unevaluated task, with a view to identifying what scope, if any, exists to enhance its performance.

This Chapter reports results from two evaluative studies of medicolegal reporting on personal injury claimants. The first examined compliance with published guidance on points to be covered in medical reports prepared for medicolegal purposes. The second study comprised a content analysis to determine the amount of attention devoted to reporting selected clinical and non-clinical information and to examine in detail the coverage in medicolegal reports of occupational information, residual disability, employment handicap, requirements for rehabilitation services and psychological problems. Both studies were based on the same series of 602 reports written by 388 consultants and 12 General Practitioners on representative samples of 94 EL claimants and 109 motor claimants. The procedures followed

were described in detail in Chapter Four.

COMPLIANCE WITH PUBLISHED GUIDANCE ON MEDICOLEGAL REPORTING

Compliance with published guidance on medicolegal reporting was assessed by recording the frequency with which the report/s that individual consultants had prepared on each EL or motor claimant sample member included references to each of 28 topics. These topics had been identified by Paul(1) as the "essentials" of medicolegal reporting, without attention to which any report, irrespective of the reason for its request, would not fulfil its principle objective - namely provision of sufficiently detailed information on all medical problems to enable the recipient to form a well informed and balanced appraisal on which to base future actions or decisions.

Rates of compliance with this guidance in the medicolegal reports prepared on 94 EL and 109 motor claimants are reported in Table 42. The table also records the results of t tests of proportions to test, for each medicolegal reporting topic, a null hypothesis of no difference between rates of compliance in reporting on the two samples. Statistical analysis suggests rejection of the null hypothesis in only four instances. Significantly lower proportions of reports on motor claimants did not give their ages (or dates of birth) or include consultants' opinions on the consistency between the incident, patients' complaints and findings from medical examination. Significantly higher proportions of reports on motor claimants, however, included information about their marital status and their hobbies or social activities.

While there is no obvious reason why there should be a difference in

Table 42: Consultants' compliance with published guidance on medicolegal reporting

Topic to be included in medicolegal report	Frequency of compliance: EL claimants N	EL claimants %	Motor claimants N	Motor claimants %	z	p ≤
Identification						
1. Recipient of report	97	57	139	59	0.80	0.21
2. Patient's name	171	100	229	100	-	-
3. Patient's address	160	94	209	91	0.85	0.20
4. Patient's age	137	80	165	72	1.85	0.05
5. Patient's occupation	133	78	163	71	1.49	0.07
6. Patient's marital status	42	25	107	47	4.54	0.0001
7. Patient's hobbies	31	18	72	31	3.01	0.01
8. Patient's social history	9	5	15	7	0.54	0.30
9. Consultant's name	171	100	229	100	-	-
10. Consultant's qualifications	150	88	200	87	0.12	0.45
11. Consultant's appointments	145	85	194	85	0.02	0.49
12. Consultant's experience	3	2	1	1	1.31	0.10
Medical examination						
13. Date of examination	166	97	218	95	0.95	0.17
14. Place of examination	153	89	193	84	1.50	0.07
15. Duration of examination	4	2	1	1	1.19	0.12
16. Patient's consent	3	2	6	3	0.58	0.28
Medical history						
17. Patient's medical history	91	53	105	45	1.46	0.07
Incident and treatment						
18. Account of incident	165	96	223	97	0.52	0.30
19. Immediate effects	166	97	220	96	0.54	0.29
20. Rate and state of recovery	166	97	223	97	0.18	0.42
21. Treatment received	166	97	218	95	0.95	0.17
22. Present complaints	165	96	220	96	0.22	0.41
Examination findings						
23. General examination	24	14	28	12	0.53	0.30
24. Special examination	170	99	224	98	1.30	0.10
25. Special investigations	83	49	93	41	1.58	0.06
Opinion						
26. Consistency between incident, complaints and findings	83	49	68	29	3.85	0.0001
27. Cause of conditions found	138	81	192	84	0.82	0.21
28. Prognosis	165	96	215	94	1.18	0.12

Base: 167 consultants and 4 general practitioners reporting on 94 EL claimants and 221 consultants and 8 general practitioners reporting on 109 motor claimants

rates of compliance with regard to reporting claimants' ages, it may be possible to explain why the other differences were found. In the case of marital status and hobbies or social activities there are relatively straightforward explanations. They are that motor claimants included a higher proportion of females whose marital status was given indirectly in reported titles (ie Mrs, Ms, Miss), and that the effect of scarring or disfigurement on enjoyment of social activities was mentioned much more frequently in medical reports on female claimants than it was for males. Different rates of compliance in expressing opinions on the consistency between the incident, patients' complaints and examination findings are less easy to explain. However, the difference may reflect consultants' awareness of the problems that sometimes occur in establishing liability for work place accidents and/or the frequently more obvious relationship between the causes and effects of road traffic accidents which possibly are considered not to merit mention. These variations in reporting on the two groups of claimants may have some importance, but they should not be allowed to detract from the more general finding of little or no difference in consultants' compliance with published guidance in reports prepared on personal injury claimants, irrespective of the circumstances in which they were injured.

Of much greater interest in this context is the wide variation in rates of compliance with respect to reporting on particular topics. At one end of the scale there are topics that were covered in well over 90 per cent of consultants' reporting on individual claimants (including only two - the name of the consultant and the name of the patient - with compliance rates of 100 per cent). As might be expected, with the exception of patients' addresses and the date of

examination, other topics with high rates of compliance were clinical, covering the incident, its immediate effects, rate and state of recovery, treatment between the accident and date of examination, patients' complaints when seen for examination, the findings on examination and the prognosis. Other topics covered almost as frequently, by between 80 and 90 per cent of all consultants, included their own qualifications and appointments (listed on letterheads or beneath signatures), the place of examination (also shown on letterheads) and their views on the cause of conditions found on examination.

More surprisingly from a clinical perspective, are the low rates of compliance with regard to reporting that a medical history had been taken ("nil" or "none relevant" were accepted as meeting this criterion), with such references missing from approximately 50 per cent of consultants' reports, and the even lower level of compliance with regard to reporting that a general medical examination had been undertaken. There is a clear implication that these activities are not undertaken in the majority of instances when personal injury claimants are examined for medicolegal purposes. Reports that special investigations (normally X-rays, but occasionally including audiological or eyesight tests or pathology laboratory reports on, for example, blood or urine) had been undertaken need to be treated differently. They are not required in every case and, in the absence of a convention requiring doctors to state when they are not needed, it is difficult to assess compliance on this count.

Other topics with lower rates of compliance fall into two categories. The first concerns reporting conventions with reference to the

inclusion in reports of information about the doctor's experience, the duration of the medical examination on which the report is based and patients' consent, all of which received attention in three per cent or less of consultants' reports on individual claimants. Future guidance may need to take account of consultants' evident reticence to refer to the first two subjects. The low number of references to patients' consent is readily explained by the fact that normally consent is obtained before referral. It is therefore either assumed or indicated in correspondence requesting the medical examination and report.

The second category of topics on which information was frequently not provided in consultants' reports concerned the identity of the patient. Apart from the patient's name, given in every case, and address, missing from consultants' reports on approximately one in 20 EL claimants and one in 10 motor claimants, there were quite marked omissions of potentially relevant personal, social and occupational information. Patients' ages and occupations were not specified by approximately one quarter of the consultants and only one third reported patients' marital status. Patients' hobbies or social activities were referred to in just one quarter of all cases, and references to patients' family circumstances or social history were made even less frequently, by approximately one in every 20 consultants, mainly but not exclusively neurologists or psychiatrists. Apart from patients' names and addresses, which would be known already, it would seem that recipients of medicolegal reports could be much better informed on all of these counts.

This brief examination of compliance with the 28 topics embraced by

Paul's guidance on the essentials of medicolegal reporting suggests two main conclusions(2). Firstly, most consultants' report/s on individual claimants refer to a common core of mainly clinical topics. Where information of this kind is not provided there are usually good reasons for its omission. For example, the report is supplementary to others which already provide the relevant information.

Secondly, while low levels of compliance in reporting on some other topics may be quite acceptable, and need to be taken into consideration in any future guidance to doctors on points to cover in a medicolegal report, there are others whose comparative neglect may hold more significant implications for future practice. This is because, without exception, the neglected topics concern aspects of personal injury claimants' cases in which the most awkward problems associated with negotiation and settlement of claims tend to arise.

Frequently omitted topics include the doctor's views on the consistency between examination findings and the account of the incident viewed against the background of complaints and past medical history; the doctor's views on possible causes of the conditions found on examination; the patient's previous medical history and current health as revealed by general medical examination; and socio-economic information concerning the patient's occupation, personal and social circumstances, hobbies and social activities and family and social history. There would certainly appear to be some scope to seek higher levels of compliance with regard to these comparatively neglected aspects of medicolegal reporting.

If, as Paul maintains, medicolegal reports should enable recipients to

form a well-informed and balanced view in order to decide on future action, it is arguable that the more frequently overlooked items are the most indispensable ones for this purpose. However essential detailed clinical information may be, it is precisely the latter information that helps recipients of medicolegal reports to locate an injured party as a whole person in a relevant temporal, clinical, social and economic context, and hence to reach fair and valid conclusions about such matters as the reasonableness of complaints, how far the accident was responsible for conditions found on examination and the likely effects on patients' abilities in both the short and longer-term to earn a living and to resume pre-accident domestic and leisure pursuits. It is not without interest that, in most instances when recipients seek additional information or clarification of points made in medicolegal reports, their enquiries are addressed to issues of this kind. Future guidance to doctors on medicolegal reporting practice and procedures therefore may need to place greater emphasis on the need to achieve a better balance between clinical and non-clinical aspects of reporting. It should also underline the extent to which this could help to meet more effectively the whole range of recipients' requirements for information and advice.

CONTENT ANALYSIS OF MEDICOLEGAL REPORTS

The general picture

The main points that insurers and other recipients look to medicolegal reports for information or advice are summarised in Figure 10, where they are listed in relation to 13 medicolegal reporting themes. Pilot work on a small sample of reporting on both EL and motor claimants indicated that eight of these themes tended to receive some coverage

Figure 10: Insurers' interests in relation to main medicolegal reporting themes

Medicolegal reporting theme	Insurers' interest
Incident	Contributory liability
Injury or impairment	Detailed account of injury or impairment
Immediate effects of injury	Solatium - general damages for pain and suffering
Treatment/response to treatment	Need for other clinical services Loss of life expectancy
Complaints Medical examination Findings	Discrepancy between complaints and examination findings
Residual disability	Severity and probable permanence of residual disability
Prognosis	Likelihood of further recovery or deterioration; future complications
Handicap	Future loss of earnings Alteration of standing in labour market Future loss of amenity
Medical history	Other contributory factors or possible causes of impairment
Occupation	Loss of earnings Time off work Employment history Nature of job and/or working conditions Return to work in both partial and full capacity Special work requirements
Psychological reaction	Cognitive deficits; behavioural problems; traumatic neurosis; functional overlay
Personal/social circumstances	Special needs regarding, for example, accommodation, mobility or long-term care
Rehabilitation services	Need for or use of services

in most medicolegal reports. The other five received more sporadic attention. Examination of the claims files in which they were located suggested that, with one or two exceptions (for example, employers' statements of claimants' earnings), medicolegal reports were not just the main but often the only source of information on most points of interest to their recipients.

To assess how well medicolegal reporting meets recipients' requirements, a content analysis was undertaken of the 602 medicolegal reports included in the preceding analysis of compliance with published guidance. For this aspect of the study, the focus shifted from the reporting of individual consultants to all the reports on individual claimants that were available to insurers at the time claims were settled, and from the frequency with which particular topics received attention to the amount and content of reporting devoted to the 13 main themes.

The preliminary stage of content analysis involved the identification, using colour coding, of all passages in the medicolegal reports on each claimant which were addressed to each of the 13 main themes and one other which was allocated for miscellaneous information. The number of words devoted to each theme in all reports on each sample member was then counted and expressed as a percentage of the total number of words written on that particular claimant. These procedures revealed the proportion of reporting devoted to each main theme not only for each sample member but also, when averaged out, for the two samples of claimants. It may be of interest to note that the 602 reports contained a total of approximately 530,000 words. The higher number of medicolegal reports requested in relation to motor claimants

resulted in a higher average number of words per case for them (approximately 3,000) as compared with EL claimants (approximately 2,150). There was, however, less of a difference in the average number of words per report on the two samples. On this count, the average for motor claimants was 912 and the average for EL claimants was 834.

Table 43 reports the results of this preliminary stage of analysis. Reference to this table reveals that some two thirds of medicolegal reporting on both groups of claimants was devoted to five essentially clinical themes. Accounts of the incidents in which injuries were received or, for a small proportion of EL claimants, of other circumstances in which impairments originated; descriptions of

Table 43: Proportions of medicolegal reports devoted to coverage of main reporting themes

	EL claimants		Motor claimants	
Main theme	Average(%)*	Number of cases**	Average(%)*	Number of cases**
Description of incident	6	92	5	108
Injury/impairment	6	94	6	109
Treatment and response	19	93	22	109
Patient's complaints	13	93	10	106
Medical examination	23	93	24	109
Disability/outlook	8	90	17	109
Handicap	5	87	3	97
Occupational information	6	90	3	103
Medical history	3	67	2	70
Psychological reaction	2	47	1	41
Personal/social information	1	31	1	50
Rehabilitation	<1	16	<1	8
Miscellaneous observations	7	86	6	95
Total(%)	100		101	
Base (number of cases)		94		109

* Averages for all 94 EL and all 101 motor claimants
** Number of cases in which reporting referred to each theme

injuries or impairments; details of treatments given and patients' response to them; listings of patients' complaints when seen for medical examination and reports of findings from medical examinations, together, comprised exactly two-thirds (67 per cent) of total reporting on both EL and motor claimants. Reports on each case available to the insurance company at the time of settlement, without exception, included at least one - and usually more - description of injuries or impairments received. While reporting on every motor claimant also included an account of treatment and response to treatment and medical examination findings, such details were presented for all but one EL claimant. Descriptions of the incident in which injuries were received were missing for two EL claimants and one motor claimant. All of these predominantly clinical themes were reported in considerable detail and, as far as could be judged, to such a consistently high standard that generally there would appear to be comparatively little scope to improve either the content or quality of these aspects of medicolegal reporting.

The remaining content of medicolegal reports fell into three categories. Firstly, about one fifth of the total (19 per cent for EL claimants; 23 per cent for motor claimants) was devoted to reporting information about residual disability and outlook, occupational information and doctors' views on handicap. On these counts also, relevant information was available in almost every case. Residual disability and outlook were covered in reporting on all motor claimants and missing from the reporting on only four EL claimants. Some occupational information was provided in all but four EL and six motor cases, with references to handicap made just a little less frequently - being omitted from reporting on seven EL and 15 motor

claimants. However, there was a noticeable difference between the two samples as regards the amount of attention given to each of these themes. Reporting on motor claimants included twice as much attention to reporting residual disablement and outlook, presumably reflecting road traffic accident victims' greater susceptibility to severe and/or multiple injuries. In contrast, in reports on the victims of accidents at work, proportionately more attention was paid to occupational information and potential handicap.

Secondly, there were four other main themes - medical history, psychological reaction, personal/social information and rehabilitation - comprising approximately 5 per cent of total reporting, which received not only less extensive but also less frequent coverage. There was no reference at all to medical history in reporting on approximately one third of both EL and motor claimant samples. References to psychological reactions to injury were less frequent, being made in reporting on one half of EL claimants and a little more than one third of motor claimants. Some reference, usually very brief, was made to claimants' personal or family circumstances in a little under one half of the motor claimants' medicolegal reports, but such matters were mentioned in reports on only a third of EL claimants. References to need for rehabilitation or referral to rehabilitation and resettlement services occurred much less frequently. These subjects received attention in reporting on only 16 out of 94 EL claimants and eight out of 109 claimants.

Thirdly, there was a similar small proportion of reporting on both samples devoted to miscellaneous observations. Mostly these concerned arrangements for medical examinations, but sometimes reported other

information including, for example, accounts of procedures that might be followed in future operations on the patient. Reporting on all but eight EL and all but 14 motor claimants included at least one item in this category.

Apart from the last, miscellaneous category, all themes embraced by the final third of medicolegal reporting reflect the wider, mainly non-clinical points of reference that insurers need to bear in mind when making decisions about the settlement of claims. It would appear therefore that such themes are not only less frequently covered by consultants in their reporting on individuals patients, as revealed by the first stage of analysis, but also that the information from all consultants available to insurers at the time of settlement devotes markedly less attention to the discussion of these themes than to the reporting of clinical topics.

Taken together, the two analyses suggest that current medicolegal reporting practices with regard to clinical subjects generally may be relied upon to provide the information that recipients need in order to reach valid conclusions about, for example, the amount to be paid in general damages for pain and suffering or concerning the consistency between claimants complaints and medical examination findings. Less frequent or less extensive coverage of other themes listed in Figure 10, relating to other points of interest to recipients, may mean that current reporting practices do not meet consistently all of their other requirements for information and advice. This possibility was examined in the final stage of analysis, a detailed examination of the content of reporting on residual disability and employment handicap and, in view of results reported in

earlier Chapters, information about claimants' occupations, involvement with rehabilitation services and psychological reactions to injury or impairment.

In each case, all observations on each of these selected main themes in the 602 medical reports on sample members were tape recorded and transcribed. They were then scrutinised and, in each case, subdivided into clusters dealing with common subjects. These procedures were conducted in such a way that it was possible to calculate either the proportion of total reporting on each cluster as a percentage of all coverage on the main theme to which it belonged or the proportion of cases in which particular types of observation were made. The latter procedure was used to weight the selection of examples in the following tables which hopefully convey not only an indication of the types of observation typically made but also the proportion of cases to which each cluster of observations applied. However, as the tables do not take into consideration cases in which no observations were made, it is important to note at the foot of each table the base from which it was constructed.

Coverage of residual disability and outlook

Not surprisingly for patients whose injuries predominantly were of a moderately severe, severe or more serious nature, as measured by the Abbreviated Injury Scale, medicolegal reporting on most sample members included commentary on residual disability. Such comments were included in reports prepared on 90 out of 94 EL claimants and all 109 motor claimants, comprising a total of approximately 70,000 words. Examination of consultants' observations on residual disability disclosed that reporting embraced three general subjects:- expected

permanence of the disability/ies, likelihood of future complications (e.g. osteoarthritis in cases where fractures could affect joints, or risk of epilepsy following head injury) and severity of disability. The first two topics generally appeared to be reported clearly and appropriately, leaving recipients of the medicolegal reports with a good picture of what the future was likely to hold in store for each claimant. In contrast, in many, if not most, cases, coverage of severity of residual disability seemed potentially open to improvement.

Table 44 reports a selection of consultants' observations on the subject of severity of residual disability and outlook. It is the first of six similar tables in this Chapter which aim to provide an illustrative overview of the content of reporting on selected medicolegal reporting themes, and to provide a focus for evaluations of the coverage of each theme. In this example, selection of items is based on the proportion of all commentary reporting whether considerable residual disability, some residual disability or no residual disability was either found on examination and/or expected in the longer-term. As approximately 20 per cent of consultants' comments referred to cases in which considerable disability was expected and approximately 70 per cent of their observations were addressed to cases in which some residual disability was expected, leaving roughly 10 per cent in which no disability was anticipated, the number of examples chosen to illustrate each of these topics is two, seven and one, respectively.

Detailed scrutiny of all reporting on the subject of severity of residual disability revealed that the majority of reports did not

Table 44: Coverage of residual disability and outlook

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1. Considerable residual disability (18%)

a I see no reason to change my opinion as expressed in my earlier report, that is to say, this lady suffered from an extremely severe head injury with permanent neurological sequelae. From an intellectual point of view she remains grossly demented and is incapable of independent existence. She is no longer the person that she was both in mind and intellect and is really unable to string one idea after another. She also has slurring speech. There are severe derangements of eye movements, deafness on her right side and difficulty in swallowing and movements of her tongue. Her unsteadiness is of sufficient severity that she is unable to walk without the aid of a person.

b There is an obvious disability in the loss of the right arm, and in the severe scalping injury, and the arm amputation will rate as an 80 per cent disability in itself. It might be possible at some future date to do further cosmetic surgery to the scalp, though this will not be easy and there is an obvious severe disability of a cosmetic nature. The leg injury should not give any real problems in the long-term. The metal fixation may be removed at a later date.

2. Some residual disability (71%)

a He has the usual limitations of inversion/eversion of the foot and thus he has discomfort on walking on uneven ground as the foot is not fully able to adapt itself to the surface on which he is walking. He will always have restriction of inversion/eversion of the foot. I credit that he still has some tenderness of the pad of the heel but this should wear off in a few months. He has a slight limp but this should virtually disappear.

b I think the fracture will now go on to unite soundly and the pincer grip should therefore eventually become strong again. However, I feel that there will always be some permanent stiffness in the right thumb as a result of the accident and his manual dexterity is therefore permanently impaired to some extent.

c There is a possibility of some improvement over the next year, but even after this time he will be left with some aching on prolonged sitting and after heavy work. His activities will not be restricted but his symptoms would create moderate incovenience. As a result of the injury his neck has been made permanently more vulnerable to any future trauma and there is an increased risk that he will develop some degenerative changes in the cervical spine in later life. These will cause some slight stiffness but should not increase the pain significantly. He will need to continue to take occasional pain killing tablets and there is a slight possibility that he will need periods of physiotherapy in the future. The capsulitis of the left shoulder which was secondary to the neck injury is now resolving well and the residual slight stiffness should correct fully over the next few months.

d (The patient) suffered an extremely severe injury of a crushing nature, sustaining a compound injury of his left foot. The outlook for crushing injuries is always much more gloomy than for normal fractures because so much soft tissue damage is done at the time of the injury and this of course interferes with blood supply to and venous drainage from the injured part. This delays healing and this had been exactly the problem with (the patient). He has had to have skin grafting and in spite of very adequate surgical and medical management, including a recent

operation to remove a neuroma and reshape the great toe, the foot still remains swollen and painful. I expect that there will be considerable improvement over the period of the next two years but this foot will never again be normal.

e (The patient) has made an excellent recovery from his multiple injuries sustained in July 1980. His injuries were serious and he is lucky to have such an excellent range of movement in his right hip and knee. He suffered a serious complication after his first operation called a pulmonary embolus, which was potentially life-threatening, and he was treated by blood anti-coagulants. He underwent a second operation in March 1982 to have the pin and plate removed from the right hip. There were no complications with this second operation. I do not think that this present physical condition will change significantly with time and this report can, therefore, be considered as a final one.

f The situation seems a stable one. (The patient) suffered a severe injury to the left eye in the accident resulting in total loss of vision. As a result, she is experiencing those disabilities commonly described by individuals suddenly rendered one-eyed, namely loss of field of vision to the left hand side and difficulty with judgement of distance and depth. As a young person she will, in my opinion, adapt very quickly to these disabilities as she learns to take extra care and to make due allowance. Her difficulties will, therefore, diminish with the passage of time, although her faculties in respect to judgement of distance and depth will never be entirely normal. She may regain some confidence in this respect and feel able to start driving lessons but it is not possible at this early stage to give a more firm opinion on this point. The blindness of the left eye is permanent and no further developments are to be expected apart from the possible development of a outward squint of the left eye, which is a complication affecting an eye which has become sightless in adult life. This would take place over a period of several years and if allowed to become marked would constitute a severe cosmetic defect, but which will probably be remediable by surgery.

g I think degenerative changes at the intervertebral disc level must have been present prior to any injury and it would appear therefore that his injury has induced and perpetuated pain in a back which previously was not causing him any trouble. I think a period of rest following injury was obligatory. Within a few months the acuteness of his pain had subsided but he was still left with a residue of discomfort and stiffness. This improved with physiotherapy. I think the condition of his back has been stable now for the past two years and I would not expect any significant deterioration to take place in the years ahead..... He will continue to have to look after his back for the rest of his life but this is not insuperably difficult, if he gets into a set routine.

3. No residual disability (11 per cent)

a It is my opinion that (the patient) has long since made a full recovery from her minor head injury and that she has suffered no late complications of the head injury, a view which is supported both by (the patient) herself and by her general practitioner.

Base: Approximately 70,000 words of commentary on 90 EL claimants and 109 motor claimants

← Table 44

specify exactly the degree of functional loss that was anticipated. Almost certainly this reflects the prevailing practice of basing assessments on approximate rules of thumb rather than on standardised assessment procedures. But because clinical judgements are not anchored to formal, objective, functional assessments, they may be of only limited helpfulness to recipients of medicolegal reports. To take just two examples from Table 44, the references to the usual limitations of inversion/eversion of the foot (2a) or impaired manual dexterity (2b) - which are not uncharacteristic - are both capable of being expressed more precisely or even in a quantified form. If this were to be done, it would be much easier to judge the probable effects of disablement on patients' resumption of normal activities. It is widely recognised that knowledge of residual skills and abilities possessed by disabled people is an important pre-requisite of their effective placement in suitable employment. There may therefore be scope to improve this aspect of medicolegal reporting by ensuring, wherever possible, that functional limitations are assessed formally either in hospital or by referral to other agencies or professions who are qualified to undertake this task.

Coverage of occupational information

Apart from claimants' job titles, which were covered in the earlier analysis of compliance, and references to employment handicap, which will be examined separately, consultants' observations on occupational themes comprised four main topics. The first, return to work, was broached in reporting on 85 EL claimants and 101 motor claimants, leaving 9 cases in the former sample and 8 cases in the latter in which no information about return to work was provided. Other occupational topics, however, were covered much less frequently. Some

information about time off work was provided for 43 EL and 61 motor claimants; the nature of jobs or working conditions were described for 17 EL and 15 motor claimants; and reporting on 19 EL and 12 motor claimants included some mention of their employment history.

Return to work: Table 45 reports examples of consultants' comments on claimants' return to work. The examples have been selected from approximately 14,000 words of commentary on this subject, with the selection of items weighted in accordance with different reported outcomes. Return to work was reported in 58 per cent of all cases and is the major cluster. Other references were to claimants who returned to work only to be made redundant (six per cent); who tried to return to work but failed, mainly because they were not yet fully fit (nine per cent); who were fit for work but unemployed (20 per cent); or who were still medically unfit for work (seven per cent), including some who were unlikely to work again. The unemployed category included some claimants who had made repeated efforts to find alternative employment but without success. However, it also included the relatively small proportion (10 per cent) of all claimants in whose cases poor motivation, malingering or functional overlay was suspected.

Time off work, work record and working conditions: Other observations on claimants' occupations comprised the three clusters shown in Table 46. As noted previously, these subjects were discussed much less frequently. Examples in the table have been selected from approximately 8,000 words of commentary on a total of 45 EL claimants and 72 motor claimants. The number of cases in which no information of this kind was reported therefore was quite large. There was also

Table 45: Coverage of return to work

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1. Claimant returned to work (58 per cent)

a He returned to his normal work in June, 1981 and since then he has worked regularly losing no further time.

b At his most recent visit it was recorded that he had returned to heavy work but could not remain at work full-time. It is to (the patient's) credit that he has been able to return to part-time work within six months of the injury.

c Today he tells me that he returned to work at his own job as a lorry driver in January, 1980. He was given time off work to go on attending the Physiotherapy Department on alternate days for the next seven weeks.

d She returned to work in January 1981, subsequently incurring no additional attributable absenteeism or treatment.

e When he returned to work he was given an inside job whereas previously he has been outside.

f He is back at work.

2. Claimant returned to work only to be made redundant (6 per cent)

a He was made redundant together with another 9 or so of his colleagues in September 1981. He has not worked since, though he has tried several times to get a job as a driver.

3. Claimant attempted to return to work but failed (9 per cent)

a He returned to his work six months after the accident but after three days of full duties he found that he could not turn his neck and his back tightened up. The patient returned to his work in May or June, 1981 for three weeks, at first on light duties, but later, when he returned to full duties, the bottom of his back again stiffened up and he could not turn his head. In November, 1981, he again returned to his work for three days but again his pain and stiffness returned.

4. Claimant still unfit for work (7 per cent)

a I do not see any prospect of getting (the patient) back to work, certainly not to his pre-accident work.

5. Claimant unemployed (20 per cent)

a He has not so far gone back to work. He says, however, that he reported for three different jobs but was rejected as being unsuitable for any of them.

b I understand that he has not been able to do any work since the accident. He has not made any attempt to return to work.

Base: Approximately 14,000 words of commentary on 85 EL claimants and 101 motor claimants

Table 46: Coverage of other occupational information

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1. Time off work (63 per cent)

a He told me he was away from work for about six weeks in all. This is the length of time one would expect a patient to be off following such an injury.

b He was away from work for 2 weeks following the accident after which he lost 10 odd days off work.

c As a result of the accident she was off work for 9 months.

d The patient was off work for about six months after this accident. I think this is reasonable in view of the history given and the hospital observance required.

e His various periods of absence from work amounting to over 1 year are (taking all circumstances into consideration) to be regarded as reasonable.

f (The patient) was off work as a teacher until January 81, that is about 3 months altogether, and then has a good work record apart from a few days lost here and there because of headaches.

2. Nature of job, working conditions (19 per cent)

a His work is of a heavy nature and usually done above ground with the help of cradles.

b (The patient) is a trade union official. His job involves long periods of long distance driving. He also has to sit through long union meetings.

3. Work record (18 per cent)

a After leaving school at the age of 14 years, he worked as a milk roundsman and then as a wire machine operator. He served in the army from 1941 to 1946, but was never posted overseas. After leaving the army he was employed as a foreman concreter until 1953 and since then he has been employed by a firm of roofing and building contractors.

b He has been a machine operator for the past 12 to 13 years.

Base: Approximately 8,000 words of commentary on 45 EL claimants and 72 motor claimants

marked variation in reporting standards in relation to different types of impairments. As might be expected, work record and working conditions were reported to very high, detailed standard in EL claims for such non-accidental impairments as work-induced hearing loss or dermatitis. In other instances, as most examples in the table demonstrate, only the most general information was provided. The higher standard of reporting on industrial disease cases reveals a potential that has yet to be matched in other cases. It is certainly arguable that without such improvement and attention to detail in every case, medicolegal reports may not be as helpful as they could be in identifying potential sources of employment handicap.

Coverage of employment handicap

Consultants' comments on employment handicap amounted to some 13,000 words on 77 EL and 83 motor claimants. Table 47 reveals that, for the sample as a whole, they comprised five main clusters. The largest, accounting for approximately one half of all observations, concerned cases in which functional limitations of different kinds were expected to impede work performance. The second largest cluster, accounting for a further quarter, was quite closely related to the first and embraced cases in which consultants were of the opinion that claimants should seek lighter work or alternative employment of a wholly or mainly sedentary nature. Two smaller clusters, each accounting for a further five per cent of cases, also focused on difficulties that claimants might encounter on re-entering the labour market. One, reflecting an awareness on the part of some consultants of the wider implications of the case of Smith v Manchester Corporation, concerned the possible effects of injury on the claimant's standing in the labour market should he/she be obliged to change employer. The other

Table 47: Coverage of employment handicap

1. Functional limitations make work difficult for the claimant (47 per cent)

a He has returned to work as a machine operator, but his firm have been most understanding in providing him with work that it is possible for him to carry out using one good hand and one severely damaged hand. He has been employed on a number of machines all of which can be fairly simply operated and these activities he has managed to carry out satisfactorily. He had lost no time from work since his return and only fell down on one job which required him to operate a spring-loaded release with the damaged hand and this he felt unable to do, though he himself believes that activity in the hand is slowly increasing and that he might even manage this kind of machine in future.

b He is a rather determined man, and I suspect that he will be able to continue with his present work, albeit with some difficulty at times, particularly when doing jobs that involve extending the neck or working with his arms above shoulder level.

c He is unable to crouch and therefore has some difficulty in working at floor level. However, he can kneel to compensate for that.

d He says that with his work as a joiner he is unable to make much use of the contact lens because the period of wearing is then reduced due to the dusty atmosphere, and so he has to perform work without the contact lens and so is a one-eyed person.

e There is continuing epilepsy and the limitations that will impose upon his working life and his social life should be taken into account when settling his claim.

2. Claimant requires lighter or sedentary work (25 per cent)

a I do not think he will be able to return to the heavy duties on the coal face. I think he should be able to continue to do light work of the type that he is doing at the present time, but I do not think that there is any likelihood at all of his being able to return to his pre-accident work as a coal face ripper. He has continuing symptoms and a tendency to instability in both knees. Coal ripping work involves walking up slopes of one in four and very heavy weights. This is clearly impossible for him both now and in the future. However, I think he may be able to come to do work a little heavier than he is doing at the present time, after a few months.

b I am still of the opinion that it would be unreasonable to expect him to return to his former occupation as a plasterer. As I have said before, he can plaster but not quickly enough or for long enough to satisfy any but the most philanthropic employer. It is not through any lack of an endeavour on (the patient's) part but his arm is not strong enough for this occupation, simply a legacy of his injury.

c All this has made employment for her somewhat difficult, but a light job in which she could change positions frequently and in which she would not have to do any heavy lifting should be possible for her.

3. Claimant may experience problems obtaining similar employment elsewhere (5 per cent)

a It is probable that the grip of the left hand and the mobility of the left wrist will never return to normal as a result of this accident. This may well cause difficulties for (the patient) should he have to find alternative work and this has become a possibility during the present industrial recession.

4. Claimant may not return to work or work again (5 per cent)

a He is certainly incapable of working at any job whatsoever, for he would require door-to-door transport to get work, and if he was employed it would have to be at an entirely sedentary activity.

5. No occupational handicap anticipated (18 per cent)

a I do not feel that there is any medical contra-indication to this patient returning to his former employment. His spine is quite strong and, over a period of about two months or so, he should gradually be able to return to heavy physical activities.

b He is managing his normal work without difficulty and has indeed generally returned to all his usual pastimes and occupations.

Base: Approximately 13,000 words of commentary on 77 EL claimants and 83 motor claimants

← Table 47

embraced the small proportion of claimants with severe disabilities who were not expected to return to work for some time, if at all. Altogether, some degree of employment handicap was expected in 80 per cent of all cases in which this subject was addressed. In the other 20 per cent, no employment handicap was expected. There was a difference between EL and motor claimants in this respect in that fewer motor claimants were expected to encounter any kind of employment handicap. Undoubtedly this reflects their more varied occupations, with many more motor claimants than EL claimants employed in non-manual capacities.

As with reporting on other themes, examination of the larger pool of consultants' observations on employment handicap from which Table 47 was constructed suggested that there may be scope for improvement. There are at least three ways in which this objective could be achieved.

Firstly, recommendations for lighter and/or sedentary occupations could be much more specific. They may, in any case, betray a conception of the nature of work, even for unskilled manual workers, which is becoming quickly out-moded as advances in automation and new technology are being introduced to almost every work setting. They also seem to be made in ignorance of the strictures of Watson-Jones regarding the non-availability of light work, made as long ago as 1937 when presenting the joint British Medical Association and Trades Union Congress submission to the Delevigne Committee on the rehabilitation of persons injured by accident(3).

Secondly, it is notable that reporting on the sample as a whole does

not include a single example to show that consideration was given to accommodations, that is to say job re-design, the adaptation of equipment or premises or the provision of special aids to employment. While not applicable in every case, a more constructive approach in which such possibilities were explored more frequently and more fully could have enabled a higher proportion of patients to return to work or, in some cases, to do so sooner. The effective use of these options, however, is also dependent on such other factors as consultants' knowledge of patients' residual disabilities, jobs and/or working conditions and the extent to which they encourage referral of patients to specialist employment services for more detailed occupational assessment or advice. As noted above, these are other aspects of examination, assessment and reporting where improvements are to be desired.

Thirdly, there is evidence that reporting on restricted activities may have an overly prohibitive tone - especially if the coverage of restrictions in reports is reflected in advice actually given to patients. The standard approach was to list activities to be avoided. One consultant's observation that "lifting, walking, over-rough work and climbing are undesirable" is fairly typical of such advice. However it is not difficult to imagine how it might be perceived by a patient who is even mildly apprehensive about returning to work, let alone one who may be prone to a more hysterical reaction. But negative responses to unduly prohibitive advice could be minimised if restrictions were more precisely stated or quantified. Clearly, patients who are counselled to avoid lifting weights of more than a particular amount; not to climb above a specified height or to use stairs more often than a stated frequency; to avoid jobs which entail

standing for more than a given time or not to undertake any task which involves walking for more than a certain distance, will have a wider range of jobs to take into consideration than those who are simply advised to avoid lifting, climbing, standing and walking. Scrutiny of all reports on this sample of personal injury claimants, however, did not indicate that advice on restrictions is based on formal assessments of patients' residual skills and abilities by, for example, occupational therapists. Because more detailed information of this kind could benefit not only patients but also employers or potential employers, it might be considered desirable, as an aspect of good practice, to base reporting of restrictions on formal and, whenever possible, quantified assessments.

Coverage of rehabilitation and resettlement

Other aspects of this study have revealed how little priority appears to be attached to the referral of personal injury claimants to relevant vocational rehabilitation and resettlement services and, consequently, how few claimants have any contact with such services. This general picture is further confirmed by the content analysis of medicolegal reports. Relevant references, totalling less than 2,000 words, were found in medicolegal reports on only 16 EL claimants and 8 motor claimants. There was therefore no reference to rehabilitation in medicolegal reports on the other 78 EL and 101 motor claimants. It is, of course, quite unlikely that all - possibly even the majority - of the latter either needed or had the potential to benefit from such referral. Nevertheless, in view of the large number of claimants who did not return to work, and the possibility that some of those who did return might have been helped to do so sooner, there is a clear indication that the option of referral to relevant rehabilitation and

Table 48: Coverage of rehabilitation and resettlement

1. General references to rehabilitation (24 per cent)

a His return to work is an indication of his enthusiasm in his rehabilitation, and the present satisfactory function is in part related to his own energetic rehabilitation efforts.

b Ideally, (the patient) should be offered a course of rehabilitation to coax him back into some confidence in using his left hand and he might then be able to return to at least some medium aspects of labouring work.

2. Referral to medical rehabilitation (19 per cent)

a I have discussed the situation this morning with his General Practitioner (name of doctor), and am sending him to the Occupational Therapy Department to see if some improvement can be obtained. It may be necessary to splint the fingers into flexion to force further movement.

b After 2 months his doctor referred him to a rehabilitation specialist and he had a course of physiotherapy at (name of general hospital).

3. Referral to industrial therapy (3 per cent)

a Indeed it would seem to me that the most important thing for (the patient) at this present moment is to encourage his rehabilitation and, with this in mind, I have persuaded him to attend our Industrial Therapy Department at (name of hospital) so that we can further assess him, and he started last week.

4. Referral to employment rehabilitation (22 per cent)

a (The patient) has not worked since his accident. About 5 or 6 weeks ago he went on a DHSS Rehabilitation Course at Leicester for 5 weeks, and he is now waiting to go to a TOPS Training Course in carpentry at Gloucester.

b At the time of my examination he was doing a course in the Rehabilitation Centre of the Department of Employment at Preston and he was hopeful that following on this he may be able to get some suitable employment within the limits of his present physical capability.

5. Referral to DRO service (26 per cent)

a He sees the DRO regularly and is on the Disabled Persons' Register.

b Further to (my previous report the patient) was registered as disabled and lost his heavy goods vehicle licence in October of this year, the disablement being with regard to the right hand and shoulder.

Base: **Approximately 2,000 words of commentary on 16 EL claimants and 8 motor claimants**

resettlement services was not exercised to the fullest potential. Table 48 reveals that approximately one quarter of all references to rehabilitation were concerned with the identification of need rather than with onward referral to services. The remainder recorded contacts with physiotherapists, occupational therapists, industrial therapy units, employment rehabilitation centres and the MSC's training and DRO services.

Coverage of psychological problems

Table 49 summarises the coverage of psychological themes in medicolegal reports on sample members. While it is to be expected that most patients will recover from injuries without any lasting psychological consequences, it is noticeable that consideration of such effects is missing from reports on one half of the EL claimants and two-thirds of the motor claimants. In the remaining cases in which consultants did make some relevant comment, normal or positive reactions were noted in a third of all cases, leaving two thirds in which a range of adverse psychological reactions were observed, sometimes of a multiple nature. Hysterical reactions (e.g. functional overlay), depression and anxiety states each accounted for around one-fifth of all such observations, with poor motivation, cognitive deficits and personality change accounting for the remainder.

With the exception of one claimant whose depression was associated with attempted suicide and four others whose injuries resulted in personality change, all of whom were referred to psychiatrists, reported psychological reactions were not confirmed by independent professional assessment. Without formal corroboration, and with so many cases in which psychological reactions are unrecorded, it is not

Table 49: Coverage of psychological problems

1. Normal reaction or good adjustment to disability (33 per cent)

a I credit his complaints, he is an honest witness and does not tend to exaggerate his troubles - the knee has quite a definite disability.

b He has adjusted very well and remarkably quickly to his disability.

c As he was my patient I've got to know him fairly well and cannot speak too highly of him as a patient. Another thing to his credit is that never, even when faced with the diagnosis and the fact that no recovery could be promised, did he ever become despondent or appear to be in the least bitter. Perhaps that attitude has been a factor in his ultimate recovery.

2. Hysterical reaction (21 per cent)

a His complaints are many and he is over-reacting, and all the clinical tests and findings were somewhat bizarre, particularly on testing for sensation. The diminution of sensation in the right leg does not correspond to any anatomical distribution of nerves. The movements carried out were voluntarily reduced, and he walks with an exaggerated limp.

b I could find no evidence of any organic disorder in his lumbar spine, either clinically or radiologically, and the stocking distribution of sensory loss in the left leg is normally regarded as a hysterical manifestation.

3. Depressive reaction (19 per cent)

a I think this man's major neurological problems are related to a severe anxiety state. I think the history of previous symptoms for which no particular cause was found suggest that this man might have been prone to be anxious about his health and as a result of the psychological shock of this accident he has become very much more so. He is clearly suffering from a severe anxiety state with depression and many of the symptoms he describes are those one could expect from depression. This is not directly due to organic injury at the time of the accident but I think one can say that the accident precipitated the onset of a psychiatric disorder in someone who was probably prone to this prior to the injury occurring.

b (The patient) had found herself crying quite a lot since the accident. She might weep on several days and might then be alright without any tears for 3 or 4 days before the cycle re-occurred. She did not know precisely why she was weeping. If (the patient) were to be in a "bad mood" she would easily lose her temper if she was required to do anything except retire quietly into a corner. (The patient) also added that she became upset and "things got on top of her" more quickly and more easily than they used to do. The depression and irritability are a non-specific consequence of the accident which has left her blind in one eye and permanently scarred.

4. Anxiety reaction (18 per cent)

a In conclusion, my impression is that this patient has also suffered some loss of confidence as a result of his accident and I suspect that this is a contributory factor in bringing his working career to what seems likely to be a premature close.

b His mental state has gradually improved. The last visit in January 1981 showed that he was walking with a minimal limp from his fractured femur. He still had a mild degree of anxiety, but considerably less than immediately after the accident. In my opinion, this man's post-traumatic anxiety state is resolving satisfactorily and in the long-term it should disappear completely.

5. Personality change (4 per cent)

a It is well established that injuries to this part of the brain (ie frontal lobe) often result in marked changes in the personality of the patient, and this has certainly happened here.... At the present time, depression, irritability and aggression are the outstanding features of his emotional state, and this is really a bigger handicap to him and his family than the loss of vision in his left eye.

6. Poor motivation (3 per cent)

a It is clear that this patient is drifting along aimlessly with no practical plans to rehabilitate himself and to get back to earning a living.

7. Cognitive deficit (3 per cent)

a She sustained a mild cerebral concussion, and the other symptoms of which she complains, that is the headaches, nervousness whilst driving and difficulty in concentrating and poor memory, are partly to be related to this cerebral concussion, but they were also in part due to an accompanying mild anxiety state.

Base: Approximately 6,500 words of commentary on 47 EL claimants and 41 motor claimants

← Table 49

really possible to judge the extent to which observed psychological reactions are a valid reflection of the true incidence of such reactions to injury or impairment amongst the personal injury claimants studied. Indeed, it is possible that some reactions are more accurately reported than others. From what is known about the prevalence of psychiatric symptoms both in the general population(4) and in populations of people with disabilities(5), it is likely that coverage of psychological problems in medicolegal reports may underestimate the incidence of normal responses and both anxiety and mild depressive reactions. On the other hand, hysterical reactions are probably more accurately reported and, given the availability of independent psychiatric assessment, the incidence of adverse personality change is also likely to be more accurately recorded.

Main outcomes from the content analysis

Taking stock, it would seem that apart from occasional references of a miscellaneous nature, medicolegal reporting concentrates on 13 main themes. Eight tend to be covered in reporting on almost every case, although they are not necessarily mentioned in each constituent report. The other five themes are mentioned much less frequently.

Within this general framework, some two-thirds of all medicolegal reporting is devoted to accounts of the incident in which injuries were received (or the circumstances in which other impairments originated), descriptions of injuries or impairments, details of treatment and response to treatment, patients' complaints when seen for medical examination and reports of examination findings. Recalling the results of the preceding analysis of compliance, these mainly clinical themes therefore are not only the most frequently

reported but also the most extensively covered aspects. Since coverage of these themes was found generally to be of a consistently high standard, there would appear to be little scope to improve these aspects of medicolegal reporting practice.

But these particular themes embrace only part of the wider clinical and non-clinical frame of reference which needs to be borne in mind in the processing of claims for compensation for personal injuries. The majority of points of interest to recipients, if covered at all, are restricted to the remaining third of medicolegal reports. Some, including occupational details, residual disabilities and potential employment handicap, are also covered in reporting on most cases. However, an analysis of the content of such reporting generally does not suggest that frequency of coverage is matched by the same high standards which characterise the reporting of most mainly clinical information. There would appear therefore to be plenty of scope to provide more detailed accounts of patients' jobs, work records and working conditions and to achieve higher standards in reporting on both severity of residual disability and employment handicap.

In yet other instances, both the frequency and adequacy of reporting may be considered to leave room for improvement in order to make medicolegal reports not only more comprehensive but also more helpful to the wider aims of insurance claims decision making. Content analysis corroborated findings from the preceding analysis of compliance in underlining the extent to which current medicolegal reporting practice may not take fully into consideration such generally relevant factors as claimants' psychological reaction to injury or impairment and any need they may have for referral to other

relevant rehabilitation and resettlement services.

SUMMARY AND CONCLUSIONS

Both lines of analysis pursued in this evaluation of medicolegal reports suggest similar conclusions. Firstly, a common core of mainly clinical themes is not only the most frequently covered aspect of medicolegal reporting but also the most extensively and comprehensively reported aspect. Coverage of these themes, moreover, is generally of such a consistently high standard that there would seem to be comparatively little scope for further improvement Secondly, though, these themes address only a minority of the points on which recipients may wish to obtain information and advice, albeit not in every case. The wider clinical and non-clinical frame of reference within which insurers operate therefore tends to be less well served, with relevant information and advice available less frequently, less extensively and less comprehensively. There may therefore be considerable scope to encourage higher standards of reporting on these latter aspects and hence to make medicolegal reports much more relevant to recipients' decision making requirements.

Although a literature review did not produce an example of other research to evaluate medicolegal reporting practices, it is of interest that a Finnish study of medical reports on disability pension applicants has reached similar conclusions about the imbalance between clinical and other psychological, social and occupational aspects, and the implications of such imbalance for comprehensive decision making(6).

Although this study has concentrated on medicolegal reports prepared by doctors, it would be wrong to regard attainment of higher standards of reporting as a matter for the medical profession alone. In fact, there are several options open to recipients of such reports to help achieve this objective. However, all would require new initiatives in which, for example, the insurance industry, at either company or a more representative level, reinforces its traditional interpersonal communications with individual doctors with other measures to establish a more general dialogue with the medical profession. But more effective dialogue with the medical profession may itself depend on other developments. One essential prerequisite would be more formal consideration within the insurance industry of all the points insurers wish to have covered in medicolegal reports. Insurers' requirements in this respect have never been a subject for discussion in their professional literature. Perhaps more formal review is now overdue.

This, in turn, may give rise to thoughts about how effective the present system of reporting is as a method of obtaining all the information or advice that it needed. For example, current procedures permit doctors almost complete discretion over the selection of information presented in medicolegal reports. This study suggests that such procedures are a very imperfect means of meeting insurers' requirements. With no two reports alike, or even covering the same ground, information deficits may not only impede decision making in individual cases but also make it virtually impossible to produce the statistical information about claimants that is needed to achieve more effective planning and underwriting.

A review of requirements and the scope and effectiveness of the present system of medicolegal reporting would also offer a good opportunity to consider other questions raised by this study concerning the extent to which consultants are able to meet all requirements without recourse to other sources of expertise and advice. This study has suggested, for example, that claimants could be referred to specialist rehabilitation and resettlement services much more often. It has also suggested that consultants may not have sufficient time to undertake more formal assessments of residual abilities and that they may lack the detailed knowledge of jobs, working conditions and the operation of the labour market that is really needed to provide adequate occupational assessment and advice. Insurers therefore may wish to consider the desirability of encouraging medical consultants to make more frequent use of referral to the professions or agencies which specialise in these tasks. At some later date, they may also wish to explore the availability of other sources of relevant information and advice with representatives of such professions as rehabilitation medicine, occupational health, occupational therapy and occupational psychology, and with such statutory agencies as the Employment Medical Advisory Service and the Rehabilitation and Resettlement branch of the Manpower Services Commission's Employment and Enterprise Group.

Finally, in revealing the extent to which medicolegal reports are based on a mainly clinical frame of reference which may not take all relevant personal, social, psychological and occupational variables fully into account, this study may raise doubts about the reliability and/or validity of some of the information advice or assessments presented in such reports. At this time, it is not possible to say how

far such doubts may be justified - because any judgement of this kind is beyond the compass of the present study. However, it would be a comparatively simple matter to check, for example, the reliability of information regarding return to work or the validity of assessments of potential handicap. This could be achieved by undertaking a follow-up survey of claimants whose cases have been settled in order to record their return to work, or to compare how they actually coped with disability with doctors' expectations regarding the problems they might encounter. Above all, though, a follow-up study along these lines would really help to pinpoint the topics that would need to receive the most urgent attention in any future dialogue with the medical profession on the improvement of medicolegal reporting practice.

CHAPTER EIGHT

Conclusions and Implications for Future Practice and Policy

MAIN CONCLUSIONS

This study of the rehabilitation and return to work of personal injury claimants took as its starting point an evaluative account of the development, scope and effectiveness of vocational rehabilitation services in Great Britain. It was noted that development and management of these services over the years have been marked by a mainly conservative, reactive approach focused on immediate operational problems rather than longer-term policy analysis or more fundamental appraisals of the extent to which resources were used effectively to cater for all requirements for such services. As a result, it is only quite recently that the basic assumptions made by the war-time Tomlinson Committee, on whose recommendations these services were established in the late 1940s, have been subjected to detailed scrutiny.

Re-examination of those basic assumptions, however, poses questions about their continuing relevance and the need to consider different options for vocational rehabilitation policy and practice. This is particularly important in view of recent and ongoing changes in the nature and composition of the labour market in response to the impact of new technologies. To its credit, the Manpower Services Commission has commenced its own stocktaking of the effects of these changes on its services for the rehabilitation, training and resettlement of

people with disabilities and, recently, conscientious efforts have been made to enhance the efficiency and effectiveness of its specialist services and to introduce new policies and services.

While welcoming these initiatives, many consumers are not satisfied that they meet all of their requirements and expectations. Disabled people, and organisations which represent them, would welcome more participation in policy decision making and would like to see their interests protected by appropriate anti-discrimination or equal opportunities legislation. They also advocate that much more could be done to ensure employers' compliance with the quota scheme and to stimulate new opportunities for part-time, subsidised and sheltered employment for disabled people.

Many doctors, however, appear to have adopted a more sceptical position. Over the years, the medical profession has offered a fairly constant flow of advice on how to make vocational rehabilitation services more effective and how to achieve better co-ordination between medical, social and vocational rehabilitation services, but consider that most has gone unheeded. At a more practical level, they report considerable disappointment and frustration regarding the failure of specialist vocational rehabilitation services to find employment for their patients. One outcome has been that many doctors are now dissuaded from referring their patients to DROs, ERCs and other specialist services, disrupting the very continuity between medical and vocational rehabilitation that Tomlinson's proposals sought to achieve.

Because their rehabilitation and return to work may be influenced not

only by any contact, or lack of contact, with vocational rehabilitation services but also by their involvement in the medicolegal system, personal injury claimants could encounter even greater difficulties than many other patients who need specialist help on recovery from illness or injury. Indeed, it was noted that there is a well established school of thought which holds that pursuit of compensation and rehabilitation are incompatible objectives. The second anchoring point for this study therefore was an account of the operation of the medicolegal system and review of various strands of evidence on the need for, and feasibility of providing, rehabilitation services in a personal injury claims litigation context.

It was found that, before the Beveridge and Tomlinson Committee reports, the medical profession had mainly stood alone in pressing for the introduction of vocational rehabilitation services. On balance, employers and insurers were reluctant to bear the additional expense of such services and the trades union movement offered only qualified support for their introduction, preferring cash compensation over and above the less tangible benefits of rehabilitation. The legal profession has probably been even more committed to a system of lump sum compensation. Even though relevant services have been provided since the late 1940s, when they were implemented as part of a package of measures designed to achieve maintenance of full employment and to lay the foundations of a welfare state, there is some evidence that personal injury claimants have not taken the fullest possible advantage of their availability. Certainly the two main studies of personal injury claimants by Ison(1) and by Harris et al(2), both of which examined the operation of the medicolegal system mainly from the perspective of legal proceedings, concluded that the present system of

lump sum compensation was still a powerful deterrent to rehabilitation and return to work.

A review of the literature on personal injury claimants, however, suggested that previous studies have been biased toward the majority of smaller claims for minor or moderately severe injuries from which claimants normally make a full recovery during relatively short absences from work. The experience of more severely injured accident victims, who have the greatest need for, and potential to benefit from, vocational rehabilitation, and who may make the heaviest demands on the medicolegal system, had not been singled out for special consideration. It was also found that clinical literature on particular injuries or impairments concentrated mainly on the nature of those injuries or impairments, their treatment and patients' response to treatment, with comparatively little attention paid to rehabilitation and return to work. Studies of patients who were injured in particular contexts like road traffic accidents were found to be equally unhelpful, because they too were focused mainly on minor injuries or impairments. And while rehabilitation and return to work did receive considerable attention in the very specialised and partly overlapping literatures on compensation neurosis, workmen's compensation, severe head injuries and back or spinal injuries, all of which tend to be associated with a comparatively high incidence of social and psychological problems, it was considered doubtful that results from studies of patients in these categories were generalisable to all personal injury claimants. Results from the three analyses which comprise this study appear to support this conclusion. Only comparatively small and partly overlapping proportions of the personal injury claimants on whom it was based were

found to have severe head injuries, back or spinal injuries, serious or enduring psychological problems, or were suspected of malingering or functional overlay.

Although these findings may be of interest in their own right, they were incidental to the main objective of the first analysis. That was to describe and compare from relevant personal, procedural, medical and occupational perspectives (a) 209 employers' liability claimants and (b) 609 motor claimants who were of working age and in employment at the time they were injured, paying particular attention to their involvement with vocational rehabilitation services and return to work. It was found for both groups of claimants that there was an interval of two years, on average, between the date of discharge from medical treatment, after which they tended to see doctors only when referred for medicolegal examination and reporting purposes, and the date of settlement of their claims. During that period, 53 per cent of the EL claimants and 71 per cent of the motor claimants returned to work, leaving substantial minorities who did not do so. The latter included some claimants who returned to work only to be made redundant and who were unable to find alternative employment. They also included some claimants who tried to return to work but failed to maintain employment because they were unable to meet all the demands of their pre-accident job; the very small number of cases whose residual disablement was so severe that they either took, or were candidates for, early retiral on medical grounds; and others who, while fit for work, made little or no effort to return.

Clearly, apart from some very severely disabled claimants, who were unlikely to work again, all of those who did not return to work before

settlement of their claims could have been referred to relevant vocational rehabilitation services. However, it was found that this option was neither considered nor pursued in many cases. Less than one in twenty claimants were reported to have had any involvement with occupational therapists, DROs, ERCs or any of the other professions, services or agencies which might have assisted with their rehabilitation and return to work. Moreover, those who did receive such help tended to be referred to vocational rehabilitation and resettlement services at a very late stage of recovery, often when all other measures had failed.

These results suggested two main conclusions. The first was that, for the majority of personal injury claimants, involvement in litigation is not an impediment to return to work. In their cases, the adversarial context of personal injury claims negotiation clearly was not the deterrent it is sometimes held to be. Secondly, though, there remained a substantial minority who, while medically fit either to resume their former occupation or to undertake lighter or otherwise modified, alternative employment, did not do so. In some of these cases, especially those in which malingering, poor motivation or functional overlay was suspected, non-return to work could be attributable to the mainly personal, psychological reasons highlighted in previous studies of, for example, compensation neurosis and workmen's compensation claimants. But such explanations did not apply to most claimants who did not return to work before settlement. In their cases, two iatrogenic factors appeared to have a potentially more powerful bearing on employment outcome. One was the possibility that trades union legal departments, or solicitors who were instructed to represent trades unionists, could prolong the negotiation of some

employers' liability claims, presumably reflecting their continuing concern to achieve the most favourable cash settlement. The other was the effect of medical management of disability practices conducted in disregard of the vocational rehabilitation principle of early intervention, and with little or no onward referral of patients to appropriate sources of advice or help with occupational assessment, vocational guidance, employment rehabilitation, training or retraining, or placement into suitable employment. It would certainly be advisable for any future attempt to enhance the rehabilitation of patients who are involved in the medicolegal system to pay at least as much attention to the influence on employment outcome of established professional attitudes, practices and procedures in medicine, law and insurance as to the psychological explanations which have dominated previous thinking on this subject.

Return to work of personal injury claimants was singled out for more detailed consideration in the second analysis of data on representative samples of (a) 93 employers' liability and (b) 101 motor claimants. This analysis yielded a statistical model which suggested that return to work before settlement was associated with shorter periods off work following injury or impairment; absence of psychological problems; low unemployment in local labour markets; increased time between accident and settlement (permitting more opportunities to return to work) and multiple injuries or impairments rather than a single injury (a term which was considered to reflect interactions between other mainly non-clinical variables). This model had a high level of predictive accuracy and, in linking temporal, personal, procedural, labour market and clinical terms in a single equation, underlined the multidimensionality of the problem.

The finding that time off work was the most powerful predictor of employment outcome at settlement led on to a further stage of analysis. This aimed to determine if it was possible, using information that is available routinely in personal injury claims files, to distinguish between claimants who returned to work within a year of injury and those who did so later or not at all. The analysis yielded an easily administered, seven item, ordinally scaled Vocational Rehabilitation (VR) Index which discriminated between claimants who returned to work and those who did not, and which could be used both specifically to identify claimants whose return to work might be assisted by referral to appropriate services and more generally to indicate the kind of help they might need.

While both the prediction model and the VR Index may be capable of further refinement and, in any case, need to be evaluated prospectively, their development to date has also yielded some substantive conclusions. For example, at a univariate level of analysis, it was found that personal injury claimants who returned to work tended to belong to younger age groups; to be employed in professional/intermediate, skilled manual or semi-skilled manual occupations; to have received shorter periods of medical treatment and to have had shorter periods of time away from work. They were also more likely to have received damages of less than £10,000 and to have had their claims settled in shorter timescales, and less likely to have experienced back or spinal injuries or psychological problems. However, return to work by settlement was not found to be associated with claimants' sex, receipt of a head injury, the number of injuries or impairments, severity of main injury or impairment or the number of

operations undergone.

The indication from both univariate and multivariate analysis that, apart from length of treatment, clinical variables generally are poor predictors of employment outcome was in line with evidence from other studies. That they did not predict vocational outcome may reflect, at least in part, the generally high standards of medical care provided and the effectiveness of medical treatments received by personal injury claimants. The finding that non-return to work was associated with longer periods of medical treatment, however, was only partly explained by associations between length of treatment and other clinical variables. A fuller explanation would need to take into consideration such other aspects of medical management of disability as undue delay in discharging patients from treatment and lack of attention to vocational rehabilitation requirements during periods of medical treatment, including low levels of involvement with, or onward referral to, the other professions or services that could help patients return to work. At a more general level, therefore, it was concluded that evidence concerning the crucial importance of minimising time spent away from work and missed opportunities for referral to other services underlined the very clear need to associate the medical treatment and clinical case management of personal injury claimants more directly with new initiatives, based on the principle of early intervention, to assist their rehabilitation and return to work.

For the third analysis, the focus of attention changed from personal injury claimants to the role of the medical profession in the medicolegal system, concentrating in particular on medical reports

prepared for medicolegal purposes. On the assumption that, whatever is done further to assist the rehabilitation and resettlement of personal injury claimants, doctors are bound to remain the main suppliers of occupationally relevant information and advice, it was decided to include in the study an appraisal of how well they performed this essential but previously unevaluated task. Two evaluations were made: one comprising an analysis of their compliance with published guidance on points to be covered in medicolegal reporting and the other an examination of the content of medicolegal reports. Both were based on the same series of 602 reports which 388 consultants and 12 GPs had prepared on representative samples of 94 employers' liability claimants and 109 motor claimants.

The two complementary lines of analysis yielded similar conclusions. Firstly, a common core of mainly clinical themes - including, for example, claimants' injuries or impairments, medical treatment and response to treatment, complaints when seen for medical examination and findings from such examinations - were covered not only most frequently but also most extensively and comprehensively. It was concluded that coverage of these items generally was of such a consistently high standard that there was comparatively little scope for further improvement. Secondly, however, it was also found that information provided under these headings, while essential, addressed only a minority of the points on which recipients might be seeking information or advice. The wider clinical and non-clinical frame of reference within which personal injury claims are negotiated therefore was found to be less well served by current medicolegal reporting practices, with relevant personal, social and, most importantly, occupational information and advice supplied less frequently, less

extensively and less comprehensively. Assessments of residual disability and advice on employment handicap are two aspects where substantial improvements in reporting standards should be made.

In view of the possibility that better reporting might contribute to enhanced decision making and the earlier return to work of some personal injury claimants, it was concluded that there were several initiatives that insurers could take to achieve this objective. A formal review of their industry's requirements for information and advice could provide a basis for discussion with the medical profession on how to attain higher standards of reporting consistent with insurers' requirements and about the extent to which the present format of reporting is the most effective method of obtaining such information and advice. Other points that insurers might wish to pursue in this context would include the extent to which the medical profession is able to meet fully their various requirements for assessments of residual disability and advice on employment handicap, and for occupational information, without the more frequent involvement of other professions or services which specialise in these tasks.

SOME IMPLICATIONS FOR FUTURE PRACTICE AND POLICY

While this study has paid particular attention to the medical profession's involvement in the medicolegal system, it would be wrong to conclude that its results hold implications only for them. Indeed, the various indications that temporal, personal, procedural and economic variables may all be equally if not more powerful determinants of employment outcome than clinical variables suggest that the vocational rehabilitation and return to work record of personal

injury claimants could be improved by interventions which lie well beyond the compass of medical practice. Looking back over the study, therefore, it would appear to have raised for further consideration several implications for future policy and practice not only in medicine, law and insurance but also more widely with regard to supportive action that might be taken by employers, unions and government departments or agencies like the Manpower Services Commission. The concluding section of the study presents some of the principal perceived implications for these central and more peripheral participants in the British medicolegal system. However, as no study of accident victims would be complete without reviewing its implications for prevention, this aspect is considered first.

Implications for prevention of accidents

The study was not focused directly on prevention and did not, for example, involve detailed study of the causes of accidents. Any implications for prevention therefore are incidental to its main aims and outcomes. Nevertheless, some results do draw attention to the continuing occurrence of particular types of accident and may therefore reinforce more general points about their prevention. In this limited sense, studying employers' liability claims files was a stark reminder of the dangers which lurk in many places of employment, even in a "health and safety" conscious age. The number of claimants who suffered crippling and disfiguring hand injuries, for example, may demonstrate that continuing vigilance is needed to protect employees from the dangerous working conditions created by unfenced or inadequately guarded machinery. In similar fashion, the relatively high incidence of mechanical strains and other lumbar spine injuries may underline the continuing need for better instruction in lifting

techniques and, possibly, for other prophylactic measures.

As far as road traffic accidents are concerned, results from the study highlight three well known road safety points. The first concerns the vulnerability to severe injury of moped, scooter and motor cycle riders. The second concerns the peak in frequency of accidents around public house closing times,corroborating what has been pointed out on many previous occasions regarding the association between alcohol consumption, driving and increased risk of involvement in road traffic accidents. The third substantiates a point made publicly by the Association of British Insurers following a major accident in 1985 when - in dry, sunny conditions - a coach was driven at speed into the rear of a stationary queue of motorway traffic causing several injuries and fatalities. It is that the majority of road traffic accidents occur in daylight hours, on dry roads and away from crossroads, roundabouts or other junctions, suggesting that poor driving standards may be as frequent a cause of accidents as adverse weather or traffic conditions. Regrettably, the very high number of cases in which claims files contained no information to indicate whether or not the claimant was wearing a seat belt precludes any conclusion on this aspect of road safety.

Implications for medical practice

In reviewing the implications of this study for medical practice, it should not be overlooked that the most important contribution of the medical profession to the medicolegal system is the treatment of claimants' injuries or impairments. This study has produced no evidence to suggest that, normally, personal injury claimants receive anything but the highest standards of care achievable within existing

resources. This should not be taken as implying that there is no scope to develop more effective methods of treating particular injuries or impairments, because a very good case can be made for further investment of this kind. However, evidence from the present study as well as other research indicates that clinical variables are poor predictors of outcome - partly, at least, because personal injury claimants (and, presumably, other patients) already receive such a high standard of care that the incidence of residual disability requiring aids or long-term assistance is less than might be expected for such a severely injured group. In turn, this suggests that further improvements in the quality and effectiveness of their medical care might have less impact on vocational rehabilitation and return to work than other initiatives within the wider framework of the management of disability, where medical responsibilities merge or overlap with those of other professions and services. Results from this study have suggested several ways in which professional medical skills might be extended or supplemented by those of other professions or services in order to enhance the vocational rehabilitation and resettlement of personal injury claimants.

For example, unlike articles on many other aspects of professional practice, publication in 1981 of Paul's guidance on medicolegal reporting occasioned no controversy or debate. It would appear, therefore, that his elaboration of the aims and essentials of medicolegal reports reflected generally accepted opinion in medical circles and, in all probability, the existence of a widely shared belief that his advice on this aspect of professional practice was already widely followed. However, results from this study show that compliance with that guidance is far from universal and that the

majority of medicolegal reports on patients pursuing claims for compensation for injuries received in accidents at work or in road traffic accidents are much less detailed and comprehensive than a reading of that guidance would suggest. In view of this evidence, even though published guidance has no officially approved status, members of the medical profession may wish to review its appropriateness, paying particular attention to aspects in which any differences between that guidance and actual standards of practice as revealed by this study may need to be reconciled. Apart from the need for a general medical examination and the taking of a detailed medical history in every case, a review along these lines should consider and give broad guidance on the extent to which social, psychological and occupational aspects should be reported in more detail.

The medical profession may also wish to consider what should be done to refine assessments of residual disability and advice on employment handicap. In this case, though, consideration would need to be given to the extent to which such refinements would entail using other resources within hospitals (for example, Occupational Therapy, Clinical Psychology or Rehabilitation Medicine departments) and the availability of such additional resources. It would also be necessary to take a view on the extent to which those undertaking such assessments may need to have much more frequent recourse than this study has revealed to referral of patients to other professions or services outwith the Health Service with the relevant expertise in, for example, occupational assessment and vocational guidance of people with disabilities.

One possible approach to tackling problems of this kind might be to

revise medical training to ensure that adequate attention is paid to medicolegal reporting practice, medical assessment for occupational purposes and provision of information about the various services and sources of expertise which might assist with patients' vocational rehabilitation and return to work. While it is not an argument against such initiatives, which potentially could be of great and lasting value to many patients, it should not be overlooked that numerous proposals of this kind have been made over the years(3), but with relatively little impact on medical school curricula or on postgraduate or in-service training. It is doubtful therefore if such changes alone would prove to be the most effective solution. Where patients like the subjects of this study are concerned, it has been suggested that other more radical changes in conventional medical management of disability practices may be needed.

It was noted earlier that, in contrast with its initial commitment to vocational rehabilitation, the medical profession has become progressively disenchanted by the failure over the years of the various services established on the recommendation of the Tomlinson Committee to place the patients referred to them in employment, even after employment rehabilitation or training. Such disenchantment has been reinforced by the failure of various initiatives to bridge medical and vocational rehabilitation, including a short-lived trial using hospital-based DROs and a comparatively infrequently used doctor-to-doctor referral system for employment rehabilitation centres which has been operated by the Employment Medical Advisory Service. A third, widely supported proposal to deploy specially appointed health and employment liaison personnel (HELP) in a case co-ordinating or bridging role between health, social and employment services(4) failed

entirely to materialise, mainly because the government departments involved were unable to reach agreement over their respective responsibilities for funding the trial.

In face of such frustrations, the medical profession's first line of retreat was to a position of asserting their own responsibility for all aspects of management of disability up to the point at which patients return to work. Adoption of this position was reinforced by the conclusions and recommendations of both the Mair and Tunbridge Committees in 1972(5) and the Royal Commission of the National Health Service in 1979(6). The recent Royal College of Physicians of London report Physical Disability in 1986 and Beyond(7) makes only two brief, almost grudging references to vocational rehabilitation and resettlement services, suggesting that the gulf between medicine and vocational rehabilitation may be getting even wider. Concern for patients' employment or proposals to link employment rehabilitation and resettlement services into the recommended system of disability services at regional and district levels are completely missing from this report. No wonder then that doctors appear to be making fewer and fewer referrals to vocational rehabilitation services and that all major reviews of policy and services are in unison in concluding that services are fragmented; that communication between the relevant professions and services is poor and that co-ordinating the delivery of the various services needed in individual cases is a major unsolved problem.

To leave matters as they are at present, however, would be to overlook two important considerations. The first concerns the extent to which, as noted in Chapter Two, significant strides have been made in

up-dating and in enhancing the professionalism and effectiveness of the Manpower Services Commission's specialist services for disabled people. Most of these changes have taken place since 1981, that is during a period in which, in view of frustrations experienced in the preceding decade, the medical profession has for the most part turned its back on vocational rehabilitation. Doctors therefore could do no worse than take a fresh look at recent developments in this sphere in techniques of occupational assessment, improved liaison with employers, the increased effectiveness of, for example, ERCs, help with adaptations to premises or equipment and provision of technical aids to employment. Those who have not kept in touch with recent developments could be surprised by the extent to which the changes and improvements made meet their profession's earlier criticisms of MSC rehabilitation and resettlement services.

A second reason for not leaving matters as they stand at present is suggested by the evidence from this study concerning the effectiveness and applicability to all cases of the conventional, sequential model of clinical case management. This assumes that consultants are able to provide comprehensive care up to the point at which patients return to work, with medical, social and occupational aspects each dealt with in turn. This approach may be appropriate to the majority of patients whose injuries or impairments are not severe and mostly do not result in permanent residual disability or significant absence from work. However, the present study has identified the existence of a substantial minority for whom the consequences of injury or impairment are both more complex and more serious, and whose potential to benefit from other kinds of help, if recognised at all, tends to receive attention only in the later stages of recovery, often when all other

measures have failed.

In such cases, which frequently involve long periods during which no rehabilitative action is taken, it is arguable that different approaches to clinical case management should be tried in which the earlier stages of treatment are associated more directly with new initiatives, based on the principle of early intervention, to assist vocational rehabilitation and return to work and to reduce the likelihood of patients drifting into disability dependence and long-term unemployment. For some patients, this will entail earlier consideration of, and referral to, the various services and sources of expertise which can help with appropriate information, advice, assessment, counselling, vocational training or specialised social or employment rehabilitation programmes. For others, it may entail the wider adoption, possibly in collaboration with existing medical rehabilitation departments or other specialised services, of the multi-professional approach to clinical case management which is now well established in the various specialised units which have been set up for patients with serious head or spinal cord injuries.

In 1947, Howard Rusk, a founding father of modern rehabilitation medicine, described the history of medicine as comprising three phases of development(8). The first two were dominated by achievements in the fields of prevention and provision of definitive care, respectively. A third, rehabilitative phase had yet to be established. Forty years on, rehabilitation medicine as a specialty in its own right is more securely established, but its principles have yet to be incorporated into clinical case management in some other specialties. Adoption of the new initiatives suggested by this study therefore would mark

further progress towards the achievement of Rusk's "third phase" of medical care.

Implications for the insurance industry

With the possible exception of catastrophic injury claims, British insurers have paid much less attention to the medical treatment and clinical case management of claimants than their counterparts in other countries. Presumably, they have been of the opinion either that there was little reason for intervening in such matters (because, for example, the National Health Service was already doing all that could be done to assist patients' recovery and rehabilitation) or that they were not in a position to influence practices or procedures in other professions or services to their advantage. Certainly the industry has developed no formal links at a representative level with medicine or other relevant professions or services and, before 1980 at least, it had not invested in relevant research and development work.

This study, however, has indicated that while clinical management of personal injury claimants may be good - often excellent - in the early stages of treatment, there is a very real possibility that in many cases the benefits of such high quality care are offset by inadequate follow through or follow-up arrangements and, hence, poor co-ordination in delivery of all the different services which may be required by individual claimants. Given that all this can be very profligate of resources, is there anything that insurers could do to ensure more favourable outcomes both for claimants and for themselves? The experience of other countries suggests that much could be done - although the new initiatives needed may call for the adoption of a more proactive stance regarding the industry's roles as a "consumer"

of medical services and as a purchaser or arranger of appropriate rehabilitative help for claimants. They may also require the industry to review the stance it has adopted traditionally towards admission of liability, at least in selected cases.

For example, insurers should consider what could be done about delays and discontinuities in provision of needed services. The longer timescales needed to settle some personal injury claims can have various adverse consequences. As compared with other patients, it is often much more difficult to ensure that those with unresolved claims for compensation are directed to appropriate services at the optimal time or, where referral to several services is needed, that it is arranged in the most desirable sequence. This may be particularly difficult to achieve in the later stages of recovery or when treatment has ceased, when claimants tend to be seen only for medicolegal purposes. Once patients have returned home, when out-patient care is infrequent or has ceased, and when occupational aspects of rehabilitation should be receiving active consideration, it is not unusual for patients to have no single individual to whom they can turn for advice or who is generally responsible for their rehabilitation and resettlement. The continuity that is so essential to good rehabilitation practice is obviously harder to achieve in these circumstances. Without it, any gains patients may have made may dissipate or, in some cases, be lost altogether. Alternatively, delivery of services may be postponed when earlier referral may have enhanced recovery or reduced vulnerability to permanent disablement, secondary complications, disability dependence or long-term unemployment.

In some countries, for example, Finland, Switzerland, France and West Germany, insurers support provision of injury assessment and medical rehabilitation centres whose staff are expected to provide the necessary case co-ordination and onward referral to other needed rehabilitation, training or resettlement services. In other countries like the United States, Canada and Australia, the task of maximising the benefits of timely delivery of appropriate rehabilitative help has been assigned to specially trained rehabilitation counsellors who are recruited from various professions, including nursing. Insurers in these countries are making increased use of the availability of such services, some by recruiting appropriately qualified personnel onto their own staff and others by purchasing appropriate services from a growing array of private practitioners(9). Similar developments have been mooted in Great Britain from time to time but, until quite recently, they have not received wide support and no progress has been made toward their introduction. However, various arguments against their introduction (for example, that counselling services would be at variance with British culture and traditions; that existing National Health Service and other MSC services already meet such needs; and that services of this kind could not possibly be introduced into an adversarial system) are becoming increasingly difficult to sustain. At the same time, support has grown for proposals to provide such help on a limited scale(10). The principle recommendation from this study, that insurers should make provision for the introduction at the earliest possible time of a rehabilitation counselling service to assist the rehabilitation and return to work of personal injury claimants, is made in this more favourable context.

A rehabilitation counselling service for personal injury claimants

would not operate in competition with disability management practices or vocational rehabilitation and resettlement services. Rather, its main aim would be to complement and enhance the effectiveness of existing practices and provision, mainly by providing a case co-ordinating role. Contact with claimants, which would require their own informed consent and the prior approval of their medical and legal advisers, would aim, inter alia, to ascertain claimants' personal, medical and occupational circumstances; to review and advise on their entitlement to disability benefits and allowances; and to determine if any rehabilitative help is required to further recovery and return to work. Initial assessments would form the basis of individual rehabilitation plans setting specific objectives to be agreed with claimants, who would also be expected to participate in monitoring and evaluating progress toward the achievement of planned objectives. Once plans were agreed and approved, the rehabilitation counsellor's role would be to liaise with doctors and employers or with other appropriate agencies, services or professions which might be involved in order to help claimants achieve their personally planned objectives. The broad aims of a rehabilitation counselling service - which would vary from case to case - therefore would include enhancement of recovery from injury or impairment; avoidance of unnecessary delays or discontinuities in treatment or rehabilitation; treatment of secondary complications; and minimising the likelihood of severe and/or permanent residual disablement. They would also include prevention of employment handicap and achieving the earliest, fullest resumption of normal activities including return to former occupation or, if that is impossible, to other suitable employment with the same employer or elsewhere.

Rehabilitation Counsellors would need to be appointed and trained to carry out this task. While no training of this kind is available in Great Britain at the present time, it could be introduced at a continuing education level for members of several different professions including physiotherapy, occupational therapy, nursing, health visiting, clinical psychology and social work. Training at this level would aim to supplement previous professional training with the core knowledge and core skills needed to carry out effectively the rehabilitation counselling role. Core knowledge would need to include an appreciation of relevant claims decision making and negotiating procedures; the nature, incidence and management of the major injuries or impairments experienced by claimants; the social and psychological consequences of disablement; the main functions of the national network of medical, social and occupational rehabilitation services and the range of benefits and allowances to which disabled people maybe entitled. Core skills, requiring a programme of classroom instruction and supervised practice, would include assessment of disability; vocational evaluation; the elements of case work, vocational counselling and rehabilitation planning; job development and job placement techniques.

Other work conducted in association with the research reported in this thesis has demonstrated the feasibility of devising and providing an effective training programme of this kind. Following a report on the early stages of the research to an industry-wide permanent health insurance (PHI) claims forum in May 1985, a leading company in this market one year later established a rehabilitation counselling service to deal with its own claimants(11). After one year in operation, including the period devoted to induction training, this

service has proved to be so successful that the insurance company concerned is planning to expand it to double its original size.

An extension of rehabilitation counselling to the field of personal injury claims may be expected to present one or two additional, though not insurmountable, practical problems reflecting the fact that, in this case, claimants are not policy holders, with whom insurers (or rehabilitation counsellors acting on their behalf) can negotiate or otherwise interact directly. Where personal injury claimants are concerned, therefore, it will be necessary to obtain the prior consent and approval of their medical and legal representatives. In the past, insurers may have shied away from the introduction of a rehabilitation counselling service for personal injury claimants in such circumstances. However, it is a mark of their growing confidence in rehabilitation that they are now more of the opinion that new developments along these lines should be introduced - although, understandably, it is also considered that their introduction should proceed with due caution, appropriate consultation and thorough formal evaluation. On this understanding, the Association of British Insurers' Advisory Unit of representatives from the ABI and six member companies, which was established to advise on the conduct of the Developments in Rehabilitation Studies programme, has already approved a follow-up stage to the research reported here which will take the form of a controlled trial to evaluate a rehabilitation counselling service for personal injury claimants in two regions of Great Britain.

In addition to the evidence it will yield concerning the effectiveness of rehabilitation counselling in a personal injury claims context, the proposed trial should help to answer at least three outstanding

questions. The first concerns the extent to which claimants and their medical and legal advisers would be willing to respond to the offer of rehabilitative assistance. The second concerns the opportunity to evaluate further in the context of a prospective trial some of the work reported in this study on the development and potential applications of the Vocational Rehabilitation Index. The third concerns the extent to which, in the furtherance of rehabilitative aspects of personal injury claims decision making, insurers may be required to examine and possibly revise, if only in selected cases, the stance they have adopted traditionally in personal injury claims negotiations regarding admissions of liability. Earlier admission of liability, even when appropriate, may not be an easy step to take, but it could be essential if some claimants are to be persuaded to make use of rehabilitation counselling and resettlement services.

Wider implications

At a more general level, there is every reason to believe that rehabilitation counselling services for insurance claimants are being introduced into a climate of opinion and need in which they will flourish. For example, even though this study found little evidence to suggest that medical advice on return to work was very imaginative or constructive, or based on a sound appreciation of the nature of jobs or the working of the labour market, there were encouraging signs that many employers are more than willing to give sympathetic consideration to the requirements for accommodations of claimants returning to work after illness or injury. There were also encouraging signs that recent initiatives by the Manpower Services Commission - for example, promulgation of its code of good practice on the employment of disabled people, the introduction of new Disablement

Advisory Service teams and expansion of subsidised employment under the Sheltered Placement Scheme - are well attuned to this changing climate and potentially very relevant to the needs of many insurance claimants who are unable to resume employment without such assistance.

The trades union movement has also started to heed the special problems of disabled members. Some unions have followed the example set by the National Association of Local Government Officers in formulating clear policies on this subject. Others increasingly are taking the view that employment of disabled people should be considered alongside issues of sex and race in matters relating to equal opportunities. It is to be hoped that eventually this new attitude will also incorporate policies on rehabilitation in which it becomes even less likely to be seen as being in competition with the achievement of favourable cash settlements.

Of all the principal actors on the medicolegal stage, the legal profession has probably changed its stance least of all over the years, remaining strongly committed throughout to a system of lump sum compensation. However, even in this quarter, there may be some grounds for optimism. For example, at an earlier stage of this study, the legal profession, along with other interested parties, was invited to comment on a discussion document (12) outlining a rehabilitation counselling service for personal injury claimants. Their response indicated unqualified support in principle for the idea, though, clearly, replies from representative bodies of the legal profession should not be taken as indicating the support of all solicitors or barristers.

However promising the omens for new developments may be, this study cannot be concluded without asking why Great Britain has fallen so far behind other countries as far as developments in this field are concerned. While the peculiarities of its medicolegal system, the essentially conservative approach of all the professions involved in its operation, and the inability of those concerned with medical and vocational rehabilitation to establish an effective modus vivendi have all contributed to this state of affairs, one other possible contributory factor may also need to be taken into consideration. It concerns the failure in this country to regard, develop and resource vocational rehabilitation as a professional and academic discipline in its own right. Great Britain stands quite alone amongst all other industrial nations in not having - indeed, in never having had - a single, full-time, permanent professional or academic post devoted to this subject, and which therefore might have acted as a catalyst for new developments. Creation of a post of this kind (better still, in view of past neglect, a small academic and professional unit) is long overdue. With a brief, inter alia, to provide evidence on which to base informed debate between all relevant parties on the further development of policy and services; to develop relevant techniques of occupational assessment, vocational evaluation, vocational counselling, job development and job placement of the disabled; to devise and provide appropriate training programmes; to liaise with relevant professions and services in order to stimulate and evaluate new developments in practice and policy; and, generally, to resource the future development of vocational rehabilitation in this country, its establishment might help to solve some of the problems identified by this study. If so, it might also contribute to the belated realisation of Lord Beveridge's vision of the place of vocational rehabilitation services in British society.

Appendices

APPENDIX 1

Notes

Chapter One: DEVELOPMENTS IN REHABILITATION STUDIES

1. Funding for this research and development programme was awarded initially by the Accident Offices Association, a subsidiary body of the British Insurance Association. This organisation was reconstituted in 1986 and is now known as the Association of British Insurers.

2. Causes and consequences of hand injury. The Lancet 8 November, 1986: 1076-1077.

3. Smith, ME, Auchincloss, JM, Ali, MS. Causes and consequences of hand injury. Journal of Hand Surgery 1985; 10-B: 288-292 See also:- Smith, ME, Auchincloss, JM, Ali, MS and Soto, L. Causes and consequences of hand injury. In Cornes, P and Hunter, J (Eds.). Work, Disability and Rehabilitation. East Lansing: University Center for International Rehabilitation, 1985: 105-112.

4. Ross, DJ, Smith, ME, Angarita, G. Hand injury in the accident and emergency service. Archives of Emergency Medicine 1985; 2: 155-160.

5. Ross, DJ, Large, DF, Smith, ME. A microcomputer hand injury recording system. Journal of Hand Surgery 1985; 10-B: 308-310.

6. Dent, JA, Smith, ME, Caspers, J. Assessment of hand function: a review of some tests in common use. British Journal of Occupational Therapy 1985; 48: 360-362. Assessment of residual function is also receiving attention in the ongoing study of lower limb fractures.

7. The British Medical Association has appointed a Working Party to review the pros and cons of a no-fault alternative to the present system based on the law of tort. The Working Party's report is expected to be considered by the BMA's Governing Council in the spring of 1987.

8. Weighill, VE. Compensation neurosis: a review of the literature. Journal of Psychosomatic Research 1983; 27: 97-104.

9. Bochel, HM and Cornes, P. A Screening of Employers' Liability Claims Files. Edinburgh: Rehabilitation Studies Unit, 1984.

10. Cornes, P, Bochel, HM and Aitken, RCB. Rehabilitation and return to work of employers' liability claimants. International Journal of Rehabilitation Research 1986; 9: 119-128.

11. Provisional results were reported in:- Cornes, P. Rehabilitation of insurance claimants. Unpublished paper presented at the WHO Consultation Meeting on "Care of the Disabled in the Community". Edinburgh, 26-28 June, 1986a.

12. Cornes, P and Bochel, HM. Medicolegal Reporting on Employers' Liability Claimants. Edinburgh: Rehabilitation Studies Unit, 1984.

13. Cornes, P and Bochel, HM. Do medicolegal reports meet insurers' requirements? Post Magazine and Insurance Monitor 1985; 146: 2035-2037.

14. Cornes, P and Bochel, HM. Fitness for work: medicolegal assessment of residual disability and employment handicap. In Jochheim, K-A (Ed.). Proceedings of the Second European Conference on Research in Rehabilitation. International Journal of Rehabilitation Research Supplement (in press).

15. Smith, DR. Personal Injury Claims: Obtaining and Using Medical Evidence. Edinburgh: Rehabilitation Studies Unit, 1984.

16. Smith, DR. Medical Reports on Compensation Claimants. Edinburgh: Rehabilitation Studies Unit, 1986.

17. Cornes, P. A cross-cultural appreciation of the clinical attitude in rehabilitation. In Woods, DE, Wolf, A and Brubaker, D (Eds.). The Clinical Model in Rehabilitation and Alternatives. New York: World Rehabilitation Fund, 1983: 21-28.

18. Hunter, J and Cornes, P. Work, disability and rehabilitation in perspective. In Cornes, P and Hunter, J (Eds,). Work, Disability and Rehabilitation. East Lansing: University Center for International Rehabilitation, 1985: 140-159.

19. Aitken, RCB and Tait, J. Rehabilitation and Insurance. Edinburgh: Rehabilitation Studies Unit, 1980.

20. Cornes, P, Aitken, RCB and Tait, J. Delivery of Rehabilitation Services to Patients of Working Age with Unresolved Claims for Personal Injuries. Edinburgh: Rehabilitation Studies Unit, 1982.

21. Cornes, P and Tait, J. Insurance and rehabilitation. Post Magazine and Insurance Monitor 1983; 144: 1494-1496.

22. Cornes, P. Employment Rehabilitation: The Aims and Achievements of a Service for Disabled People. London: HMSO, 1982a.

23. Cornes, P. Employment rehabilitation in Great Britain. In Floyd, M and North, K (Eds.). Disability and Employment. London: Anglo-German Foundation, 1985a: 33-40.

24. Whalley, SP and Watson, HJ. Employment rehabilitation of production workers in heavy industry. In Cornes, P and Hunter, J (1985), op. cit.: 28-39.

25. Watson, HJ and Cornes, P. Occupational assessment of people with disabilities. In Kettle, M and Massie, B (Eds.). Employers' Guide to Disabilities. Cambridge: Woodhead Faulkner, 1986: 112-124.

26. Cornes, P. The Future of Work for People with Disabilities: A View from Great Britain. New York: World Rehabilitation Fund, 1984.

27. Cornes, P. The future of work for people with disabilities. In Habeck, RV, Frey, WD, Tate, DG, Galvin DE and Chadderdon, LM (Eds.). Economics and Equity in Employment of People with Disabilities: International Policies and Perspectives. East Lansing: University Center for International Rehabilitation, 1985b: 10-17.

28. Cornes, P. New technology, disabled people and the future of work. Rehab Network 1986b; Issue 4: 5-7.

29. Cornes, P. Vocational rehabilitation. International Rehabilitation Medicine 1987; 8: 38-41.

30. For a discussion of the concept see:- Parsons, T. The Social System. Glencoe: The Free Press, 1951 and Black, M (Ed.). The Social Theories of Talcott Parsons. Englewood Cliffs: Prentice-Hall, 1961.

Chapter Two: VOCATIONAL REHABILITATION IN GREAT BRITAIN

1. Throughout this thesis, the terms "impairment", "disability" and "handicap" are used in the sense defined in the World Health Organization's International Classification of Impairments, Disabilities and Handicaps (ICIDH). World Health Organization. International Classification of Impairments, Disabilities, and Handicaps. Geneva: WHO, 1980: 23-43. The term "rehabilitation" is used in the sense defined by the Mair Committee, that is the fullest possible restoration of physical, mental and social capability. See Standing Medical Advisory Committee. Medical Rehabilitation: The Pattern for the Future. Edinburgh: HMSO, 1972a. (The Mair Committee on services in Scotland).

2. See, e.g., Manpower Services Commission. Developing Employment and Training Services for Disabled People. London: MSC, 1978: 17-19; Colledge, M and Bartholomew, R. The long-term unemployed: some new evidence. Department of Employment Gazette 1980; 88: 9-12.

3. Of many background sources on the nineteenth century consulted, three were particularly helpful:- Gregg, PA. Social and Economic History of Britain 1760-1965 (5th edition). London: Harrap, 1965; Briggs, A. The Age of Improvement. London: Longmans, 1959; Steele, J. Social Policies and the Disabled. Unpublished report for the Nuffield Foundation, Department of Social Administration, University of Leeds, 1975.

4. Some of the most poignant commentary on social conditions in the nineteenth century is to be found in contemporary novels like those of Charles Dickens. Other non-fictional commentary includes, most notably:- Chadwick, E. Report on the Sanitary Conditions of the Labouring Population. London: Poor Law Commissioners, 1842; Engels, F. The Condition of the Working Class in England in 1844. London: Panther, 1969; Rowntree, JS. Poverty: A Study of Town Life. London: MacMillan, 1902; Booth, C. Life and Labour of the People of London. London: MacMillan, 1904; Webb, S. and Webb, B. English Poor Law Policy. London: Longmans, 1911.

5. See, e.g.,:- Eyden, JML. The physically handicapped. In Marsh, DC (Ed.). An Introduction to the Study of Social Administration. London: Routledge and Kegan Paul, 1964: 161-164.

6. Report by the Departmental Committee on the Re-Employment of Ex-Servicemen. London: HMSO, 1920.

7. Report of the King's Roll National Council on the Employment of Disabled Ex-Servicemen. London: HMSO, 1923.

8. Report of the Select Committee on the Training and Employment of Disabled Ex-Servicemen. London: HMSO, 1922.

9. Report of the Departmental Committee on the System of Compensation for Injuries to Workmen (Holman Gregory Committee). London: HMSO, 1920.

10. While little was done in the inter-war years to introduce new services, rehabilitation of the disabled was often debated by employers, trades unions, doctors, insurers and others. See, e.g., Brown JC Disability Income Part I: Industrial Injuries. London: Policy Studies Institute, 1982: 120-134. See also the opening section of Chapter Three of this thesis, where arguments for and against the need for rehabilitation services made during this period are considered in more detail.

11. Report of the Inter-Departmental Committee on the Rehabilitation and Resettlement of Disabled Persons (Tomlinson Committee). London: HMSO, 1943.

12. Ibid., para. 1.

13. Ibid., para. 71.

14. These were known originally as Industrial Rehabilitation Units or IRUs.

15. Report of the Committee of Inquiry on the Rehabilitation, Training and Resettlement of Disabled Persons (Piercy Committee). London: HMSO, 1956.

16. Department of Employment. Review of Employment Policy and Services for Disabled People. Unpublished report in three volumes by the DE Research and Planning Division. London: Department of Employment, 1972.

17. Manpower Services Commission (1978), op. cit.: 7, 21-22.

18. In 1986, the National Advisory Council on the Employment of Disabled People (NACEDP) established a Working Party to examine the principles underlying employment provision for disabled people. A discussion document was issued in October 1986, initiating a round of consultations to precede presentation of final recommendations to the National Advisory Council in 1987. NACEDP. Report of the Working Party on the Principles Underlying Employment Provisions for Disabled People. London: Department of Employment, 1986.

19. Manpower Services Commission. The Quota Scheme for the Employment of Disabled People: A Discussion Document. London: MSC, 1979a.

20. Manpower Services Commission. Review of the Quota Scheme for the Employment of Disabled People: A Report. London: MSC, 1981a.

21. Manpower Services Commission. Quota Scheme for the Employment of Disabled People: Working Group Report on Suggestions for Improving the Scheme's Effectiveness. Sheffield: MSC, 1985.

22. Manpower Services Commission. Employment Rehabilitation: A Review of the MSC's Employment Rehabilitation Services. London: MSC, 1981b.

23. Manpower Services Commission. Proposals for the Development of the MSC's Rehabilitation Service. Sheffield: MSC, 1984.

24. Manpower Services Commission. Review of Assistance for Disabled People. Sheffield: MSC, 1982a.

25. Cornes, P. The Future of Work for People with Disabilities: A View from Great Britain. New York: World Rehabilitation Fund, 1984.

26. Cornes, P. Employment Rehabilitation: The Aims and Achievements of a Service for Disabled People. London: HMSO, 1982: 11-16.

27. Sheikh, K, Meade, TW, Mattingly, S. Unemployment and the disabled. Rheumatology and Rehabilitation 1980; 19: 233-238.

28. Townsend, P. Employment and disability. In Walker, A and Townsend, P (Eds.). Disability in Britain. Oxford: Martin Robertson, 1981: 52-72.

29. Standing Medical Advisory Committee. Rehabilitation. London: HMSO, 1972b. (The Tunbridge Committee on services in England and Wales).

30. Standing Medical Advisory Committee (1972a), op. cit.

31. Report of the Royal Commission on the National Health Service (The Merrison Commission). London: HMSO, 1979.

32. NACEDP. Current Arrangements for Liaison between Health, Social and Employment Services for the Rehabilitation and Resettlement of Disabled People. National Advisory Council on the Employment of Disabled People Working Party report. London: Department of Employment, 1980.

33. Blaxter, M. The Meaning of Disability. London: Heinemann, 1976.

34. Cornes, P (1982a), op. cit.

35. Stubbins, J. The Clinical Attitude in Rehabilitation: A Cross-cultural View. New York: World Rehabilitation Fund, 1983: 19-28. For more general criticisms of resettlement services see:- Brewerton, D and Nichols, PJR. Return to work. British Medical Journal 1977; 245: 1006-1007; Nichols, PJR. Rehabilitation and resettlement of the working adult in the UK. International Rehabilitation Medicine 1979; 1, 138-143.

36. Royal College of Psychiatrists. Psychiatric Rehabilitation in the 1980s. London: Royal College of Psychiatrists, 1980.

37. NACEDP. Rehabilitation and Resettlement of Mentally Ill People. National Advisory Council on the Employment of Disabled People Working Party report. London: Department of Employment, 1979.

38. Wansbrough, N and Cooper, P. Open Employment after Mental Illness. London: Tavistock, 1980.

39. Floyd, M. Schizophrenia and Employment. Three unpublished reports on a research programme. London: Tavistock Institute, 1979; 1980a; 1980b.

40. Hyman, M. Invalidity Pension. Unpublished report for the DHSS, London School of Economics and Political Science, 1979.

41. Davoud, N. Part-time Employment: Time for Recognition, Organisation and Legal Reform. London: Multiple Sclerosis Society, 1980.

42. Townsend, P. The Disabled in Society. London: Greater London Association for the Disabled, 1967.

43. Sainsbury, S. Registered as Disabled. London: Bell and Sons, 1970.

44. Harris, A, Cox, E, Smith, CRW. Handicapped and Impaired in Great Britain: Part I. London: HMSO, 1971; Buckle, JR.

Handicapped and Impaired in Great Britain: Part II. London: HMSO, 1971.

45. For an overview see:- Brown, MJ and Bowl, R. Study of Local Authority Chronic Sick and Disabled Persons Surveys. Birmingham: University of Birmingham Social Services Unit, 1976.

46. The background to this debate and the fate of two Private Member's Bills to introduce relevant anti-discrimination legislation are described in:- Bochel, HM and Taylor-Gooby, P. Parliament and disability. Rehab Network 1986; Issue 3: 9-10. For a more hostile assessment see:- Oliver, M. The politics of disability. Critical Social Policy 1984; Issue 11: 21-32.

47. Bridge, B. Employment Services for the Disadvantaged. London: Personal Social Services Council, 1977.

48. Jordan, D. A New Employment Programme Wanted for Disabled People. London: Disability Alliance and Low Pay Unit, 1979.

49. Grover, R and Gladstone, F. Disabled People: A Right to Work. London: Bedford Square Press, 1981.

50. Townsend, P. (1981), op. cit.

51. Report by the Committee on Restrictions Against Disabled People (The Large Committee). London: HMSO, 1982.

52. Robbins, D. The Chance to Work: Improving Employment Prospects for Disabled People. London: Disablement Income Group, 1982.

53. Tebbutt, AG and Cornes, P. A brief outline and evaluation of statistical sources on disabled people of working age. In NACEDP (1980), op. cit.: 61-79.

54. Buckle, JR (1971), op. cit.

55. Manpower Services Commission (1982a), op. cit.: 7.

56. Townsend, P. Poverty in the United Kingdom. Harmondsworth: Penguin, 1979: 685-739.

57. Ibid., 727.

58. Wood, PHN and Badley EM. Setting disablement in perspective. International Rehabilitation Medicine 1978; 1: 32-37. See also Badley, EM, Thompson, RP, Wood, PHN. The prevalence and severity of major disabling conditions. International Journal of Epidemiology 1978; 7: 145-151.

59. It is quite unlikely that there will ever be a satisfactory estimate of the number of disabled people who are capable of part-time work. Any attempt to form an estimate would be complicated by the changing nature of work, advances in the management of disability and rules governing eligibility for any partial invalidity benefits that might be payable.

60. Manpower Services Commission (1982a), op. cit.: 8-9.

61. Kettle, M. Disabled People and Their Employment. London: Association of Disabled Professionals, 1979. See also Kettle, M. The accidents and absence of disabled people at work. In Cornes, P and Hunter, J (Eds.). Work, Disability and Rehabilitation. East Lansing: University Center for International Rehabilitation, 1985: 14-27.

62. Manpower Services Commission (1982a), op. cit.: 9-18.

63. Cornes, P (1982a), op. cit.: 29-39. See also Cumella, S. Employment Rehabilitation Centre Clients. Employment Rehabilitation Research Centre Information Paper No.2. Birmingham: MSC, 1981.

64. Manpower Services Commission (1981b), op. cit.: 23-27.

65. Manpower Services Commission (1982a), op. cit.: 62-75.

66. Since 1983, the Disablement Resettlement Officer Service and the newly formed Disablement Advisory Service have been encouraged to concentrate their efforts on recently and/or severely disabled clients, with other disabled people dealt with by mainstream Jobcentre personnel. In the case of Employment Rehabilitation, while the proportion of non-disabled but otherwise disadvantaged clients rose between 1981 and 1983, a policy decision, taken in 1984, reversed this trend by reaffirming that ERC places were intended primarily for disabled people. See Manpower Services Commission (1984), op. cit.: 19-24.

67. Manpower Services Commission (1982a), op. cit.: 98-99.

68. For a brief description development and main outcomes of the research programme, see:- Cornes, P. The work of the Employment Rehabilitation Research Centre. In Singleton, WT and Debney, LM (Eds.). Occupational Disability: The Approaches of Government, Industry and the Universities. Lancaster: MTP Press, 1982b: 253-263; Cornes, P. Employment rehabilitation in Great Britain. In Floyd, M and North, K (Eds.). Disability and Employment. London: Anglo-German Foundation, 1985a: 33-40.

69. Cornes, P (1982a), op. cit.: 34.

70. Manpower Services Commission (1982a), op. cit.: 13.

71. Manpower Services Commission. Code of Good Practice on the Employment of Disabled People. Sheffield: MSC, 1982b.

72. Townsend, P. (1979), op. cit.: 727-733.

73. Bowe, F. Demography and Disability: A Chartbook for Rehabilitation. Arkansas: Rehabilitation Research and Training Center, University of Arkansas, 1983. Bowe's estimate, based on official statistics, has been confirmed by a recent national survey. See:- Louis Harris and Associates. The ICD Survey of Disabled Americans. New York: International Center for the

Disabled, 1986.

74. The recent trend is towards development of in-house rehabilitation programmes. For a comprehensive review of such innovatory programmes see, e.g., Galvin, DE. Health promotion, disability management and rehabilitation in the workplace. Rehabilitation Literature 1986; 47: 218-223.

75. Walker, DD. Disability in a large public sector work force. In Cornes, P and Hunter, J (1985), op. cit.: 7-13.

76. Kettle, M. (1985), op. cit.

77. Stevenson, J. Employment and Resettlement Among Applicants for Industrial Rehabilitation. Unpublished report, Department of Social Administration, University of Manchester, 1969.

78. Sheikh, K, Meade TW, Mattingly S (1980), op. cit.

79. Cumella, S. Patterns of Resettlement after Employment Rehabilitation. Employment Rehabilitation Research Centre Information Paper No.11. Birmingham: MSC, 1982.

80. Cornes, P (1982), op. cit.: 11-14; 79-86.

81. Manpower Services Commission (1982a), op. cit.:21.

82. Manpower Services Commission. Positive Policies. London: MSC, 1979b.

83. Manpower Services Commission. Fit for Work. London: MSC, 1979c.

84. Manpower Services Commission (1981a), op. cit.

85. Manpower Services Commission (1982b), op. cit.

86. Manpower Services Commission (1982a), op. cit.: 62-71.

87. Manpower Services Commission (1981b), op. cit.: 31-33.

88. Manpower Services Commission (1984), op. cit.:25-33.

89. Cornes, P. (1982), op. cit.: 91-95.

90. Disability Alliance. Comments on the MSC's Discussion Document "The Quota Scheme for the Employment of Disabled People". Unpublished paper, 1979.

91. Committee on Restrictions Against Disabled People (1982), op. cit.

92. Cornes, P. (1982), op. cit.: 91-95.

93. Stubbins, J. The Clinical Attitude in Vocational Rehabilitation. Unpublished Fellowship report for the World Rehabilitation Fund, 1980.

94. Gellman, W. Changes in the British Job Placement Program for Disabled Persons During a Period of Economic Dislocation and High Unemployment. Unpublished Fellowship report for the World Rehabilitation Fund, 1984.

95. Kettle, M. Beyond the schoolgate. Contact 1983; 37: 11-15. See also the report and recommendations from a recent National Advisory Council Working Party:- NACEDP. The Additional Employment Problems of Young Disabled People. National Advisory Council on the Employment of Disabled People Working Party report. London: Department of Employment, 1985.

96. The most recently published resettlement statistics for ERC clients show a steady improvement in performance since 1982. Between that date and 1986 the percentage of former clients in employment three months after completing their courses doubled from 22 to 44 per cent. Manpower Services Commission. Annual Report 1985-86. Sheffield: MSC, 1986: 31.

97. Levitan, SA and Taggart, R. Jobs for the Disabled. Baltimore and London: The John Hopkins University Press, 1977.

98. Haveman, RH, Halberstadt V, Burkhauser RV. Public Policy Toward Disabled Workers. Ithaca: Cornell University Press, 1986: 172-187.

99. Noble, JH. Employment in the context of disability policy. In Habeck, RV, Frey, WD, Tate, DG, Galvin, DE (Eds.). Economics and Equity in Employment for People with Disabilities: International Policies and Practices. East Lansing: University Center for International Rehabilitation, 1985: 94-106.

100. See e.g. Walker, A. New policy directions. In Floyd, M and North, K (1985), op. cit.: 21-28.

101. Such disincentives are widely recognised as major impediment to rehabilitation and resettlement. See e.g. Nichol, PJR (1979), op. cit.; Berkowitz, M. Work Disincentives and Rehabilitation. Falls Church Va: Institute for Information Studies, 1980.

102. In late 1986, implementation of the Sheltered Placement Scheme was halted temporarily because all funding allocated for this purpose for the financial year 1986-87 was exhausted. However, in a report to the National Advisory Council on the Employment of Disabled People made in December 1986, the Manpower Services Commission reaffirmed its commitment to the scheme and looked forward to its further expansion in 1987-88.

103. Noble, JH. Commentary. In Cornes, P (1984), op. cit: 71-73.

104. For a detailed description of the Invalid Co-operative system see:- International Labour Office. Work for the Disabled: Vocational Rehabilitation and Employment Creation. Geneva: ILO, 1979: 79-109; Geist, GO and Geist, CS. A view of Poland and vocational rehabilitation. Journal of Rehabilitation 1982; 48(3): 63-66.

105. Only one study has focussed on this aspect, reporting that around 10 per cent of clients in the two ERCs studied had compensation claims pending or settled. As one of these centres was the only one in the network located alongside a medical rehabilitation centre, the proportion of clients who were involved in insurance claims could be higher than elsewhere. It is of interest that involvement in a claim was not found to be a predictor of resettlement on completion of an ERC course. See:- Mattingly, S and Sheikh, K. Employment Rehabilitation. Unpublished research report, Garston Manor Medical Rehabilitation Centre, 1981: 42, 80-94; Sheikh, K and Mattingly S. Factors associated with completion of employment rehabilitation courses. Journal of Social and Occupational Medicine 1981; 31: 16-18; Sheikh, K and Mattingly, S. Employment rehabilitation: outcome and prediction. American Journal of Industrial Medicine 1984; 5: 383-393.

Chapter Three: REHABILITATION AND PERSONAL INJURY CLAIMS LITIGATION

1. Report of the Inter-Departmental Committee on the Rehabilitation and Resettlement of Disabled Persons (The Tomlinson Committee). London: HMSO, 1943: para. 116.

2. Social Insurance and Allied Services (The Beveridge Report). London: HMSO, 1942: paras. 426-439. The other two main assumptions guiding Beveridge's thinking on social security and social policy were that there should be provision for children's allowances and that policies should contribute to maintenance of employment.

3. Ibid. para. 79(ix).

4. British Medical Association. Report of the Committee on Fractures. London: BMA, 1935.

5. Report of the Inter-Departmental Committee on the Rehabilitation of Persons Injured by Accident (The Delevigne Committee). London: HMSO, 1938.

6. Report of the Departmental Committee on the System of Compensation for Injuries to Workmen (The Holman Gregory Committee). London: HMSO, 1920.

7. Brown, JC. Disability Income Part 1: Industrial Injuries. London: Policy Studies Institute, 1982: 121-122. Brown's detailed study has been particularly helpful in identifying sources of information relevant to this section on rehabilitation and compensation.

8. For a general introduction to the legal background to this legislation see:- Munkman, J. Employer's Liability at Common Law (Ninth Edition). London: Butterworths, 1979: 1-25.

9. Delevigne Committee(1938), op. cit.

10. Bolderson, H. The origins of the disabled persons quota and its symbolic significance. Journal of Social Policy 1980; 9: 174-175.

11. Gladstone, DE. Disabled people and employment. Social Policy and Administration 1985; 19: 101-111; Bolderson, H (1980), op. cit.: 169-186.

12. Beveridge Report (1942), op. cit.: para. 79(ix).

13. Ibid. Appendix G, Memoranda from Organisations, Paper 23: para. 5.

14. Ibid. Appendix G, Memoranda from Organisations, Paper 24: paras. 14-15.

15. Ibid. para. 79(ix).

16. Report of the Royal Commission on Civil Liability and Compensation for Personal Injury (The Pearson Commission). London: HMSO, 1978: para. 44.

17. Lord Chancellor's Department. Civil Justice Review: Personal Injuries Litigation. London: Lord Chancellor's Department, 1986: 7.

18. New Zealand's no-fault compensation scheme has been described, inter alia, by:- Ison, TG. Accident Compensation. London: Croom Helm, 1980; Fahy, JL. Accident Compensation Coverage (Seventh Edition). Wellington: Accident Compensation Corporation, 1983.

19. The Pearson Commission (1978), op. cit.: paras. 184-237, 1714-1718. See also Atiyah, PS. Accidents, Compensation and the Law (Third Edition). London: Weidenfeld and Nicolson, 1980: 623-627.

20. The examples cited here were reported in an unsigned article by the Post Magazine and Insurance Monitor's liability correspondent. See:- Liability review 1985 part 2: a year to remember. Post Magazine and Insurance Monitor 1986; 147(8): 24-28.

21. Atiyah, PS. (1980), op. cit.: 232-235.

22. Lord Chancellor's Department (1986), op. cit.: 7; The Pearson Commission (1978), op. cit.: Volume II, para. 65 and Table 12.

23. The Pearson Commission (1978), op. cit.: para. 35.

24. Lord Chancellor's Department (1986), op. cit.: 7.

25. Ibid. 7.

26. The Pearson Commission (1978), op. cit.: Volume II, paras. 155-159 and Table 29 (for work place injuries) and Volume II, paras. 182-187 and Table 37 (for road traffic injuries).

27. Ibid.: Volume II, paras. 58-59 and Table 11.

28. Lord Chancellor's Department (1986), op. cit.: 7.

29. Harris, D, MacLean, M, Genn, H, Lloyd-Bostock, S, Fenn, P, Corfield, P and Brittan, Y. Compensation and Support for Illness and Injury. Oxford: Clarendon Press, 1984: 46-47.

30. The Pearson Commission (1978), op. cit.: Volume II, Tables 122 and 124.

31. Lord Chancellor's Department (1986), op. cit.: 7.

32. Harris, D et al. (1984), op. cit.: 112-113.

33. The Pearson Commission (1978), op. cit.: Volume II, paras. 389-390 and Table 84; Lord Chancellor's Department (1986), op. cit.: 7-9; Harris, D et al. (1984), op. cit.: 70-76. See also: Atiyah, PS. (1980), op. cit.: 235-238.

34. Harris, D et al. (1984), op. cit.: 58-65.

35. Ibid.: 76-77.

36. The Pearson Commission (1978), op. cit.: Volume II, paras. 63-64 and Table 11.

37. Atiyah, PS. (1980), op. cit.: 230-231.

38. The Pearson Commission (1978), op. cit.: Volume II, para. 522 and Table 109.

39. Harris, D et al. (1984), op. cit.: 86-91.

40. Relevant data is reported in Chapter Five of this study.

41. Lord Chancellor's Department (1986), op. cit.:7.

42. This account of the operation of the medicolegal system is based on several sources, but is especially indebted to Atiyah's description of the administration of the tort system. See Atiyah, PS. (1980), op. cit.: 296-319. Other useful sources included:- Brown, JC. (1982), op. cit.: 157-178; Harris, D et al. (1984), op. cit.: 79-138; Lord Chancellor's Department (1986), op. cit.: 9-19; Pritchard, J. Personal Injury Litigation (Fifth Edition). London: Longmans, 1986.

43. The Motor Insurance Bureau is responsible for claims made by victims of road traffic accidents who are injured by unknown or uninsured parties. For a brief discussion of its role and responsibilities, See:- Pritchard, J. (1986), op. cit.: 214-216.

44. Harris, D et al. (1984), op. cit. 64-65.

45. Atiyah, PS. (1980), op. cit.: 296-297.

46. Ibid.: 315-316.

47. Personal injury claims settled without the benefit of a medical report generally tend to be the ones in which any injury is trivial and/or of secondary importance to other losses or expenses incurred by the accident such as replacement of damaged clothing or possessions.

48. See, e.g., Fournier, C. The fate of the medical record in an insurance company. Bulletin de la Societée Ophthalmologie Française 1980; 12: 1203-1205; Wilcox, DP. Release of medical evidence to patients and insurance companies. Texas Medicine 1980; 76: 69-71.

49. Zimmer, W. Basic medical record documentation within the scope of legal accident insurance. Hefte Unfallheikunde 1976; 126: 329-330.

50. Jowers, LV. It's your job: the contract to treat injuries includes an evidentiary responsibility. Journal of Legal Medicine 1977; 5: 85-88.

51. Paul, DM. Writing medicolegal reports. British Medical Journal 1981; 282: 2101-2102.

52. Ison, TG. The Forensic Lottery. London: Staples Press, 1967.

53. Harris, D. et al. (1984), op. cit.

54. See, e.g., Berkowitz, M (Ed.). Supplemental Studies for the National Commission on State Workman's Compensation Laws. Washington DC: National Commission on State Workman's Compensation Laws, 1973; Walls, RT, Masson, C and Werner, TJ. Negative incentives to vocational rehabilitation. Rehabilitation Literature 1977; 38: 143-150; Lynch, RK. Vocational rehabilitation of workers' compensation clients. Journal of Applied Rehabilitation Counseling 1978; 9: 164-167; Encel, S and Johnston, CE. Compensation and Rehabilitation: A Survey of Workers' Compensation Cases Involving Back Injuries and Lump Sum Settlements. Sydney: New South Wales University Press, 1978; Conley, R and Noble, JH. Workers' Compensation Reform: The Challenge for the 80s. Research Report of the Interdepartmental Task Force on Workers' Compensation, Volume 1. Washington DC: US Department of Labor, Employment Standards Administration, 1979; Eaton, MW. Obstacles to vocational rehabilitation of individuals receiving workers' compensation. Journal of Rehabilitation 1979; 45(2): 59-63; Cho, D. Rehabilitation for workers' compensation loss exposures. Journal of Risk and Insurance 1984; 51: 80-98.

55. It is generally accepted that the most significant contribution to the literature on "compensation neurosis", at least historically, was made by Miller in two lectures delivered before the Royal College of Physicians of London in 1961. See:- Miller, H. Accident neurosis I. British Medical Journal 1961; 242: 919-925; Miller, H. Accident neurosis II. British Medical Journal 1961; 242: 992-998. It should be noted, however, that his definition has been criticised for being too inclusive and for not discriminating clearly enough between patients who manifest neurotic symptoms that are caused by their involvement

in accidents and the much smaller group with whom Miller was concerned, whose symptoms are attributable to their involvement in litigation. See, e.g., Parker, N. Accident neurosis. In Howells, JG (Ed.). Modern Perspectives in the Psychiatric Aspects of Surgery. New York: Bruner-Mazel, 1976: 687-712. Another point to note is that, contrary to Miller's assertion that patients with compensation neurosis frequently return to work as soon as their claims are settled, the evidence from some more recent studies suggests that this is not necessarily the case. See, e.g., Encel, S and Johnston, CE. (1978), op. cit.: 22-33. For a recent, more general review of the literature on this subject see:- Weighill, VE. Compensation neurosis: a review of the literature. Journal of Psychosomatic Research 1983; 27: 97-104.

56. For a general overview see:- Maurice-Williams, RS. Spinal Degenerative Disease. Bristol: John Wright and Sons, 1981. See also:- Krusen, EM and Ford, DE. Compensation factor in low back injuries. Journal of the American Medical Association 1958; 166: 1128-1133; Beals, R and Hickman, N. Industrial injuries to the back and extremities. Journal of Bone and Joint Surgery 1972; 54: 1593-1611; Goldberg, R and Freed, M. Vocational adjustment, interest, work values and career plans of persons with spinal cord injuries. Scandinavian Journal of Rehabilitation Medicine 1973; 5: 3-11; Encel, S and Johnston, CE. (1978), op. cit.; Waddell, G, McCulloch, JA, Kummel, E, Venner, RM. Non-organic physical signs in low back pain. Spine 1980; 5: 117-125; Bogduk, N. The anatomy and pathophysiology of whiplash. Clinical Biomechanics 1986; 1: 92-101.

57. Weighill, VE (1983), op. cit.

58. See, e.g., Bull, JP. The injury severity score of road traffic casualties in relation to mortality, time of death, hospital treatment time and disability. Accident Analysis and Prevention 1975; 7: 249-255; Galasko, CSB, Murray, P, Hodson, M, Tunbridge, RJ and Everest, JT. Long-term Disability Following Road Traffic Accidents. Transport and Road Research Laboratory Research Report No.59. Crowthorne: Department of Transport, 1986.

59. See, e.g., Brewin, CR, Robson, MJ, Shapiro, DA. Social and psychological determinants of recovery from industrial injuries. Injury 1983; 14: 451-455.

60. See, e.g., Lee, RH. Recovery and Rehabilitation After Minor Fractures. HSRU Report No.36. Canterbury: University of Kent at Canterbury Health Services Research Unit, 1979; Smith ME, Auchincloss, JM, Ali, MS. Causes and consequences of hand injury. Journal of Hand Surgery 1985; 10-B: 288-292.

61. The surveys of patients with hand injuries, head injuries and lower limb fractures, carried out within the Developments in Rehabilitation Studies research programme alongside the present study, suggest this to be the case. Out of 358 patients treated as either out-patients or in-patients for hand injury, fewer than five per cent were known to be involved in personal injury claims, with a similar proportion contemplating such action.

Similarly, a re-examination of the 93 most severely injured patients in a sample of 1919 cases of head injury screened previously by Miller and Jones (Miller, JD and Jones, PA. The work of a regional head injury service. The Lancet, 18 May, 1985: 1141-1144) found that only 10 out of 51 survivors were involved in personal injury litigation. A third study of patients with lower limb fractures revealed a higher proportion. In this instance, approximately one quarter of a series of 102 patients were found to be pursuing personal injury claims. I am indebted to my colleagues Margaret Smith, for information on the hand and head injury surveys, and Hilary Watson, for information on the lower limb fracture survey.

62. Ison, TP (1967), op. cit.: 25-26.

63. Harris, D et al. (1984), op. cit.: 257-280.

64. Ibid. 260-269; 276-277.

65. Ibid. 340.

66. See, e.g., Jarvikoski, A. Early Rehabilitation at the Work Place. New York: World Rehabilitation Fund, 1980; Atkinson, FG. New study affirms cost effectiveness of rehabilitation services in Minnesota. Rehabilitation Forum 1983; 10(3): 24-27; Spitz, LK. Winning at cost containment in rehabilitation. Risk Management 1983 (July): 46-48.

67. Developments in this sphere are reviewed in:- Galvin, DE. Health promotion, disability management and rehabilitation in the workplace. Rehabilitation Literature 1986; 47: 218-223.

68. See, e.g., Tuck, M. Psychological and sociological aspects of industrial injury. Journal of Rehabilitation 1983; 49(3): 20-25; Hood, LE and Downs, JD. Return to Work: A Literature Review. Topeka, Kansas: The Menninger Foundation Rehabilitation Research and Training Center, 1985; Cumella, SJ. Measuring the outcome of employment rehabilitation. In Cornes, P and Hunter J (Eds.). Work, Disability and Rehabilitation. East Lansing: University Center for International Rehabilitation, 1985: 73-86; Matkin, RE. Insurance Rehabilitation. Austin, Texas: Pro-ed, 1985: 141-166; Burgel, BJ and Gliniecki, CM. Disability behaviour: delayed recovery in employees with work compensable injuries. American Association of Occupational Health Nursing Journal 1986; 34(1): 26-30.

69. For a recent, general review of this literature see:- Hester, EJ, Decelles, PG and Hood, LE. The Relationship Between Age and Physical Disability among Workers: Implications for the Future. Topeka, Kansas: The Menninger Foundation Rehabilitation Research and Training Center, 1986. See also:- Better, SR, Fine, PR, Simison, D, et al. Disability benefits as disincentives to rehabilitation. Health and Society 1979; 57: 412-457; Dunn, D. Vocational rehabilitation of the older disabled worker. Journal of Rehabilitation 1981; 47(4): 76-81; Growick, B and McMahon, B. Characteristics of older successful VR clients. Journal of Applied Rehabilitation Counseling 1983; 14(4): 46-48; Harris, D et al. (1984), op. cit.: 266-268;

Morrison, M, Magel, J and Brody, S. A study of return to work by older disabled rehabilitation clients. Forum 1985; 12(1): 1-6.

70. See, e.g., Better, SR et al. (1979), op. cit.; Somerville, P. Women in ERCs. Employment Rehabilitation Research Centre Information Paper No.7. Birmingham: MSC, 1981; Growick, B and McMahon, B (1983), op. cit.

71. Three recent studies which support this conclusion are:- Better, SR et al. (1979), op. cit.; Harris, D et al. (1984), op. cit.: 275-276; Sheik, K. Return to work following limb injuries. Journal of Social and Occupational Medicine 1985; 35: 114-117.

72. See, e.g., Bruckner, FE, Randle, AP. Return to work after severe head injury. Rheumatology and Physical Medicine 1972; 11: 344-348; Humphrey, M, Oddy, M. Return to work after head injury: a review of post-war studies. Injury 1980; 12: 107-114; Thomson, IV. Late outcome of very severe blunt head trauma: a 10-15 year second follow-up. Journal of Neurology, Neurosurgery and Psychiatry 1984; 47: 260-268.

73. See, e.g., Encel, S and Johnston, CE (1978), op. cit.; Eaton, MW (1979), op. cit.

74. See, e.g., Beals, R and Hickman, N (1972), op. cit.; Akabas, SH, Gottlieb, A and Yasser, R. Preventive rehabilitation: untapped horizon for VR agencies. American Rehabilitation 1979; 5: 20-23; Harris, D et al. (1984), op. cit.: 261-262, 268.

75. See, e.g., Sneath, FA. Follow-up of rehabilitees leaving industrial rehabilitation units. IRU Notes 1960; Issue 35: 15-28; Kennedy, H. A demographic study of rehabilitated and non-rehabilitated clients. Journal of Applied Rehabilitation Counseling 1974; 5: 238-243; Thomson, CB. A Follow-up Study of 600 Admissions to Plymouth ERC. Unpublished Employment Medical Advisory Service report, 1978.

76. See, e.g., Stevenson, J. Employment and Resettlement Among Applicants for Industrial Rehabilitation. Unpublished report, Department of Social Administration, University of Manchester, 1969; Hartmann, PC. A study of attitudes in industrial rehabilitation. Journal of Occupational Psychology 1972; 46: 87-92; Sheikh, K (1985), op. cit.

77. See, e.g., Osuji, ON. A Study of the Physical, Psychological and Social Factors Affecting Industrial Rehabilitees. Unpublished PhD thesis, University of Manchester, 1969.

78. See, e.g., Wing, JK. Social and psychological changes in a rehabilitation unit. Social Psychiatry 1966; 1: 21-28.

79. See, e.g., Osuji, ON (1969), op. cit.; Hartmann, PC (1972), op. cit. Roessler, R and Bolton, B. Psychosocial Adjustment to Disability. Baltimore: University Park Press, 1978.

80. See, e.g., Tuck, M (1983), op. cit.; Burgel, BJ and Gliniecki, CM (1986), op. cit. For a more general discussion, see:-

Harradence, JDF. Psychosocial Aspects of Employment Rehabilitation Centre Courses. Employment Rehabilitation Research Centre Information Paper No.4. Birmingham: MSC, 1981.

81. See, e.g., Osuji, ON (1969), op. cit. For a more detailed review of the concept of "acceptance of loss" and its implications for rehabilitation, see:- Wright, B. Physical Disability: A Psychological Approach. New York: Harper and Row, 1960.

82. The concept of "locus of control" was formulated by Rotter (See:- Rotter, JB. Social Learning and Clinical Psychology. Englewood Cliffs: Prentice-Hall, 1954). He proposed that individuals differed in the extent to which they feel they are in control of what happens to them and accept responsibility for their own actions. Those who do this are said to have an internal locus of control, those who tend to attribute responsibility to others are said to have an external locus of control. Various studies have suggested that internal locus of control may be related to positive response to medical treatment and rehabilitation. See, e.g., Larde, J and Clopton, JR. Generalised locus of control and health locus of control of surgical patients. Psychological Reports 1983; 52: 599-602; Wallston, BS and Wallston, KA. Locus of control and health: a review of the literature. Health Education Monographs 1978; 6: 107-117. For examples of research on the attribution of blame as a factor influencing recovery and return to work see: Bulman, RJ and Wortman, CB. Attributions of blame and coping in the "real world": severe accident victims react to their lot. Journal of Personality and Social Psychology 1977; 33: 351-363; Brewin, CR, Robson, MJ and Shapiro, DA (1983), op. cit.

83. See:- Aja, JH. The family system in the work adjustment process. In Lassiter, RA, Lassiter, MH, Hardy, RE, Underwood, JW and Cull, JG (Eds.). Vocational Evaluation, Work Adjustment, and Independent Living for Severely Disabled People. Springfield, Illinois: Chas. C Thomas, 1983: 217-230.

84. See, e.g., Rickarby, GA. Compensation neurosis and the psycho-social requirements of the family. British Journal of Medical Psychology, 1979; 52: 333-338; Bokan, JA, Ries, RK and Katon, WJ. Tertiary gain and chronic pain. Pain 1981; 10: 331-335.

85. See, e.g., Kennedy, H (1984), op. cit.; Thomson, CB (1978), op. cit.; Morrison, M, Magel, J and Brody, S (1985), op. cit.

86. See, e.g., Pati, GC and Adkins, JI. Managing and Employing the Handicapped: The Untapped Potential. Lake Forest, Illinois: Brace-Park, The Human Resource Press, 1981; Walker, DD. Disability in a large public sector work force. In Cornes, P and Hunter, J (1985), op. cit.: 7-13; Galvin, DE (1986), op. cit.; Hood, LE and Downs, JD (1986), op. cit.

87. See, e.g., Walls, RT, Masson, C and Werner, TJ (1977), op. cit.; Berkowitz, M. Disincentives and the rehabilitation of disabled persons. In Pan, EL, Backer, TE, Vash, CL (Eds.). Annual Review of Rehabilitation. New York: Springer Publishing, 1981:

40-57; Reagles, SA. Economic incentives and employment of the handicapped. Rehabilitation Counseling Bulletin 1981; 25: 13-19.

88. See, e.g., Sheikh, K, Meade, TW and Mattingly, S. Unemployment and the disabled. Rheumatology and Rehabilitation 1980; 19: 233-238; Cornes, P. Employment Rehabilitation: The Aims and Achievements of a Service for Disabled People. London: HMSO, 1982a: 11-16; Harris, D et al. (1984), op. cit.: 260-269.

Chapter Four: AIMS, METHODS AND PROCEDURES

1. Hester, EJ, Decelles, PG, Gaddis, EL. Predicting Which Disabled Employees Will Return to Work. Topeka, Kansas: The Menninger Foundation Rehabilitation Research and Training Center, 1986. This study has served as a model for parts of the return to work analysis described below and in Chapter Six.

2. Cornes, P, Aitken, RCB, and Tait, J. Delivery of Rehabilitation Services to Patients of Working Age with Unresolved Compensation Claims for Personal Injuries. Edinburgh: Rehabilitation Studies Unit, 1982. See also:- Cornes, P, and Tait, J. Insurance and rehabilitation. Post Magazine and Insurance Monitor 1983; 144: 1494-1496.

3. Data on other motor claimants will receive no further attention in this thesis, but will be the subject of a separate report.

4. Webb et al. use the term "unobtrusive measure" to describe various social research methods, including those based on documentary sources, in which there is no direct contact with subjects and, hence, no risk of Hawthorne or experimenter effects. Such procedures are commonly adopted in social science, with Durkheim's study of suicide probably the most significant and widely known example. See Webb, EJ, Campbell, DT, Schwartz, RD, Sechrest, L. Unobtrusive Measures: Nonreactive Research in the Social Sciences. Chicago: Rand McNally, 1966: 53-111; Durkheim, E. Suicide: A Study in Sociology. (Edited and with an introduction by George Simpson). London: Routledge and Kegan Paul, 1952.

5. Office of Population Censuses and Surveys. Classification of Occupations 1970. London: HMSO, 1970.

6. See, e.g., Health and Safety Executive. Health and Safety Statistics. London: HMSO, 1981.

7. See, e.g., Department of Health and Social Security. Health and Personal Social Services Statistics (1986 Edition). London: HMSO, 1986: Tables 3.7, 3.8 and 3.9, 32-37.

8. World Health Organization. Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death (in 2 volumes). Geneva: WHO, 1977.

9. American Medical Association and American Association for Automotive Medicine. The Abbreviated Injury Scale (1975 Revision). Proceedings of the American Society for Automotive Medicine, 1975: 438-467.

10. World Health Organization. International Classification of Impairments, Disabilities, and Handicaps: A Manual of Classification Relating to the Consequences of Disease. Geneva: WHO, 1980.

11. Bochel, HM, and Cornes, P. A Screening of Employers' Liability Claims Files. Edinburgh: Rehabilitation Studies Unit, 1984.

12. Cornes, P, and Bochel, HM. Do medicolegal reports meet insurers' requirements? Post Magazine and Insurance Monitor 1985; 146: 2035-2037.

13. Cornes, P, Bochel, HM, and Aitken, RCB. Rehabilitation and return to work of employers' liability claimants. International Journal of Rehabilitation Research 1986; 9: 119-128.

14. Cornes, P, and Bochel, HM. Fitness for work: medicolegal assessment of residual disability and employment handicap. Unpublished paper presented at the Second European Conference on Research in Rehabilitation, Dusseldorf, 18-19 November 1985.

15. Engelman, L. PLR Stepwise logistic regression. In Dixon, WJ (Ed.). BMDP Statistical Software (1985 Printing). Berkeley, California: University of California Press, 1985: 330-344.

16. Office of Population Censuses and Surveys (1970), op. cit.

17. American Medical Association and American Association for Automotive Medicine (1975), op. cit.

18. Paul, DM. Writing medicolegal reports. British Medical Journal 1981; 282: 2101-2102.

19. Ibid. 2101.

20. These procedures were developed originally at the Employment Rehabilitation Research Centre. For a report on their development see:- Cornes, P. Employment Rehabilitation: The Aims and Achievements of a Service for Disabled People. London: HMSO 1982a: 98.

21. Cornes, P and Bochel, HM. Medicolegal Reporting on Employers' Liability Claimants. Edinburgh: Rehabilitation Studies Unit, 1984.

22. Cornes, P and Bochel, HM (1985), op. cit.

23. Cornes, P, Bochel, HM and Aitken, RCB (1986), op. cit.

24. Cornes, P. Rehabilitation of insurance claimants. Unpublished paper presented at the WHO consultative meeting on Care of the Disabled in the Community, Edinburgh, 26-28 June 1986.

Chapter Five: COMPARISON OF EMPLOYERS' LIABILITY AND MOTOR CLAIMANTS

1. For the purpose of this study, a result is accepted as statistically significant if the probability of obtaining that result by chance is equal to or less than five per cent (i.e. $p < 0.05$). In reporting statistically significant results the convention adopted here is to report probability, as appropriate, at the 0.05, 0.01, 0.001 or 0.0001 levels. For results that are not statistically significant, the actual probability (e.g. $p = 0.37$) is reported followed by (NS) or not significant).

2. All percentages reported in this and later Chapters have been calculated exclusive of missing data.

3. Oakley estimated that, in the early 1970s, women comprised 38 per cent of the national labour force. More recent statistics from the Central Statistical Office reveal that, in 1985, women comprised approximately 40 per cent of the working population and 44 per cent of those who were in employment. Their increased participation since that time is also discussed, inter alia, by Somerville. See:- Oakley, A. Housewife. Harmondsworth: Penguin, 1974; Central Statistical Office. Annual Abstract of Statistics 1987; 123: Table 6.1, 107; Somerville, P. Women in ERCs. Employment Rehabilitation Research Centre Information Paper No.7. Birmingham: MSC, 1981.

4. See, e.g., Health and Safety Executive. Health and Safety Statistics. London: HMSO, 1981.

5. See. e.g., Miller, H. Accident neurosis II. British Medical Journal 1961; 242: 992-998; Woodyard, JE. Injury, compensation claims and prognosis: Parts I and II. Journal of Social and Occupational Medicine 1980; 30: 2-5; 57-60.

6. Blaxter, M. The Meaning of Disability. London: Heinemann, 1976.

7. NACEDP. Current Arrangements for Liaison between Health, Social and Employment Services for the Rehabilitation and Resettlement of Disabled People. National Advisory Council on the Employment of Disabled People Working Party report. London: Department of Employment, 1980.

8. See, e.g., Standing Medical Advisory Committee. Medical Rehabilitation: The Pattern for the Future. Edinburgh: HMSO, 1972a.

9. Cornes, P. Employment Rehabilitation: The Aims and Achievements of a Service for Disabled People. London: HMSO, 1982a.

10. Ibid. 39-40. This figure excludes the higher proportion of ERC clients who were referred to the service by Regional Medical Officers acting for the Department of Health and Social Security in reviews of claimants' continuing entitlement to Sickness or Invalidity Benefit.

11. Hester, EJ, Decelles, PG and Gaddis EL. Predicting Which Disabled Employees Will Return to Work. Topeka, Kansas: The Menninger Foundation Rehabilitation Research and Training Center, 1986: 29; 33-34.

12. See, e.g., Hood, LE and Downs, JD. Return to Work: A Literature Review. Topeka, Kansas: The Menninger Foundation Rehabilitation Research and Training Center, 1985: 35-36.

13. See, e.g., Spitz, LK. Winning at cost containment in rehabilitation. Risk Management 1983; (July): 46-48.

Chapter Six: RETURN TO WORK OF PERSONAL INJURY CLAIMANTS

1. While the simple dichotomous variable measuring presence or absence of a head injury did not discriminate between claimants who were in employment or not in employment at settlement, those claimants with head injuries which were associated with subsequent disturbances of personality or cognitive deficits are recorded as such in the variable recording whether or not psychological problems were experienced.

2. Engleman, L. PLR Stepwise logistic regression. In Dixon, WJ (Ed.). BMDP Statistical Software (1985 Printing). Berkeley, California: University of California Press, 1985: 330-344. The following description of stepwise logistic regression procedures draws on Engelman's description of this procedure.

3. A third goodness-of-fit test, which compared observed and predicted frequencies at each cell in the data, is not reported because it was not appropriate to these data.

4. A prospective study is an essential next step, not least because estimates of predictive accuracy based on retrospective analysis may well be biased. Such a study has been designed and approved in principle by the Association of British Insurers. At the time of writing, however, formal negotiations with individual member companies who wish to participate in the study had yet to be undertaken.

5. The VR Index will also be evaluated prospectively in the study mentioned in the preceding note.

6. Harris, D et al. Compensation and Support for Illness and Injury. Oxford: Clarendon Press, 1984: 267-268.

7. Sheikh, K. Return to work following limb injuries. Journal of Social and Occupational Medicine 1985; 35: 114-117.

8. Harris, D et al. (1984), op. cit.: 277-278.

9. Hester, EJ, Decelles, PG and Gaddis EL. Predicting Which Disabled Employees Will Return to Work. Topeka, Kansas: The Menninger Foundation Rehabilitation Research and Training Center, 1986.

10. Ibid. 13-16.

Chapter Seven: MEDICOLEGAL REPORTING ON PERSONAL INJURY CLAIMANTS

1. Paul DM. Writing medicolegal reports. British Medical Journal 1981; 282: 2101-2102.

2. For a more detailed analysis of these data, see:- Cornes P and Bochel HM. Medicolegal Reporting on Employers' Liability Claimants. Edinburgh: Rehabilitation Studies Unit, 1984.

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Chapter Eight: CONCLUSIONS AND IMPLICATIONS FOR FUTURE PRACTICE AND POLICY

1. Ison, TG. The Forensic Lottery. London: Staples Press, 1967.

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3. See, e.g., Standing Medical Advisory Committee. Medical Rehabilitation: The Pattern for the Future. Edinburgh: HMSO, 1972a; Standing Medical Advisory Committee. Rehabilitation. London: HMSO, 1972b.

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5. Standing Medical Advisory Committee (1972a), op. cit.; Standing Medical Advisory Committee (1972b) op. cit.

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9. Developments in this sphere have become so well established that its growing literature now includes textbooks written for the guidance of private practitioners. See, e.g., Matkin, RE. Insurance Rehabilitation: Service Applications in Disability Compensation Systems. Austin, Texas: Pro-Ed, 1985; Taylor, LJ, Gotter, M and Backer TE (Eds.). Handbook of Private Sector Rehabilitation. New York: Springer, 1985.

10. The Health and Employment Liaison scheme proposed by a National Advisory Council on the Employment of Disabled People Working Party in 1980 was intended to fulfil this function (see note 4). Although this scheme was not implemented, the case-coordinating role it envisaged has been adopted by voluntary organisations to help the take-up and expansion of the MSC's sheltered placement scheme and in the private sector where the NEL-Britannia Disability Counselling Service for its PHI claimants operates along these lines. See, e.g. NACEDP (1980), op. cit.: 29-31; Whitehouse, R. The Shaw Trust's experience with supported employment. In Woods, DE and Akabas, SH (Eds.). Employer Initiatives in the Employment or Re-employment of People with Disabilities: Views from Abroad. New York: World Rehabilitation Fund, 1985: 105-110; Cornes, P. At last a rehabilitation counselling service. Post Magazine and Insurance Monitor 1986c; 147(32): 22-23.

11. At the request of NEL-Britannia in December 1985, the author devised a draft training programme for the staff of the proposed Disability Counselling Service, and contracts were agreed under the auspices of UnivEd Technologies Ltd to provide a six month induction training programme and ongoing professional supervision, advice and support for the three nurses who were appointed to provide the new service when it was launched in April 1986. See:- Cornes, P (1986c), op. cit. for and account of the background, aims and operation of the NEL Britannia

Disability Counselling Service.

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APPENDIX 2

Research Instruments

A Employers' Liability Claims Screening: Coding Frame

B Motor Claims Screening: Coding Frame

C Employers' Liability and Motor Claims Screening: Factors Influencing Return to Work

D Employers' Liability and Motor Claims Screening: Compliance with Published Guidance on Medicolegal Reporting

E Employers' Liability and Motor Claims Screening: Content Analysis of Medicolegal Reports

APPENDIX 2A

EMPLOYERS' LIABILITY CLAIMS SCREENING: CODING FRAME

Columns Used

PERSONAL DATA

Deck 1

1. ID — Exercise and case identification number — 1-5 ☐☐☐☐☐

2. LOCALITY — Claimant's home area — 6-7 ☐☐

1 Scotland
2 North of England
3 North East England
4 North West England
5 East Midlands
6 West Midlands
7 Wales
8 South West England
9 Thames Valley
10 East Anglia
11 Greater London
12 South of England
13 South East England
99 Missing

3. AGE — Age at time of accident — 8-9 ☐☐

4. SEX — Sex of claimant — 10 ☐

0 Female
1 Male
9 Missing

5. MSTATUS — Marital status — 11 ☐

1 Single
2 Married
3 Divorced/separated
4 Widow/widower
9 Missing

6. OCCUP Occupation (Registrar-General)

Schoolchildren code 993, students 994, pensioners 997, insufficient information 998, missing 999. 12-14 ☐☐☐

7. CLASS Social class (Registrar-General)

1 Professional/managerial
2 Other non-manual
3 Skilled manual
4 Semi-skilled manual
5 Unskilled manual
8 Other
9 Missing

15 ☐

8. EMPSEC Employment sector

Schoolchildren code 993, students 994, pensioners 997, insufficient information 998, missing 999. 16-18 ☐☐☐

9. PERPCJ Time in pre-claim job

1 Up to 6 months
2 Over 6 months to 1 year
3 Over 1 year to 2 years
4 Over 2 years to 5 years
5 Over 5 years to 10 years
6 Over 10 years
7 Not in employment
9 Missing

19 ☐

ACCIDENT DATA

10. TYPACC Type of accident

1 Fall less than 6ft 6in
2 Fall more than 6ft 6in
3 Fall, skip, trip same level
4 Struck by object
5 Striking against object
6 Rubbed, abraded by object
7 Over-exertion, strenuous, awkward movements
8 Exposure to extreme termperatures, conditions
9 Exposure to electric current
11 Exposure to potentially harmful subtances
12 Powered vehicle accidents
13 Other accidents/industrial diseases
99 Missing

20-21 ☐☐

MEDICAL DATA

11. TRCONT Medical treatment continuing at settlement

0 No
1 Yes
8 Fatal
9 Missing

22 ☐

12. TRTIME Months until discharge from medical care

Fatal accident code 98, missing 99.

23-24 ☐☐

13. NREPS Number of consultants' reports

0 No reports
1 One report
2 Two reports
3 Three reports
4 Four reports
5 Five reports
6 Six reports
7 Seven reports
8 Eight or more reports
9 Missing

25 ☐

14. TYPCON Type of consultant (DHSS)

Missing code 99.

26-27 ☐☐

15. MEDREP Months from accident to first medical report

Fatal accident code 98, missing 99.

28-29 ☐☐

16. MEDREPN Months from accident to last medical report

Fatal accident code 98, missing 99.

30-31 ☐☐

17. INJTOT Total number of injuries/impairments

1 One injury
2 Two injuries
3 Three injuries
4 Four injuries
5 Five injuries
6 Six injuries
7 Seven injuries
8 Eight or more injuries
9 Missing

32 ☐

18. INJSIG Number of significant injuries/impairments

See INJTOT for coding details.

33 ☐

19. REGINJ1 Region of primary injury/impairment

1 Head
2 Upper limb
3 Chest
4 Spine
5 Lower limb
6 Internal
8 Multiple injuries of equal severity
9 Missing

34 ☐

20. NATINJ1 Nature of primary injury/impairment (HSE)

0 No injury
1 Fatal
2 Amputation
3 Fracture
4 Dislocation
5 Concussion and internal injuries
6 Lacerations and open wounds
7 Contusions
8 Burns
9 Acute poisioning
10 Sprains and strains
11 Superficial injuries
12 Multiple main injuries of a different nature
13 Other injuries (specify)
99 Missing

35-36 ☐☐

21. LOCINJ1 Location of primary injury/impairment (ISCD)

Fatal code 998. Missing code 999.

37-39 ☐☐☐

22. SEVINJ1 Severity of primary injury/impairment (AIS)

0 No injury
1 Minor
2 Moderate
3 Severe (not life threatening)
4 Serious (life threatening, survival probable)
5 Critical (survival uncertain)
6 Maximum (currently untreatable)
9 Missing

40 ☐

23. IMPAIR1 Primary impairment (ICIDH)

Fatal code 998, missing 999.

41-43 ☐☐☐

24. PROGNOS Prognosis (ICIDH Outlook Scale)

0 Not disabled
1 Recovery potential
2 Improvement potential
3 Assistance potential
4 Stable disability
5 Amelioration potential
6 Deteriorating disability
7 Indeterminable outlook
8 Outlook unspecified
9 Missing

44 ☐

25. MEDREDIS Last medical report refers to residual disability

0 No disability
1 Behaviour disability
2 Communication disability
3 Personal care disability
4 Locomotor disability
5 Body disposition disability
6 Dexterity disability
7 Situational disability
8 Particular skill disability
9 Other activity restrictions (specify)
10 General reference to disability
98 Fatal
99 Missing

45-46 ☐☐

26. SEVDIS Severity of residual disability (ICIDH Severity Scale)

0 Not disabled
1 Difficulty in performance
2 Aided performance
3 Assisted performances
4 Dependent performance
5 Augmented inability
6 Complete inability
7 Severity unspecified
8 Fatal
9 Missing

47 ☐

27. MEDREHCP Last medical report refers to handicap

0 No handicap
1 Orientation handicap
2 Physical independence handicap
3 Mobility handicap
4 Occupation handicap
5 Social integration handicap
6 Economic self-sufficiency handicap
7 Other handicaps
8 General reference to handicap
9 Missing

48 ☐

28. OCCHCP Anticipated occupational handicap

0 Fatal accident
1 No handicap anticipated
2 Handicap anticipated
9 Missing

49 ☐

CONTACT WITH REHABILITATION AND RESETTLEMENT SERVICES

29. OCCTPY Reference to occupational therapy

0 Fatal accident
1 Reference
9 Missing

50 ☐

30. INDTPY Reference to industrial therapy

0 Fatal accident
1 Reference
9 Missing

51 ☐

31. SERVICE — Reference to specialist medical/ vocational rehabilitation services

0 Fatal accident
1 Medical Rehabilitation Centre
2 Disablement Resettlement Officer
3 Employment Rehabilitation Centre
4 Other (specify.....)
9 Missing

52 ☐

32. REHAB — Reference to rehabilitation plan or programme

0 Fatal accident
1 Reference
9 Missing

53 ☐

33. PSYPROB — Reference to psychiatric problems

0 Fatal accident
1 GP treatment
2 Out-patient treatment
3 In-patient treatment

54 ☐

RETURN TO WORK DATA

34. RETJOB — Return to work since accident

0 Fatal accident
1 Still ill as a result of accident
2 Ill, other reasons
3 Studies
4 In paid employment
5 Unemployed
6 Other economically inactive (eg retired)
8 Not applicable
9 Missing

55 ☐

35. PEROWK — Months off work from accident to settlement

Fatal code 98, missing 99.

56-57 ☐☐

PROCEDURAL AND FINANCIAL DATA

36. LEGAL — Legal action by third party

1 No legal action
2 Writ issued
3 Writ settled before judgement
4 Judge's decision
9 Missing

58 ☐

59-64

37. DATEACC — Date of accident (day, month, year) ☐☐☐☐☐☐

65-70

38. DATESET — Date of settlement (day, month, year) ☐☐☐☐☐☐

71-72

39. ACCSET — Number of months from accident to settlement ☐☐

Deck 2

1-6

40. SDTOT — Special damages (£) ☐☐☐☐☐☐

7-12

41. GENDAM — General damages (£) ☐☐☐☐☐☐

13-18

42. OTHDAM — Other damages (£) ☐☐☐☐☐☐

19-24

43. TOTDAM — Total damages gross of contributory negligence (£) ☐☐☐☐☐☐

25-26

44. CONNEG — Contributory negligence (%) ☐☐

27-32

45. ACTDAM — Actual damages (£) ☐☐☐☐☐☐

46. FEETOT Fees (£)

33-37

47. GDTOTAL Grand total costs (£)

38-43

APPENDIX 2B

MOTOR CLAIMS SCREENING: CODING FRAME

Columns Used

PERSONAL DATA

Deck 1

1. ID — Exercise and case identification number — 1-4 ☐☐☐☐

2. ACCNO — Accident number — 5-7 ☐☐☐

3. AREA — Claimant's home area — 8-9 ☐☐

1 Scotland
2 North of England
3 North East England
4 North West England
5 East Midlands
6 West Midlands
7 Wales
8 South West England
9 Thames Valley
10 East Anglia
11 Greater London
12 South of England
13 South East England
99 Missing

4. AGE — Age at time of accident — 10-11 ☐☐

5. SEX — Sex of claimant — 12 ☐

0 Female
1 Male
9 Missing

6. MSTATUS — Marital status — 13 ☐

1 Single
2 Married
3 Divorced/separated
4 Widow/widower
9 Missing

7. DEPENDS Reference to dependants

1 Yes
9 Missing

14 ☐

8. ECPOS Economic position (Registrar-General)

1 In employment
2 Out of employment, sick
3 Out of employment, other
4 Retired
5 Permanently sick or disabled
6 Student
7 Other economically inactive
9 Missing

15 ☐

9. OCCUP Occupation (Registrar-General)

Schoolchildren code 993, students 994,
housewives 995, unemployed 996, pensioners 997.
Insufficient information code 998, missing 999.

16-18 ☐☐☐

10. CLASS Social class

1 Professional/managerial
2 Other non-manual
3 Skilled manual
4 Semi-skilled manual
5 Unskilled manual
8 Other
9 Missing

19 ☐

11. EMPSEC Employment sector

Schoolchildren code 993, students 994,
housewives 995, unemployed 996, pensioners 997,
insufficient information code 998, missing 999.

20-22 ☐☐☐

12. PERPCJ Time in pre-claim job

1 Up to 6 months
2 Over 6 months to 1 year
3 Over 1 year to 2 years
4 Over 2 years to 5 years
5 Over 5 years to 10 years
6 Over 10 years
7 Not in employment
9 Missing

23 ☐

ACCIDENT DATA

13. TYPTRAN Form of transport

1 Pedestrian
2 Bicycle
3 Moped/scooter
4 Motor cycle
5 Taxi
6 Car
7 Minibus/caravan
8 Bus/coach
9 Other (specify)
99 Missing

24-25 ☐☐

14. MCPOS If on moped/motor cycle, driver/passenger

1 Driver
2 Pillion passenger
3 Side car passenger
8 Not applicable
9 Missing

26 ☐

15. CARPOS If in car/taxi, driver/passenger

1 Driver
2 Front seat passenger
3 Rear seat passenger
8 Not applicable
9 Missing

27 ☐

16. MINIPOS If in minibus, driver/passenger

1 Driver
2 Front seat passenger
3 Rear seat passenger
8 Not applicable
9 Missing

28 ☐

17. BUSPOS If in bus, driver/passenger

1 Driver
2 Passenger
8 Not applicable
9 Missing

29 ☐

18. OTHPOS — If others, give details — 30 ☐

19. SEATBLT — If applicable, was seat belt worn

1 Fitted, not used
2 In use
3 Not fitted
8 Not applicable
9 Missing

31 ☐

20. CHILDST — If child, was child's seat used

1 No
2 Yes
8 Not applicable
9 Missing

32 ☐

21. OWNER — Ownership of vehicle

1 Owned by driver
2 Borrowed
3 Hired
4 Taxi
5 Company car
6 Commercial vehicle
7 Public transport
8 Not applicable
9 Missing

33 ☐

22. ALCOHOL — Policy-holder connected with alcohol

1 No
2 Breathalysed, passed
3 Failed/refused
9 Missing

34 ☐

23. TIMEACC — Time of accident (24 hour clock) — 35-36 ☐☐

24. LIGHT — Lighting conditions

1 Daylight
2 Darkness
9 Missing

37 ☐

25. CONDNS Road surface conditions

1 Dry
2 Damp
3 Wet
4 Flood
5 Frost
6 Snow
7 Ice
9 Missing

38 □

26. MANOEUV Manoeuvre at time of accident

1 Reversing
2 Parked
3 Stopping
4 Starting
5 U-turn
6 Turning/waiting to turn left
7 Turning/waiting to turn right
8 Changing lane
9 Overtaking
10 Going/waiting to go ahead
98 Not applicable
99 Missing

39-40 □□

27. TYPAREA Type of area

1 Built-up
2 Non-built-up
9 Missing

41 □

28. ROAD Class of road

1 Motorway
2 Trunk roads (A)
3 Classified non-trunk road (B)
4 Unclassified (C)
9 Missing

42 □

29. JUNCTN Type of junction

0 Not at/near junction
1 'T'/staggered
2 Cross roads
3 Roundabout
4 'Y'
5 Multiple
6 Slip road
7 Other
9 Missing

43 □

30. PEDEST Pedestrian location

1 Pedestrian crossing
2 Within 50m of crossing
3 Crossing elsewhere
4 On footway/verge/refuge
5 In carriageway - not crossing
8 Not applicable
9 Missing

44 ☐

31. NVEHIC Number of vehicles involved

1 Single vehicle
2 Single vehicle & bicycle
3 Two vehicles
4 Three or more vehicles
9 Missing

45 ☐

MEDICAL DATA

32. TRCONT Medical treatment continuing at settlement

1 No
2 Yes
8 Fatal
9 Missing

46 ☐

33. INTRTIME Months of in-patient treatment

Fatal accident code 98, missing 99.

47-48 ☐☐

34. OUTTRTIME Months until discharge from medical care

Fatal accident code 98, missing 99.

49-50 ☐☐

35. NREPS Number of consultants' reports

0 No reports
1 One report
2 Two reports
3 Three reports
4 Four reports
5 Five reports
6 Six reports
7 Seven reports
8 Eight or more reports
9 Missing

51 ☐

36. TYPCON — Type of consultant (DHSS)

Missing code 99.

52-53 ☐☐

37. MEDREP — Months from accident to first medical report

Fatal accident code 98, missing 99.

54-55 ☐☐

38. MEDREPN — Months from accident to last medical report

Fatal accident code 98, missing 99.

56-57 ☐☐

39. INJTOT — Total number of injuries/impairments

1 One injury
2 Two injuries
3 Three injuries
4 Four injuries
5 Five injuries
6 Six injuries
7 Seven injuries
8 Eight or more injuries
9 Missing

58 ☐

40. INJSIG — Number of significant injuries/impairments

See INJTOT for coding details.

59 ☐

41. REGINJ1 — Region of primary injury/impairment

1 Head
2 Upper limb
3 Chest
4 Spine
5 Lower limb
6 Internal
8 Multiple injuries of equal severity
9 Missing

60 ☐

42. NATINJ1 Nature of primary injury/impairment (HSE)

0 No injury
1 Fatal
2 Amputation
3 Fracture
4 Dislocation
5 Concussion and internal injuries
6 Lacerations and open wounds
7 Contusions
8 Burns
9 Acute poisoning
10 Sprains and strains
11 Superficial injuries
12 Multiple main injuries of a different nature
13 Other injuries (specify)
99 Missing

61-62 ☐☐

43. NATINJ2 Nature of secondary injury (HSE)

See NATINJ1 for coding details.

63-64 ☐☐

44. NATINJ3 Nature of tertiary injury (HSE)

See NATINJ1 for coding details.

65-66 ☐☐

45. LOCINJ1 Location of primary injury/impairment

See full coding instructions for details concerning the ISCD. Missing code 999.

67-69 ☐☐☐

46. LOCINJ2 Location of secondary injury (ISCD)

See LOCINJ1 for coding details.

70-72 ☐☐☐

47. LOCINJ3 Location of tertiary injury (ISCD)

See LOCINJ1 for coding details.

73-75 ☐☐☐

48. SEVINJ Severity of injuries (ISS)

See full coding instructions for details of the ISS. Missing code 99.

76-77 ☐☐

Deck 2

49. SEVINJ1 Severity of primary injury (AIS)

0 No injury
1 Minor
2 Moderate
3 Severe (not life threatening)
4 Serious (life threatening, survival probable)
5 Critical (survival uncertain)
6 Maximum (currently untreatable)
9 Missing

1 ☐

50. SEVINJ2 Severity of secondary injury

See SEVINJ1 for coding details. Only one injury code 7.

2 ☐

51. SEVINJ3 Severity of tertiary injury

See SEVINJ1 for coding details. Only one injury code 7, two injuries code 8.

3 ☐

52. IMPAIR1 Primary impairment (ICIDH)

See full coding instructions for details of the ICIDH. Fatal code 998, missing 999.

4-6 ☐☐☐

53. IMPAIR2 Secondary impairment (ICIDH)

See IMPAIR1 for coding details. Only one impairment code 996.

7-9 ☐☐☐

54. IMPAIR3 Tertiary impairment (ICIDH)

See IMPAIR1 for coding details. Only impairment code 996, two impairments code 997.

10-12 ☐☐☐

55. PROGNOS Prognosis (ICIDH Outlook Scale)

0 Not disabled
1 Recovery potential
2 Improvement potential
3 Assistance potential
4 Stable disability
5 Amelioration potential
6 Deteriorating disability
7 Indeterminable outlook
8 Outlook unspecified
9 Missing

13 ☐

56. DIS1 Last medical report refer to disability

0 No disability
1 Behaviour disability
2 Communication disability
3 Personal care disability
4 Locomotor disability
5 Body disposition disability
6 Dexterity disability
7 Situational disability
8 Particular skill disability
9 Other activity restrictions (specify)
10 General reference to disability
98 Fatal
99 Missing

14-15 ☐☐

57. DIS2 Last medical report refer to disability

See DIS1 for coding details. Only one disability code 0.

16-17 ☐☐

58. DIS3 Last medical report refer to disability

See DIS1 for coding details. Only one or two disabilities code 0.

18-19 ☐☐

59. DIS4 Last medical report refer to disability

See DIS1 for coding details. Only one to three disabilities code 0.

20-21 ☐☐

60. DIS5 Last medical report refer to disability

See DIS1 for coding details. Only one to four disabilities code 0. 22-23 ☐☐

61. SEVDIS Severity of residual disability (ICIDH Severity Scale)

0 Not disabled
1 Difficulty in performance
2 Aided performance
3 Assisted performances
4 Dependent performance
5 Augmented inability
6 Complete inability
7 Severity unspecified
8 Fatal
9 Missing

24 ☐

62. HCP1 Last medical report refer to no handicap

0 Fatal
1 Reference
9 Missing

25 ☐

63. HCP2 Last medical report refer to orientation handicap

0 Fatal
1 Reference
9 Missing

26 ☐

64. HCP3 Last medical report refer to physical independence handicap

0 Fatal
1 Reference
9 Missing

27 ☐

65. HCP4 Last medical report refer to mobility handicap

0 Fatal
1 Reference
9 Missing

28 ☐

66. HCP5 Last medical report refer to occupation handicap

0 Fatal
1 Reference
9 Missing

29 ☐

67. HCP6 Last medical report refer to social integration handicap

0 Fatal
1 Reference
9 Missing

30 ☐

68. HCP7 Last medical report refer to economic self-sufficiency handicap

0 Fatal
1 Reference
9 Missing

31 ☐

69. HCP8 Last medical report refer to other handicaps

0 Fatal
1 Reference (specify)
9 Missing

32 ☐

70. HCP9 Last medical report refer generally to handicap

0 Fatal
1 Reference
9 Missing

33 ☐

CONTACT WITH REHABILITATION AND RESETTLEMENT SERVICES

71. OCCTPY Reference to occupational therapy

0 Fatal
1 Reference
9 Missing

34 ☐

72. INDTPY Reference to industrial therapy

0 Fatal
1 Reference
9 Missing

35 ☐

73. SERVICE Reference to specialist medical/ vocational rehabilitation services

0 Fatal
1 Medical rehabilitation centre assessment
2 Disablement Resettlement Officer
3 Employment Rehabilitation Centre
4 Other (specify)
9 Missing

36 ☐

74. REHAB Reference to rehabilitation plan or programme

0 Fatal
1 Reference
9 Missing

37 ☐

75. PSYPROB Reference to psychological problems

0 Normal or positive attributes
1 Hysterical reactions
2 Depressive reactions
3 Anxiety reactions
4 Poor motivation
5 Adverse personality change
8 Fatal
9 Missing

38 ☐

RETURN TO WORK DATA

76. EDUC If EMPSEC = 993, or 994, effect on education

0 Fatal accident
1 No effect
2 Negative effect
8 Not applicable
9 Missing

39 ☐

77. RETOCC1 If EMPSEC = 993, occupation outcome

0 Fatal accident
1 Still ill as a result of accident
2 Ill, other reasons
3 Return to school
4 Return to higher education
5 Paid employment
6 Out of employment
7 Other economically inactive
8 Not applicable
9 Missing

40 ☐

78. RETOCC2 If EMPSEC = 994, occupation outcome

0 Fatal accident
1 Still ill as a result of accident
2 Ill, other reasons
3 Return to studies
4 Paid employment
5 Out of employment
6 Other economically inactive
8 Not applicable
9 Missing

41 ☐

79. RETOCC3 If EMPSEC = 995, occupation outcome

0 Fatal accident
1 Still ill as a result of accident
2 Ill, other reasons
3 Studies
4 Paid employment
5 Out of employment
6 Other economically inactive
8 Not applicable
9 Missing

42 ☐

80. RETOCC4 If EMPSEC = 996, occupation outcome

See RETOCC3 for coding details.

43 ☐

81. RETOCC5 If EMPSEC = 997, occupation outcome

See RETOCC3 for coding details.

44 ☐

82. RETOCC6 If EMPSEC = 000 to 992 occupation outcome

See RETOCC3 for coding details.

45 ☐

83. PEROWK If EMPSEC = 001 to 992, months off work accident to settlement

Fatal accident code 98, missing 99.

46-47 ☐☐

PROCEDURAL AND FINANCIAL DATA

84. SHARE — Insurers' sharing agreement

1 No
2 Yes
9 Missing

48 ☐

85. OFFENCE — Policy holder convicted of offence

1 No
2 Yes
9 Missing

49 ☐

86. LEGAL — Legal action by TP

1 No
2 Writ issued
3 Writ, settled before judgement
4 Judge's decision
9 Missing

50 ☐

87. DATEACC — Date of accident (day, month, year)

51-56 ☐☐☐☐☐☐

88. DATESET — Date of settlement of claim (day, month, year)

57-62 ☐☐☐☐☐☐

89. ACCSET — Number of months from accident to settlement

63-64 ☐☐

Deck 3

90. SDTOT — Special damages (£)

1-6 ☐☐☐☐☐☐

Nil code 000000, missing code 999999.

91. GENDAM — General damages (£)

7-12 ☐☐☐☐☐☐

Nil code 000000, missing code 999999.

92. OTHDAM Other damages (£)

13-18

Nil code 000000, missing code 999999.

93. TOTDAM Total damages gross of contributory negligence (£)

19-24

Nil code 000000, missing code 999999.

94. CONNEG Contributory negligence (%)

25-26

95. ACTDAM Actual damages (£)

27-32

Nil code 000000, missing code 999999.

96. FEETOT Fees (£)

33-37

Nil code 000000, missing code 999999.

97. GDTOTAL Grand total costs (£)

38-43

Nil code 000000, missing code 999999.

University of Edinburgh

APPENDIX 2C

EMPLOYERS' LIABILITY AND MOTOR CLAIMS SCREENING

FACTORS INFLUENCING RETURN TO WORK

Columns Used

1. Case — 1-4 ☐☐☐☐

2. Outcome
1 In employment
2 Unemployed
3 Out of labour market (temporarily or permanently)
9 Missing
— 5 ☐

3. Age (at time of accident)
1 16-20
2 21-30
3 31-40
4 41-50
5 51-60(F) or 65(M)
9 Missing
— 6 ☐

4. Sex
1 Male
2 Female
— 7 ☐

5. Occupation
1 Professional
2 Intermediate
3 Other 'White Collar'
4 Skilled manual
5 Semi-skilled manual
6 Unskilled manual
9 Missing
— 8 ☐

6. Claim
1 Motor
2 Employers' Liability
— 9 ☐

7. Number of significant injuries/impairments
1 One
2 Two
3 Three
4 Four
5 Five
6 Six or more
9 Missing
— 10 ☐

8. Severity of injuries/impairments

1 Minor
2 Moderate
3 Severe
4 Serious/critical
9 Missing

11 ☐

9. Number of operative procedures (after acute management)

0 None
1 One
2 Two
3 Three
4 Four
5 Five or more
9 Missing

12 ☐

10. Length of medical treatment (months)

0 Less than 1 month
1 1 or more but less than 3
2 3 or more but less than 6
3 6 or more but less than 12
4 12 or more but less than 18
5 18 or more but less than 24
6 More than 24 months
9 Missing

13 ☐

11. Time off work (months)

0 Less than 1 month
1 1 or more but less than 3
2 3 or more but less than 6
3 6 or more but less than 12
4 12 or more but less than 18
5 18 or more but less than 24
6 24 or more but less than 36
7 More than 36 months
9 Missing

14 ☐

12. Time from accident to settlement (years)

1 Less than 1 year
2 1 or more but less than 2
3 2 or more but less than 3
4 3 or more but less than 4
5 4 or more but less than 5
6 More than 5 years
9 Missing

15 ☐

13. Settlement (£)

1 5,000- 6,000
2 6,001-10,000
3 10,001-20,000
4 20,001-40,000
5 40,001-80,000
6 More than 80,000
9 Missing

16 ☐

14.	Head injury	1 2	No Yes	17 ☐
15.	Spinal injury	1 2	No Yes	18 ☐
16.	Psychological problems	1 2	No Yes	19 ☐
17.	Regional labour market conditions	1 2 3	Low unemployment Medium unemployment High unemployment	20 ☐

APPENDIX 2D

EMPLOYERS' LIABILITY AND MOTOR CLAIMS SCREENING

COMPLIANCE WITH GUIDANCE ON MEDICOLEGAL REPORTING PRACTICE

Columns Used

1. Case — 1-4 ☐☐☐☐

CONSULTANT

2. Consultant number — 1, 2, 3 etc — 5 ☐

3. Number of reports — 1, 2, 3 etc — 6 ☐

4. Consultant's specialty — 7-8 ☐☐

orthopaedics.....01
general surgery.....02
ophthalmology.....03
neurosurgery/neurology.04
general physician.....05
plastic surgery.....06
dermatology.....07
ear, nose and throat...08
urology.....09
audiology.....10
respiratory medicine...11
radiology.....12
general practice.....13
psychiatry.....14
rehab. medicine.....15
no information.....19

IDENTIFICATION

5. Authority requesting report — 9 ☐
insurers.....0
third party solicitor...1
not known.....2

6. Patient's name — 10 ☐
present.....0
absent.....1

7. Patient's address — 11 ☐
present.....0
absent.....1

8.	Patient's age/DOB	present.....0 absent.... 1	12 ☐
9.	Patient's job	present.....0 absent.....1	13 ☐
10.	Patient's marital status	present.....0 absent.....1	14 ☐
11.	Patient's hobbies etc	mentioned.....0 not mentioned.....1	15 ☐
12.	Patient's family/social history	mentioned.....0 not mentioned.....1	16 ☐
13.	Examining doctor's name	given.....0 not given.....1	17 ☐
14.	Examining doctor's qualifications	given.....0 not given.....1	18 ☐
15.	Examining doctor's appointments	given.....0 not given.....1	19 ☐
16.	Examining doctor's experience	given.....0 not given.....1	20 ☐

MEDICAL EXAMINATION

17.	Date of examination	given.....0 not given.....1	21 ☐
18.	Place of examination	given.....0 not given.....1	22 ☐
19.	Duration of examination	given.....0 not given.....1	23 ☐
20.	Patient's consent	mentioned.....0 not mentioned.....1	24 ☐

MEDICAL HISTORY

21.	Patient's medical history	reported.....0 not reported.....1	25 ☐

HISTORY OF THE INCIDENT

22. Explanation of the incident — given.....0; not given.....1 — 26 ☐

23. Details of immediate effects — given.....0; not given.....1 — 27 ☐

24. Rate and state of recovery (and any delayed effects) — given.....0; not given.....1 — 28 ☐

25. Present complaint/s — given.....0; not given.....1 — 29 ☐

26. Medical advice/treatment between accident and examination — given.....0; not given.....1 — 30 ☐

MEDICAL EXAMINATIONS

27. General medical examination — reported.....0; not reported.....1 — 31 ☐

28. Specific medical examination — reported.....0; not reported.....1 — 32 ☐

29. Special investigations — reported.....0; not reported.....1 — 33 ☐

OPINION

30. Doctor's views on consistency of examination findings with history of incident viewed against background of patient's complaints and medical history

given.....0; not given.....1 — 34 ☐

31. Doctor's views on possible causes of condition/s found on examination

given.....0; not given.....1 — 35 ☐

32. Prognosis — given.....0; not given.....1 — 36 ☐

APPENDIX 2E

EMPLOYERS' LIABILITY AND MOTOR CLAIMS SCREENING

CONTENT ANALYSIS OF MEDICOLEGAL REPORTS

Columns Used

1. Case — 1-4

5-6

2. Patient's personal/social circumstances

7-8

3. Occupational data (excluding occupational handicap)

9-10

4. Medical history

11-12

5. History of incident

13-14

6. Impairments

15-16

7. Treatment and response to treatment

17-18

8. Current medical status (from examination)

19-20

9. Complaints and disabilities

21-22

10. Handicap/s

23-24

11. Psychological reactions to accident

25-26

12. Requirements for other rehabilitation services

27-28

13. Future disablement

29-30

14. Other observations

31-35

15. Length of report/s on this case (words)

APPENDIX 3

Supplementary Statistical Analysis

A Representativeness of the employers' liability claimant sample

B Representativeness of the motor claimant sample

C Employment outcome at settlement: univariate analysis

D Return to work analysis: correlation matrix

E Employment outcome at 12 months: univariate analysis

F Comparison of claimants with different VR Index scores

APPENDIX 3A

REPRESENTATIVENESS OF THE EMPLOYERS' LIABILITY CLAIMANT SAMPLE

By age group:-

Age group	Sample	Other EL claimants	Total
Up to 20 years	13	19	32
21 to 30 years	16	16	32
31 to 40 years	23	20	43
41 to 50 years	25	20	45
51+ years	22	26	48
	99	101	200
No information	3	6	9
Total	102	107	209

Chi square = 2.20, 4 d.f., p = 0.70 (not significant)

By sex:-

Sex	Sample	Other EL claimants	Total
Male	97	98	195
Female	5	9	14
Total	102	107	209

Chi square = 1.03, 1 d.f., p = 0.31 (not significant)

By occupational skill level:-

Occupational skill level	Sample	Other EL claimants	Total
Non-manual	8	10	18
Skilled manual	45	52	97
Semi-skilled manual	15	13	28
Unskilled manual	34	32	66
Total	102	107	209

Chi square = 0.81, 3 d.f., p = 0.85 (not significant)

By number of injuries or impairments:-

Number of injuries	Sample	Other EL claimants	Total
One	70	75	145
Two	11	12	23
Three or four	13	12	25
Five or more	3	4	7
	97	103	200
No information	5	4	9
Total	102	107	209

Chi square = 0.22, 3 d.f., p = 0.97 (not significant)

By severity of main injury or impairment:-

Severity of injury	Sample	Other EL claimants	Total
Minor	15	10	25
Moderate	56	61	117
Severe	20	23	43
Serious, critical	1	1	2
Fatal	3) 4	6) 7	9) 11
	95	100	196
No information	7	6	13
Total	102	107	209

Chi square = 2.06, 3 d.f., p = 0.56 (not significant)

By return to work by settlement:-

Employment status at settlement	Sample	Other EL claimants	Total
In employment	48	51	99
Not in employment	45	43	88
	93	94	187
Others/no information	9	13	22
Total	102	107	209

Chi square = 0.13, 1 d.f., p = 0.72 (not significant)

By time to settlement:-

Time to settlement	Sample	Other EL claimants	Total
Up to 24 months	30	32	62
25 to 36 months	38	31	69
37+ months	29	36	65
	97	99	196
No information	5	8	13
Total	102	107	209

Chi square = 1.51, 2 d.f., p = 0.47 (not significant)

By amount of damages:-

Damages	Sample	Other EL claimants	Total
£ 5,000 to £ 6,000	28	36	64
£ 6,001 to £10,000	37	38	75
£10,001 to £25,000	27	16	43
£25,001+	10	17	27
Total	102	107	209

Chi square = 5.53, 3 d.f., p = 0.14 (not significant)

APPENDIX 3B

REPRESENTATIVENESS OF THE MOTOR CLAIMANT SAMPLE

By age group:-

Age group	Sample	Other motor claimants	Total
Up to 20 years	21	158	179
21 to 30 years	30	156	186
31 to 40 years	24	120	144
41 to 50 years	24	78	102
51+ years	25	117	142
	124	629	753
No information	6	14	20
Total	130	643	773

Chi square = 6.77, 4 d.f., p = 0.15 (not significant)

By sex:-

Sex	Sample	Other motor claimants	Total
Male	98	442	540
Female	32	201	223
Total	130	643	773

Chi square = 2.27, 1 d.f., p = 0.13 (not significant)

By occupational skill level:-

Occupational skill level	Sample	Other motor claimants	Total
Non-manual	40	197	237
Skilled manual	37	171	208
Semi-skilled manual	14	63	77
Unskilled manual	9	60	69
Not in labour market	16	82	98
	116	573	689
No information	14	70	84
Total	130	643	773

Chi square = 0.96, 4 d.f., p = 0.92 (not significant)

By number of injuries or impairments:-

Number of injuries	Sample	Other motor claimants	Total
One	39	147	186
Two	37	162	199
Three or four	28	172	200
Five or more	15	77	92
	119	558	677
No information	11	85	96
Total	130	643	773

Chi square = 3.49, 3 d.f., p = 0.32 (not significant)

By severity of main injury or impairment:-

Severity of injury	Sample	Other motor claimants	Total
Minor	16	57	73
Moderate	30	144	174
Severe	54	271	325
Serious, critical	7	44	51
Fatal	20	98	118
	127	614	741
No information	3	29	32
Total	130	643	773

Chi square = 1.66, 4 d.f., p = 0.80 (not significant)

By return to work by settlement:-

Employment status at settlement	Sample	Other motor claimants	Total
In employment	66	284	350
Not in employment	44	205	249
	110	489	599
No information		56	56
Total	110	545	655*

* Exclusive of 118 fatal injuries

Chi square = 0.14, 1 d.f., p = 0.79 (not significant)

By time to settlement:-

Time to settlement	Sample	Other motor claimants	Total
Up to 24 months	25	171	196
25 to 36 months	36	189	225
37+ months	49	227	276
	110	587	697
No information	20	56	76
Total	130	643	773

Chi square = 2.17, 2 d.f., p = 0.34 (not significant)

By amount of damages:-

Damages	Sample	Other motor claimants	Total
£ 5,000 to £ 6,000	31	138	169
£ 6,001 to £10,000	33	190	223
£10,001 to £25,000	48	199	247
£25,001+	17	111	128
	129	638	767
No information	1	5	6
Total	130	643	773

Chi square = 3.28, 3 d.f., p = 0.35 (not significant)

APPENDIX 3C

EMPLOYMENT OUTCOME AT SETTLEMENT: UNIVARIATE ANALYSIS

By age group:-

	Outcome at settlement		
Age group	In employment	Not in employment	All claimants
16 to 20 years	24	6	30
21 to 30 years	26	10	36
31 to 40 years	27	17	44
41 to 50 years	24	19	43
51+ years	12	29	41
Total	113	81	194

Chi square = 23.17, 4 d.f., p < 0.0001

By sex:-

	Outcome at settlement		
Sex	In employment	Not in employment	All claimants
Female	14	16	30
Male	99	65	164
Total	113	81	194

Chi square = 1.96, 1 d.f., p = 0.16 (not significant)

By occupational skill level:-

	Outcome at settlement		
Occupational skill level	In employment	Not in employment	All claimants
Professional/ intermediate	21	5	26
Other non-manual	12	14	26
Skilled manual	47	25	72
Semi-skilled manual	23	10	33
Unskilled manual	10	27	37
Total	113	81	194

Chi square = 25.06, 4 d.f., p < 0.0001

By type of claim:-

Claim	Outcome at settlement: In employment	Not in employment	All claimants
Motor	66	35	101
Employers' liability	47	46	93
Total	113	81	194

Chi square = 4.37, 1 d.f., p < 0.05

By number of injuries or impairments:-

Number of injuries	Outcome at settlement: In employment	Not in employment	All claimants
One	60	56	116
Two	27	12	39
Three	15	4	19
Four or more	11	9	20
Total	113	81	194

Chi square = 7.40, 3 d.f., p = 0.06 (not significant)

By severity of main injury or impairment:-

Severity of injury	Outcome at settlement: In employment	Not in employment	All claimants
Minor	18	23	41
Moderate	50	26	76
Severe, more serious	45	32	77
Total	113	81	194

Chi square = 5.25, 2 d.f., p = 0.07 (not significant)

By number of operative procedures:-

Number of operations	Outcome at settlement: In employment	Not in employment	All claimants
None	50	42	92
One	33	20	53
Two	14	8	22
Three	12	4	16
Four or more	4	7	11
Total	113	81	194

Chi square = 5.20, 4 d.f., p = 0.27 (not significant)

By length of medical treatment:-

Length of medical treatment	Outcome at settlement: In employment	Not in employment	All claimants
Up to 3 months	14	1	15
4 to 6 months	27	9	36
7 to 12 months	30	13	43
13 to 18 months	21	14	35
19+ months	21	44	65
Total	113	81	194

Chi square = 32.12, 4 d.f., p < 0.0001

By time off work:-

Period off work	Outcome at settlement: In employment	Not in employment	All claimants
Up to 3 months	17	1	18
4 to 6 months	36	1	37
7 to 12 months	36	1	37
13 to 24 months	19	9	28
25 to 36 months	3	34	37
37+ months	2	35	37
Total	113	81	194

Chi square = 137.89, 5 d.f., p < 0.0001

By time from accident to settlement:-

Time from accident to settlement	Outcome at settlement: In employment	Outcome at settlement: Not in employment	All claimants
Up to 24 months	33	10	43
25 to 36 months	41	27	68
37 to 48 months	18	17	35
49 to 60 months	10	10	20
60+ months	11	17	28
Total	113	81	194

Chi square = 11.53, 4 d.f., p < 0.05 (not significant)

By amount of damages:-

Damages	Outcome at settlement: In employment	Outcome at settlement: Not in employment	All claimants
£ 5,000 to £ 6,000	38	16	54
£ 6,001 to £10,000	38	22	60
£10,001 to £20,000	29	24	52
£20,001+	9	19	28
Total	113	81	194

Chi square = 12.16, 3 d.f., p < 0.01

By presence of head injury:-

Head injury	Outcome at settlement: In employment	Outcome at settlement: Not in employment	All claimants
Absent	106	71	177
Present	7	10	17
Total	113	81	194

Chi square = 2.23, 1 d.f., p = 0.14 (not significant)

By presence of back or spinal injury:-

	Outcome at settlement		
Spinal injury	In employment	Not in employment	All claimants
Absent	100	51	151
Present	13	30	43
Total	113	81	194

Chi square = 17.83, 1 d.f., p < 0.0001

By presence of psychological problem:-

	Outcome at settlement		
Psychological problem	In employment	Not in employment	All claimants
Absent	102	47	149
Present	11	34	45
Total	113	81	194

Chi square = 27.53, 1 d.f., p < 0.0001

By regional labour market conditions:-

	Outcome at settlement		
Regional labour market	In employment	Not in employment	All claimants
Low unemployment	49	18	67
Medium unemployment	36	24	60
High unemployment	28	39	67
Total	113	81	194

Chi square = 13.64, 2 d.f., p < 0.001

APPENDIX 3D

RETURN TO WORK ANALYSIS: CORRELATION MATRIX

	Time off work	Length of treatment	Psychological problem	Age	Spinal injury	Labour market	Damages	Occupation	Time to settlement	Claim	Head injury	Sex	N operations	Severity of injury	N injuries
Outcome	-.80	-.39	-.38	-.32	-.30	-.26	-.24	-.24	-.23	-.15	-.11	-.10	.02	.08	.10
Time off work		.61	.29	.24	.17	.20	.34	.27	.39	.08	.14	.11	.14	.09	.03
Length of treatment	.15	.10	-.03	.00	.36	.07	.37	-.05	.07	.09	.40	.13	.15		
Psychological problem		.22	.38	.00	.09	.06	.27	.03	.26	.14	-.09	-.22	.01		
Age			.22	.09	.03	.00	.10	.09	.03	.02	-.16	-.17	-.07		
Back/spinal injury				.13	-.11	.00	.08	.01	-.12	.12	-.31	-.51	-.13		
Labour market					-.04	.17	.03	.21	.02	.02	.20	-.11	-.18		
Damages						.05	.25	-.10	.09	-.02	.35	.37	.30		
Occupation							-.01	.42	.06	-.22	-.09	.01	.05		
Time to settlement								-.04	.12	.23	.20	.00	.05		
Claim									-.11	-.27	-.07	-.26	-.45		
Head injury										.17	.04	.14	.16		
Sex											-.03	.01	.05		
No of operations												.40	.38		
Severity of injury													.41		

Base: 194 cases
r = .19 at the 0.05 level of statistical significance
r = .25 at the 0.01 level of statistical significance
r = .32 at the 0.001 level of statistical significance

APPENDIX 3E

EMPLOYMENT OUTCOME AT TWELVE MONTHS: UNIVARIATE ANALYSIS

By age group:-

	Outcome at 12 months		
Age group	In employment	Not in employment	All claimants
16 to 20 years	22	8	30
21 to 30 years	21	15	36
31 to 40 years	18	26	44
41 to 50 years	18	25	43
51+ years	13	28	41
Total	92	102	194

Chi square = 15.14, 4 d.f., p < 0.01

By sex:-

	Outcome at 12 months		
Sex	In employment	Not in employment	All claimants
Female	9	21	30
Male	83	81	164
Total	92	102	194

Chi square = 4.32, 1 d.f., p < 0.05

By occupational skill level:-

	Outcome at 12 months		
Occupational skill level	In employment	Not in employment	All claimants
Professional/ intermediate	21	5	26
Other non-manual	9	17	26
Skilled manual	38	34	72
Semi-skilled manual	15	18	33
Unskilled manual	9	28	37
Total	92	102	194

Chi square = 22.10, 4 d.f., p < 0.001

By type of claim:-

Claim	Outcome at 12 months: In employment	Not in employment	All claimants
Motor	52	49	101
Employers' liability	40	53	93
Total	92	102	194

Chi square = 1.40, 1 d.f., p = 0.24 (not significant)

By number of injuries or impairments:-

Number of injuries	Outcome at 12 months: In employment	Not in employment	All claimants
One	53	63	116
Two	22	17	39
Three	9	10	19
Four or more	8	12	20
Total	92	102	194

Chi square = 1.85, 3 d.f., p = 0.61 (not significant)

By severity of main injury or impairment:-

Severity of injury	Outcome at 12 months: In employment	Not in employment	All claimants
Minor	19	22	41
Moderate	41	35	76
Severe, more serious	32	45	77
Total	92	102	194

Chi square = 2.40, 2 d.f., p = 0.30 (not significant)

By number of operative procedures:-

Number of operations	Outcome at 12 months: In employment	Not in employment	All claimants
None	44	48	92
One	28	25	53
Two	9	13	22
Three	9	7	16
Four or more	2	9	11
Total	92	102	194

Chi square = 5.27, 4 d.f., p = 0.26 (not significant)

By length of medical treatment:-

Length of medical treatment	Outcome at 12 months: In employment	Not in employment	All claimants
Up to 3 months	14	1	15
4 to 6 months	27	9	36
7 to 12 months	26	17	43
13 to 18 months	15	20	35
19+ months	10	55	65
Total	92	102	194

Chi square = 53.65, 4 d.f., p < 0.0001

By outcome at settlement:-

Outcome at settlement	Outcome at 12 months: In employment	Not in employment	All claimants
In employment	89	24	113
Not in employment	3	78	81
Total	92	102	194

Chi square = 106.60, 1 d.f., p < 0.0001

By time from accident to settlement:-

Time from accident to settlement	Outcome at 12 months: In employment	Outcome at 12 months: Not in employment	All claimants
Up to 24 months	31	12	43
25 to 36 months	33	35	68
37 to 48 months	13	22	35
49 to 60 months	7	13	20
60+ months	8	20	28
Total	92	102	194

Chi square = 17.24, 4 d.f., p < 0.01

By amount of damages:-

Damages	Outcome at 12 months: In employment	Outcome at 12 months: Not in employment	All claimants
£ 5,000 to £ 6,000	32	22	54
£ 6,001 to £10,000	34	26	60
£10,001 to £20,000	22	30	52
£20,001+	4	24	28
Total	92	102	194

Chi square = 17.97, 3 d.f., p < 0.001

By presence of head injury:-

Head injury	Outcome at 12 months: In employment	Outcome at 12 months: Not in employment	All claimants
Absent	87	90	177
Present	5	12	17
Total	92	102	194

Chi square = 2.42, 1 d.f., p = 0.12 (not significant)

By presence of back or spinal injury:-

	Outcome at 12 months		
Spinal injury	In employment	Not in employment	All claimants
Absent	80	71	151
Present	12	31	43
Total	92	102	194

Chi square = 8.44, 1 d.f., p < 0.01

By presence of psychological problem:-

	Outcome at 12 months		
Psychological problem	In employment	Not in employment	All claimants
Absent	82	67	149
Present	10	35	45
Total	92	102	194

Chi square = 14.92, 1 d.f., p < 0.0001

By regional labour market conditions:-

	Outcome at 12 months		
Regional labour market	In employment	Not in employment	All claimants
Low unemployment	40	27	67
Medium unemployment	32	28	60
High unemployment	20	47	67
Total	92	102	194

Chi square = 13.19, 2 d.f., p < 0.01

APPENDIX 3F

COMPARISON OF CLAIMANTS WITH DIFFERENT VR INDEX SCORES

By age group:-

	VR Index score				
Age group	7 to 11	12 to 14	15 to 17	18 to 22	Total
16 to 30 years	36	19	11	0	66
31 to 40 years	12	18	13	1	44
41 to 50 years	7	16	15	5	43
51+ years	3	12	11	15	41
Total	58	65	50	21	194

Chi square = 63.77, 9 d.f., p < 0.0001

By sex:-

	VR Index score				
Sex	7 to 11	12 to 14	15 to 17	18 to 22	Total
Male	56	56	34	18	164
Female	2	9	16	3	30
Total	58	65	50	21	194

Chi square = 17.02, 3 d.f., p < 0.001

By occupational skill level:-

	VR Index score				
Occupational skill level	7 to 11	12 to 14	15 to 17	18 to 22	Total
Professional/ intermediate	16	7	2	1	26
Skilled manual	30	30	11	1	72
Semi-skilled manual	11	7	13	2	33
Other non-manual	0	11	12	3	26
Unskilled manual	1	10	12	14	37
Total	58	65	50	21	194

Chi square = 79.74, 12 d.f., p < 0.0001

By type of claim:-

	VR Index score				
Claim	7 to 11	12 to 14	15 to 17	18 to 22	Total
Motor	34	39	22	6	101
Employers' liability	24	26	28	15	93
Total	58	65	50	21	194

Chi square = 8.59, 3 d.f., p < 0.05

By number of injuries or impairments:-

	VR Index score				
Number of injuries	7 to 11	12 to 14	15 to 17	18 to 22	Total
One	33	32	34	17	116
Two	13	17	6	3	39
Three or more	12	16	10	1	39
Total	58	65	50	21	194

Chi square = 9.88, 6 d.f., p = 0.13 (not significant)

By severity of main injury or impairment:-

	VR Index score				
Severity of injury	7 to 11	12 to 14	15 to 17	18 to 22	Total
Minor	8	10	10	13	41
Moderate	24	28	18	6	76
Severe, serious	26	27	22	2	77
Total	58	65	50	21	194

Chi square = 25.59, 6 d.f., p < 0.001

By number of operative procedures:-

Number of operations	VR Index score 7 to 11	12 to 14	15 to 17	18 to 22	Total
None	24	30	24	14	92
One	20	18	9	6	53
Two or more	14	17	17	1	49
Total	58	65	50	21	194

Chi square = 9.86, 6 d.f., p = 0.13 (not significant)

By length of medical treatment:-

Length of treatment	VR Index score 7 to 11	12 to 14	15 to 17	18 to 22	Total
Up to 6 months	30	14	6	1	51
7 to 12 months	16	16	8	3	43
13 to 18 months	10	17	6	2	35
19+ months	2	18	30	15	65
Total	58	65	50	21	194

Chi square = 64.84, 9 d.f., p < 0.0001

By time off work:-

Time off work	VR Index score 7 to 11	12 to 14	15 to 17	18 to 22	Total
Up to 12 months	50	36	5	1	92
13 to 24 months	5	12	8	3	28
25+ months	3	17	37	17	74
Total	58	65	50	21	194

Chi square = 90.17, 6 d.f., p < 0.0001

By time from accident to settlement:-

Time to settlement	VR Index score 7 to 11	12 to 14	15 to 17	18 to 22	Total
Up to 24 months	19	17	5	2	43
25 to 36 months	26	21	16	5	68
37 to 48 months	9	8	13	5	35
49+ months	4	19	16	9	48
Total	58	65	50	21	194

Chi square = 26.24, 9 d.f., p < 0.01

By amount of damages:-

Amount of damages	VR Index score 7 to 11	12 to 14	15 to 17	18 to 22	Total
£ 5,000 to £ 6,000	18	19	10	7	54
£ 6,001 to £10,000	22	19	12	7	60
£10,001 to £20,000	12	21	15	4	52
£20,001+	6	6	13	3	28
Total	58	65	50	21	194

Chi square = 12.12, 9 d.f., p = 0.21 (not significant)

By presence of head injury:-

Head injury	VR Index score 7 to 11	12 to 14	15 to 17	18 to 22	Total
Absent	55	62	42	18	177
Present	3	3	8	3	17
Total	58	65	50	21	194

Chi square = 6.41, 3 d.f., p = 0.09 (not significant)

By presence of back or spinal injury:-

Back or spinal injury	VR Index score 7 to 11		12 to 14		15 to 17		18 to 22		Total	
None	54		55		36		6		151	
Whiplash/fracture	4	) 4	8	) 10	6	) 14	4	) 15	22	) 43
Lumbar strain	0		2		8		11		21	
Total	58		65		50		21		194	

Chi square = 40.10, 3 d.f., p < 0.0001

By presence of psychological problem:-

Psychological problem	VR Index score 7 to 11		12 to 14		15 to 17		18 to 22		Total	
None	58		54		31		6		149	
Minor	0	) 0	11	) 11	5	) 19	3	) 15	19	) 45
Major	0		0		14		12		26	
Total	58		65		50		21		194	

Chi square = 52.53, 3 d.f., p < 0.0001

By regional labour market conditions:-

Regional labour market	VR Index score 7 to 11	12 to 14	15 to 17	18 to 22	Total
Low unemployment	31	25	8	3	67
Medium unemployment	19	18	18	5	60
High unemployment	8	22	24	13	67
Total	58	65	50	21	194

Chi square = 29.22, 6 d.f., p < 0.0001

APPENDIX 4

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APPENDIX 5

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